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ANALYSIS OF FACTORS IMPACTING LAND USE IN TRANSFORMING ISTANBUL HISTORICAL CITY CENTER

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Abstract- *Istanbul historical city center is going through a provincial transformation by quick population increase, multi-centered city development, developing tourism and trade feature pressures as well as selection of location for housing. Provincial transformation is briefly described as; an action plan integrating with the city and urban people, prepared to increase life quality based on strategic development plan and within the provincial development vision for the non-functional, old and worn provincial pieces unable to fulfill physical, social and economic development dynamics and new requirements. Objective of this study is to find out factors affecting provincial transformation that are observed in research district and positive negative effect ratios based on regression analysis. Research district Sultanahmet and surrounding area located between Divan Yolu Street and Topkapı Palace and Marmara Sea, which is considered among UNESCO Global Heritage Areas, having intensive cultural assets, transforming pursuant to tourism and trade feature pressure, preserving most of its authentic housing texture, worn out as well as observed to be a qualified housing location choice of people with high socio-economic and educational class. It is concluded that the urban transformation resulting from the dynamism in the historical, physical and socioeconomically structure of the space in the research area is weighted with the accommodation and commercial place selections, there are influences of the culture asset structure, some part of the functions being in the place selection and the positive and negative reflections of the quantitative and qualitative characteristics of the focal points on the transformation which is followed on the area and also the land-plot unit price value directs the selections in part.*

Keywords: *Transformation; İstanbul old CBD; land use; regression analysis.*

1. INTRODUCTION

Istanbul having the population of 12 million (TÜİK, 2008) is the biggest city of Turkey as well as the most important socio-economic and cultural center of the country. As a result of multi-directional changes in country's economy and industry in 1950's, a fast rural immigration movement and multi-centered provincial structure as well as a reduction in the population of historical city center and outdating is observed in Istanbul which has become the center of industrialization. İstanbul historical city center is going through a provincial transformation with the developing tourism, trade function pressure and selection of location for housing. Objective of this study is; to identify factors affecting provincial transformation observed in the research area, interrelation of subject factors (field usage structure, cultural asset structure, distances to focus points and land-field unit m^2 prices), determination of positive and negative affect ratios using regression analysis (Figure 1).

Academic and occupational literature is full of provincial renovation/transformation definitions that race with each other. Reason for that are the objectives and scope of provincial transformation has differed under changing political, economic and social conditions in time and among the countries. Therefore, provincial transformation is a dynamic concept [1]. In the context of planning and architecture, "Provincial Transformation" is approached as intervention methods for improvement of existing urban area problems rather than planning and development of new urban areas. In that extent, provincial transformation can be defined as provincial intervention methods planned and implemented for improvement of urban areas that are going through economic, social, physical and environmental breakdown [2].

Just like in the other metropolitan areas around the world, suburbanization, continuous enlargement of the city due to rural immigration after 1950's [3,4,5], Bosporus Bridge and construction of linear roads as well as economic development after

Figure 1: Research area panoramic view of the general

1980's caused partial breakdown of historical city center [6].

Throughout the historical process, most of the medium and high income groups working and living downtown earlier moved to new business centers and residential districts [7] and the changes in their life styles may also affect their choice of housing [8]. In the meantime, old city center started to lose employment and population due to deforming provincial structure. Thus, housing and trade demand and income ratio decreased. Restoration projects supported individually or by government are being implemented in order to stimulate degenerated districts [9]. Main theme of these studies was; to reorganize urban relations according to natural structure and history of the city and to meet the needs by creating employment [10].

The first few studies in terms of provincial transformation examined the effects of reactivation process using different indicators. The common outcomes of these studies were that repair, restoration or reconstruction of worn out buildings increased house possession, changed physical structure and increased real asset prices [11,12,13]. Changes in physical structure as well as reclamation planning and gentrification process resulted in important social structure changes [14,15,16,17]. Zukin [18] defines gentrification as transformation of socially marginal and labor class areas of downtowns to housing of middle class and identifies gentrification as investment capital of private businesses in the business and trade districts of large city centers. Later on; it was observed that new retail sales sector played an important role in bourgeoisification of New York [19].

Sometimes, preserving and reclamation planning results in different effects in terms of social structure and location of a district. Groves and Niner [20] states that reclamation planning without side effects of price inflation and gentrification influence on improving life standards and keeping the market alive for district occupants. Furthermore, Listokin and others [21] claims that preserving has great impacts on housing and economic development. Structural activities such as reclamation planning and reactivation projects supports local economy by creating employment, local sales, tax incomes and a strengthened tax foundation. Additionally, identification of historical areas is now often used as a tool to stop breakdown, wearing out of or reactivate districts located in downtown. In a study conducted by Leichenko and others [22,23] and as verified by Clark [24], regulations in the historical areas increase real estate values.

In addition to all of the above, increasing use of preserving history, redevelopment of districts and reactivation of city centers for cultural heritage tourism plays an important role in provincial economic improvement and society development [25]. In an article published by Chang and others [26], a uniting approach is recommended in terms of "up to down" point of view emphasizing role of global elements and "down to up" point of view

focusing on local impacts. An examination conducted on Montreal and Singapour cities proves that similar macro scale processes lead both cities to recognize cultural heritage tourism as a provincial re-development strategy.

Actual development of the city occurred pursuant to rural immigration after 1950's and increase of İstanbul population rate from 5,5 % to 18,2 % of Turkey's population between 1950 and 2011. As a result of enormous provincial growth and globalization, provincial structure and socio-economic characteristics are continuously evolving. Just like in most metropolitan areas in other countries, old CBD also started deteriorating after 1980's. Various renovation projects were accelerating after late 1990's and the need to increase competitive superiority in the new global order and to create new world city has been the focus of provincial administrations [10].

This study identifies the relation between factors of land use, land unit price, cultural asset infrastructure and distance to focal locations for the provincial transformation observed at historical neighbourhood within the research area; and positive and negative impact ratios by regression analysis. Historical process of provincial transformation in Istanbul is identified in the second part of the article; regression analysis conducted in research is provided in the third section; and evaluations of conducted analysis as well as opinions for the future studies are provided in the last section.

2. PROVINCIAL TRANSFORMATION IN İSTANBUL CBD

As a result of the multi-directional changes occurring in country's economy and industry in 1950's, a fast rural immigration movement started in İstanbul which has become the center of industrialization. Fast population increase in the city negatively impacted historical life quality. Infrastructure and social facilities did not have a parallel development with such speed of growth, and housing production grew without plan and control, and shaped in disorganized pile form. The fast growth of the city, forming of new sub-centers, construction of bridges and highways on Bosphorus, development of some housing areas according to modern planning rules increased life quality difference in different districts of the city which led to great differences between the houses in various districts [6].

Process of industrial spread started in 1960's from city center throughout the highways to surrounding area and the great population increase in Istanbul created difficult problems such as housing, infrastructure and transportation, and there has been differentiating in housing area locations according to income groups. Low income groups preferred to be close to business areas whereas higher income groups preferred to be near cultural center, away from the industry, and reside in prestigious districts. In that period, population increase was directed to outer skirts of city, and the highest population increases observed to be occurring in those areas [27].

Rural immigration and fast urbanization, development of new settlement areas, movement of trade and higher income groups to new residential areas as well as the cultural changes have caused to a loss of interest to old city center Suriçi and particularly Beyoğlu district, even resulting in transformation of some districts into areas of breakdown. Beyoğlu, a reflection of western culture started meeting the cheap housing needs of rural population immigrating to Istanbul, and important changes in both social and location structure have been observed [28].

In the Historical Peninsula where functional and intensity differentiation occurred and housing population decreased in time during 1965 to 1970, no protective resolutions were made agains changes although the old texture diminished quickly. Decrease of population in Eminönü where majority of Historical Peninsula population is accommodated occurred due to spread of urban residents and business areas from center to surrounding area [27].

Spatial spread caused by automobiles in 1970's was also observed in Istanbul; achievement of some companies to international scales increased need for modern office buildings. Factors such as planning restrictions caused by lack of free spaces in historical city center, historical texture characteristics and small parceled structure, historic narrow streets unsuitable for heavy traffic load brought by wheeled vehicles, lack of car parking could not meet developing office needs. Old structures with low standard in old city center could not meet those requirements and thus, city center lost its attraction in the historical development process and an outward expansion from center has been inevitable [6].

In this period, as the residential areas around the center transform to workplaces, historical and cultural continuity, ecological and symbolic characteristics of this area has been ignored, and inconvenient functions loaded on structures with high cultural assets, accelerating wear out. There has been a high rate of abandoned structures in the area due to changes in structure and environmental standards [29].

Historical city center became unable to meet transportation, communication, location, space, etc. needs due to historical texture characteristics and structural wear out, and tendency to abandon has been observed. In addition to the structural characteristics, increase in accessibility around the city by highways, opportunity to provide cheap and

large lands around city, development of communication technologies also played a role in loss of old central business district (CBD) characteristics of historical city structure. Istanbul fully gained function of being a multi-centered metropolitan with the new central business areas and sub-centers [30].

A social and spatial gentrification process occurred in Beyoğlu, constituting part of the historical center pursuant to strengthening of Turkey's international relations and economical development as well as recent formation of a young, professional population of an important size in Istanbul due to the changes around the world and globalization process started in 1980's [7,31]. On the other hand, although there is a great potential of unused structure around historical city center in Eminonu which constitutes the other part of the historical center, no such development has been observed. Reasons for that are accumulation of business and entertainment center outside Historical Peninsula as well as use of residential areas in the close neighborhood of center at Suriçi as bypass for transition to the other areas of city still continues [27]. Some changes have been observed particularly in recent years in Historical Peninsula which has become an important center by trade and administration functions in early 20th century. One of the most important changes was planned removal of industry and small production shops as well as other functions disturbing the area located on Marmara coast line of Ordu and Divanyolu Streets to outer rampart by local administration. Residential use in Sultanahmet, the most touristic area of İstanbul, and the surrounding area is transformed to touristic use by the impacts of those changes as well as change of user by such transform is observed in the area [32].

In the recent years, Istanbul historical city center is going through a provincial transform by the developing tourism and pressure of trade function as well as choice of residential locations. Social and spatial renovation (gentrification) phenomenon is increasing in research area of Sultanahmet and surrounding neighbourhood (Figure 2). In the area, old and authentic works of art are observed to be transforming into accommodation and trade functions (Figure 3,4). In addition to the provincial transform and gentrification observed in the research area, there has been an increase in the non-facilitated buildings and wear out process (Figure 4, 5).

Figure 2: Views of gentrification examples in research area

Figure 3: Views of transformers housing to hotel examples

Figure 4: Views of transformers housing to trade examples

Figure 5: Views of empty building examples

Figure 6: Views of dilapidation examples

3. REGRESSION ANALYSIS

In the scope of study, Sultanahmet centered area is selected in Suriçi (Historical Peninsula of Istanbul), where there is intensive presence of cultural assets require protection, transforming under the pressure of tourism and trade but partially maintaining its authentic housing textures along with such transformation and where people with high education and socio-economic level are observed to be choosing as qualified residential location. Physical marks used as analysis area borders are Divanyolu Street and main pedestrian artery and tramcar road in the North, Marmara Sea and Kennedy Street in the South, Topkapı Palace and Sur-u Sultani in the east and Piyerloti Street in the west are general restrictive lines. The selected area administration covers complete Sultanahmet and Küçük Ayasofya Neighbourhood, the area of Cankuraran Neighbourhood outside Sur-u Sultani and Topkapı Palace and palace functions, however complete Cankurtaran Neighbourhood is evaluated completely as the functions subject to structural examination covers the complete area. 95% of Binbirdirek Neighbourhood is included in the study. 35% of Eminsinan Neighbourhood and 18% of Şehsuvarbey Neighbourhood is within the physical borders, they are evaluated within general land use in the previous section and included in general analysis in regression analysis studies, however they are excluded from detailed neighbourhood analysis due to lack of samples.

In addition to the area based analysis performed in study area, neighbourhood based analysis are also performed as socio-economical structures, physical features differ by location development characteristics of the neighbourhood and such differences impact function preferences. When the provincial transformation in the area is assessed only for physical usage differences other than socio-economic and demographic characteristics, provided that there are more than one variable, each variable is analyzed as dependent variable. In the research area, years 2005-2010-2012 are considered as basis; relations among residential, trade features to include retail business and touristic sales-dining-entertainment locations, selection of location for accommodation facility purposes and land unit m^2 prices dependent variables as well as other independent variables (land utilization structure, cultural asset characteristics, distances to focus locations and land-field unit m^2 prices) are examined individually.

Performed analysis model specifications are evaluated using Durbin-Watson statistics, t, F and Anova tests, and the analysis considered to be meaningful for all functions and areas except for indefinable transformation in selection of business locations in Sultanahmet.

Year 2005 land usage structure developed based on the evaluations conducted in research area is provided in figure 7, year 2010 land usage structure is provided in figure 8 and year 2012 land usage structure is provided in figure 9. Cultural assets having great importance within the scope of research are provided in Figure 10.

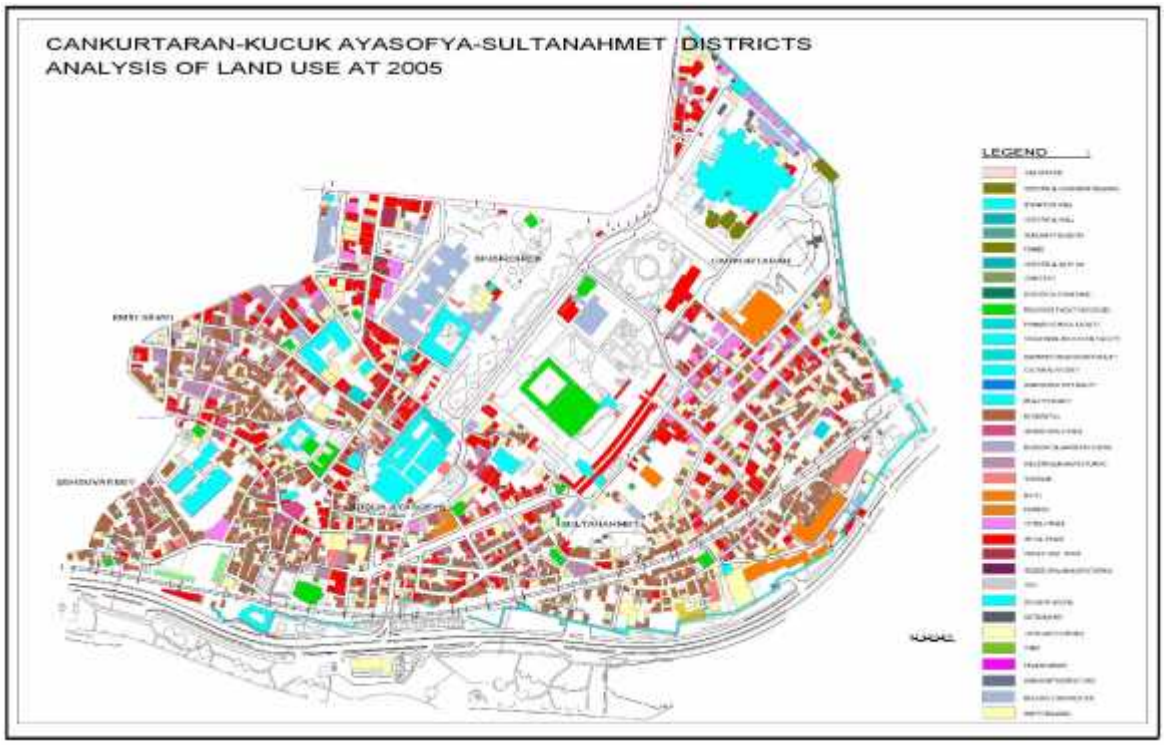

Figure 7: Land use of research area, 2005

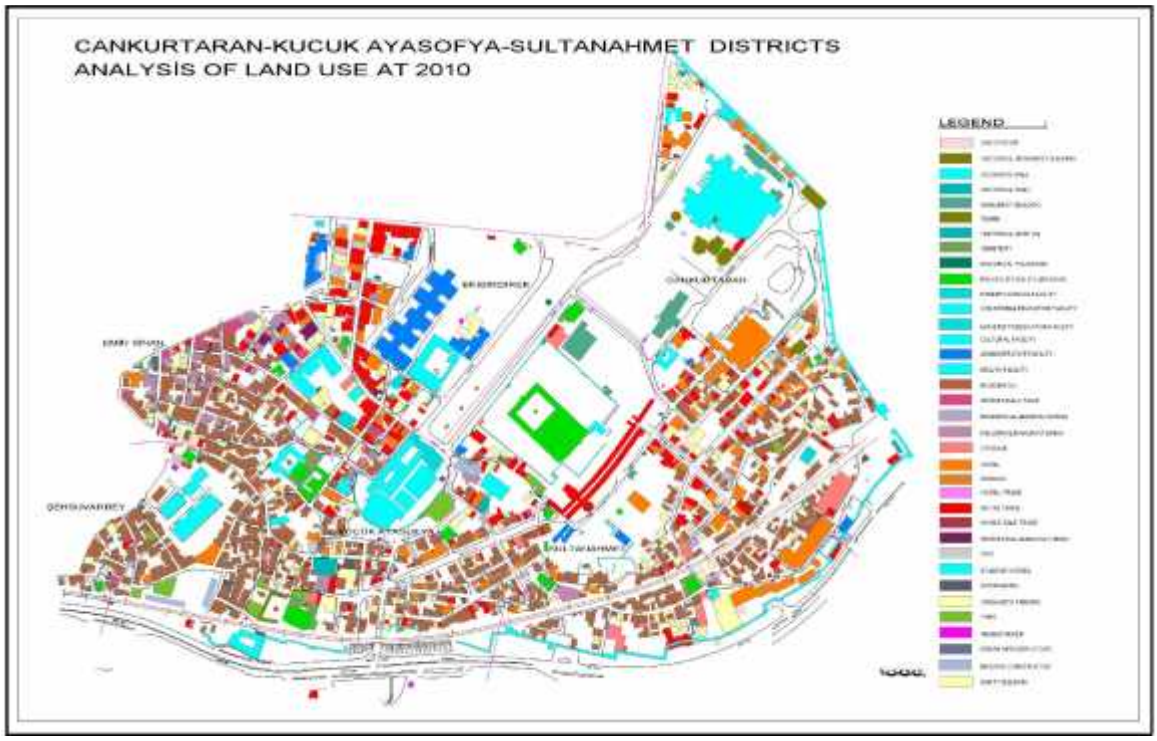

Figure 8: Land use of research area, 2010

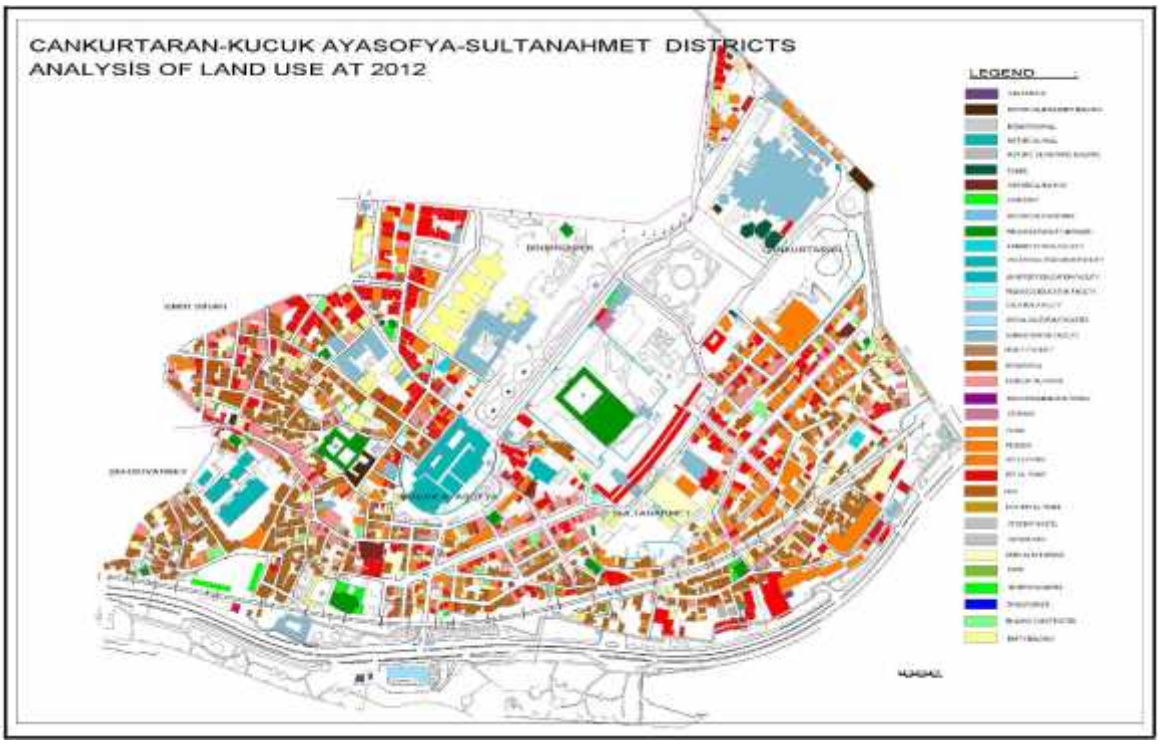

Figure 9: Land use of research area, 2012

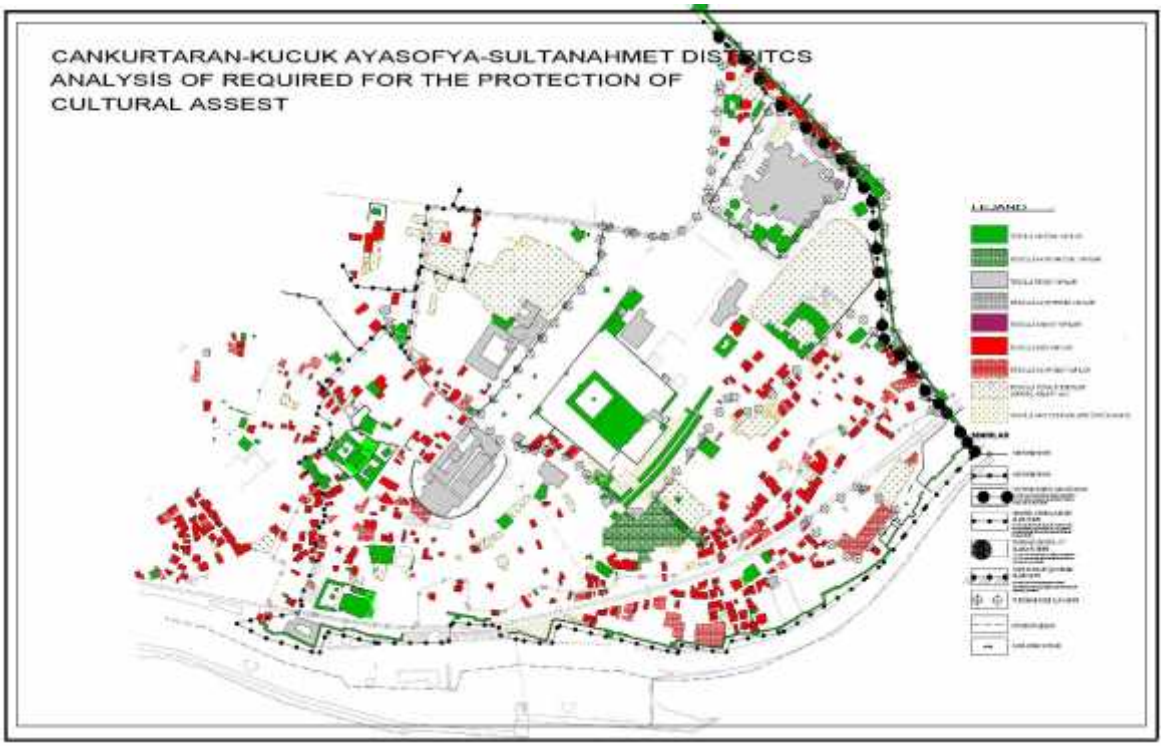

Figure 10: Inventory of cultural property in research area

3.1 Regression analysis for residential location selection

The most effective positive impact variable in the overall area analysis for provincial land usage transformation, residential location selection dependent variables are; the increase in distance of streets to Gülhane Square, civil architecture samples on the streets and presence of buildings under construction, and variables with negative impact are the increase in distance of streets to Hagias Sophia, presence of monumental official structures, hotels and retail business (Table 1). In the detailed neighbourhood analysis;

- Positive impact variable in Binbirdirek Neighbourhood is presence of residences + trade structure on the streets, negative impact variable is land-field unit price value on the streets.
- The most effective positive impact variables in Cankurtaran Neighbourhood are the presence of civil architecture presence on the streets and increase in distance of streets to Topkapı Square, and the negative impact variables are increase in distance of streets to Cankurtaran Square and presence of hotels on the streets.
- Positive impact variable in Küçük Ayasofya Neighbourhood is presence of civil architecture samples and buildings under construction and there is no negative impact variable.
- The most effective positive impact variable in Sultanahmet Neighbourhood is the presence of civil architecture on the streets and there is no negative impact variable (Table 1).

Table 2: Regression coefficients in accommodation (hotel) location selection

	RESEARCH AREA[1]		BİNBİRDİREK NEIGHBORHOOD[2]		CANKURTARAN NEIGHBORHOOD[3]		KÜÇÜK AYASOFYA NEIGHBORHOOD[4]		SULTANAHMET NEIGHBORHOOD[5]	
	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean(sig)
Hotel	-0,147	0,006			-0,339	0,004				
Trade	-0,108	0,035								
TL/m^2			-0,276	0,029						
House+ trade			0,424	0,005						
Construction	0,191	0,000					0,295	0,003		
Cankurtaran Sq..					-0,441	0,000				
Topkapı P.					0,397	0,007				
Ayasofya Sq.	-0,805	0,015								
Gülhane	0,709	0,009								
Civil Architecture	0,431	0,000			0,410	0,000	0,436	0,000	0,759	0,000
Monuments										
Official Monuments	-0,154	0,039								
Lost Civil Architecture									0,178	0,036

([1] Research Area R= 0,667 R^2= 0,445 Adj R=0,413 sig=0,000 F=13,929 Durbin Watson= 2,152)
([2] Binbirdirek R= 0,615 R^2= 0,378 Adj R=0,320 sig=0,000 F=6,528 Durbin Watson= 1,514)
([3] Cankurtaran R= 0,774 R^2= 0,600 Adj R=0,549 sig=0,000 F=11,824 Durbin Watson= 1,954)

([4] Kücük Ayasofya R= 0,592 R^2= 0,351 Adj R=0,317 sig=0,000 F=10,450 Durbin Watson= 2,409)
([5] Sultanahmet R= 0,825 R^2= 0,681 Adj R=0,638 sig=0,000 F=15,878 Durbin Watson= 1,728

3.2 Regression analysis for accommodation (hotel) location selection

In the dependent variable for accommodation location selection within the research area, the most effective positive impact variables are presence of civil architecture samples on the streets, land-field unit price value on the streets and presence of structures under construction, and there is no negative impact variable (Table 2). In the detailed neighbourhood analysis;

- The most effective positive impact variable in Binbirdirek Neighbourhood is presence of outhouses and non-utilized structures, and there is no negative impact variable.
- The most effective positive impact variables in Cankurtaran Neighbourhood are the lost civil architecture samples on the streets, presence of monumental works and land-field unit price on the streets, and there is no negative impact variable.
- The most effective positive impact variables in Küçük Ayasofya Neighbourhood are the structures under construction on the streets, retail sale structure and land-field unit price, and there is no negative impact variable.
- The positive impact variable in Sultanahmet Neighbourhood is the land-field unit price and the negative impact variable is the distance value of streets to Kennedy Street-Coast Road connection (Table 2).

Table 2: Regression coefficients in accommodation (hotel) location selection

	RESEARCH AREA[1]		BİNBİRDİREK NEIGHBORHOOD[2]		CANKURTARAN NEIGHBORHOOD[3]		KÜÇÜK AYASOFYA NEIGHBORHOOD[4]		SULTANAHMET NEIGHBORHOOD[5]	
	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)
Trade							0,222	0,008		
TL/m^2	0,212	0,001			0,188	0,035	0,174	0,018	0,372	0,010
Outbuilding			0,419	0,009						
İnşaat	0,151	0,008					0,524	0,000		
Empty			0,385	0,002						
Coastal road connection									-0,436	0,047
Monuments					0,471	0,000				
Lost Civil Architecture	0,266	0,000			0,532	0,000				

([1] Research Area R= 0,469 R^2= 0,220 Adj R=0,190 sig=0,000 F=7,268 Durbin Watson= 1,794)
([2] Binbirdirek R= 0,606 R^2= 0,367 Adj R=0,324 sig=0,000 F=8,507 Durbin Watson= 1,127)
([3] Cankurtaran R= 0,716 R^2= 0,512 Adj R=0,486 sig=0,000 F=19,935 Durbin Watson= 1,867)
([4] Küçük Ayasofya R= 0,709 R^2= 0,502 Adj R=0,467 sig=0,000 F=14,383 Durbin Watson= 1,898)
([5] Sultanahmet R= 0,669 R^2= 0,447 Adj R=0,385 sig=0,000 F=7,144 Durbin Watson= 1,564

3.3 Regression analysis for retail trade location selection

In the depedent variable for retail business location selection within the research area, the most effective positive impact variables are presence of civil architecture samples and land-field unit price, and negative impact variable is the distance value of streets to At Meydanı (Horse Square) (Table 3). In the detailed neighbourhood analysis, findings are;

- The most effective positive impact variables in Binbirdirek neighbourhood are the presence of outhouses on the streets, lost civil architecture sample presence and land-field unit price, and there is no negative impact variable.
- Positive impact variables in Cankurtaran Neighbourhood are residential + business and civil architecture sample structures, and there is no negative impact variable.
- The most effective positive impact variable in Küçük Ayasofya Neighbourhood is presence of non-utilized building, hotel, pension and resident + trade presence, there is no negative impact variable.
- Effective variables for Sultanahmet Neighbourhood are not identified, and retail business transformation cannot be explained by land usage structure and land-field unit price value, cultural asset structure and distances to certain focus points (Table 3).

Table 3: Regression coefficients in reatil trade location selection

	RESEARCH AREA[1]		BİNBİRDİREK NEIGHBORHOOD[2]		CANKURTARAN NEIGHBORHOOD[3]		KÜÇÜK AYASOFYA NEIGHBORHOOD[4]		SULTANAHMET NEIGHBORHOOD[5]	
	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)
Hotel							0,285	0	meaningless	meaningless
TL/m^2	0,196	0,004	0,283	0,010					meaningless	meaningless
House+ trade					0,275	0,013	0,155	0,048	meaningless	meaningless
Pension							0,224	0,003	meaningless	meaningless
Outbuilding			0,531	0,000					meaningless	meaningless
Empty							0,342	0,000	meaningless	meaningless
At Meydanı Sq.	-0,419	0,055							meaningless	meaningless
Civil Architecture	0,206	0,002			0,235	0,032			meaningless	meaningless
Lost Civil Architecture			0,383	0,043					meaningless	meaningless

([1] Research Area R= 0,466 R^2= 0,217 Adj R=0,184 sig=0,000 F=6,510 Durbin Watson= 1,740)
([2] Binbirdirek R= 0,756 R^2= 0,572 Adj R=0,521 sig=0,000 F=11,225 Durbin Watson= 2,048)
([3] Cankurtaran R= 0,410 R^2= 0,168 Adj R=0,147 sig=0,000 F=7,887 Durbin Watson= 1,459)
([4] Küçük Ayasofya R= 0,687 R^2= 0,471 Adj R=0,440 sig=0,000 F=15,008 Durbin Watson= 1,987)
([5] Sultanahmet R= 0,381 R^2= 0,145 Adj R=0,083 sig=0,067 F=2,333 Durbin Watson= 2,287)

3.4 Regression analysis for land-field price

In the dependent variable for land-field unit price value within the research area, our findings are; the most effective positive impact variables are distance value of streets to Kadırga Square, At Meydanı (Horse Square) and presence of monumental works, structures under construction, hotel and retail business, and the negative impact variable is the increase in distance value of streets to Sultanahmet Tramcar Station and residential structure on the streets (Table 4). In the detailed neighbourhood analysis, findings are;

- The most effective positive impact variable in Binbirdirek Neighbourhood is the monumental works and retail business structure on the streets, and the most effective negative impact variables are the large bulk monumental official structure and residential structure.
- The most effective positive impact variable in Cankurtaran Neighbourhood is the presence of monumental works and structures under construction on the streets, negative impact variables are the increase in distance of streets to Kennedy Street-Coast Road connection and housings on the streets.
- The most effective positive impact variable in Küçük Ayasofya Neighbourhood is presence of hotels; negative impact variables are the increase in distance of streets to Kennedy Street-Coast Road connection and housings on the streets.
- The most effective positive impact variable in Sultanahmet Neighbourhood is presence of hotels and monumental works on the streets, and there is no negative impact variable (Table 4).

Table 4: Land-field price (TL/m^2) regression coefficients

	RESEARCH AREA[1]		BİNBİRDİREK NEIGHBORHOOD[2]		CANKURTARAN NEIGHBORHOOD[3]		KÜÇÜK AYASOFYA NEIGHBORHOOD[4]		SULTANAHMET NEIGHBORHOOD[5]	
	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)	Beta	Mean (sig)
House	-0,135	0,014	-0,321	0,010	-0,209	0,030				
Hotel	0,145	0,006					0,242	0,025	0,496	0,000
Trade	0,121	0,022	0,307	0,010						
Construction	0,196	0,000			0,339	0,000				
At Meydanı Sq.	0,435	0,020								
Sultanahmet Railway	-0,998	0,000								
Kadırga Sq..	0,809	0,000								
Coastal road connection					-0,398	0,000	-0,345	0,005		
Monuments	0,328	0,000	5,319	0,001	0,361	0,001			0,404	0,008
Official monuments			-4,967	0,002						

([1] Research Area R= 0,607 R^2= 0,369 Adj R=0,342 sig=0,000 F=13,723 Durbin Watson= 1,456)
([2] Binbirdirek R= 0,688 R^2= 0,473 Adj R=0,424 sig=0,000 F=9,660 Durbin Watson= 1,054)
([3] Cankurtaran R= 0,656 R^2= 0,430 Adj R=0,392 sig=0,000 F=11,333 Durbin Watson= 1,599)
([4] Küçük Ayasofya R= 0,464 R^2= 0,216 Adj R=0,189 sig=0,000 F=8,115 Durbin Watson= 1,551)
([5] Sultanahmet R= 0,731 R^2= 0,534 Adj R=0,471 sig=0,000 F=8,517 Durbin Watson= 1,126)

3.5 Regression analysis assesment

Our findings are; provincial transformation occurring due to location's historic, physical and socio-economic dynamism of the research area are mostly residential and business location selection based, there are positive and negative reflection impacts of qualitative and quantitative features of certain focus points as well as presence of cultural assets requiring protection and housings in the area, and land-field unit price value also manipulate selections to a certain extent.

In the examination of regression analysis conducted according to the full method where housing location selection dependent variable is selected, it is identified that; presence of civil architecture work is the most effective positive impact variable in overall area and in detail for all districts except for Binbirdirek Neighbourhood, lost civil architecture sample is the effective independent variable only for Sultanahmet Neighbourhood. Increase in land-field unit price value does not have negative impact for residential location selection other than Binbirdirek Neighbourhood. Presence of hotel, increase in trade functions does not have negative impact corresponding to the studies performed on the subject.

Another finding is that use of retail trade has low negative impact on residential location selection in overall area whereas its not effective in detailed district analysis, spread of trade business on ground floors is not effective in overall area whereas it has positive impact in Binbirdirek Neighbourhood, and increase in construction functions has impact in overall area and Küçük Ayasofya Neighbourhood having a low physical quality. Variables gaining importance in the increase of distance to certain focus points are not important on district basis whereas it becomes significant in positive and negative impacts for changing focus preferences.

In the examination of regression analysis conducted according to the full method where accommodation location selection dependent variable is selected, it is identified that; presence of lost civil architecture is the most effective independent variable in overall area, and in cankurtaran District along with the presence of monumental works. It is identified that land-field unit price value increase is effective for accommodation location selection in overall area as well as Cankurtaran, Küçük Ayasofya and Sultanahmet Neighbourhoods where accommodation transformation occurs rapidly.

Increase in construction functions has low impact in overall area whereas it has a high impact in Küçük Ayasofya Neighbourhood having a low physical quality parallel with residential location selection, outhouse and non-utilized structure presence in Binbirdirek Neighbourhood where physical development is limited is another finding expected to be significant. Increase in distances to certain focus points does not have significance in the research area whereas it is remarkable that distance to coast road connection in terms of accessibility becomes significant in important negative effects.

In the examination of regression analysis conducted according to the full method where retail trade location selection dependent variable is selected, it is identified that; presence of civil architecture work is positive impact independent variable in overall area and only in Cankurtaran Neighbourhood in detail. Land-field unit price value increase is identified to be important for trade location selection in overall area and only in Binbirdirek Neighbourhood in detail together with the outhouses gaining great importance pursuant to restriction in physical development. Increase in distance to At Meydanı (Horse Square) gained importance as focus point in the research area and significant in trade and pedestrian circulation does not have importance in district detail and is remarkable.

In the examination of regression analysis conducted according to the full method where land-field unit price value dependent variable is selected, it is identified that; increase in number of houses has negative impact corresponding to the studies on the matter, and presence of hotel and trade has positive impact. Remarkably, only presence of monumental works in cultural asset structure has significant importance as they have marketable trade elements. Variables gaining importance in positive and negative impacts by increase in distance to certain focus points in research area are not important on district basis; however it is remarkable that distance to coast road in terms of accessibility becomes significant on district basis in negative impact.

Following summarized explanations are made in respect to factors effective in provincial transformation observed in the area in this research;

- In the conducted analysis, area's World Heritage Area characteristics, presence of cultural assets, architectural and traditional street form that constitutes the diversity of area and possibility of detached structures as well as most of them having gardens usable for trade feature, sheltering and accommodation, renovated old artwork structures having higher investment value and preference of authentic work structures in boutique commercial and accommodation units can be effective in user and guest selection as well as allow transformation into housing in the future are effective under

present circumstances. Civil architecture sample works in the area become significant as gentrification example in residential areas; accommodation use for retail boutique trading and dining facility functions on trade arteries, and restoration as hotel in the developing areas. Administrative permits and other obstructions in existing old artwork applications and projects as well as rather less and easier monitoring of timing process in old artwork applications are effective in addition to the aforementioned issues in the significance of lost architectural example presence.

- Monumental cultural assets that play important role in the area being a World Heritage Area by the increasing and accomplished recent restoration studies became effective on touristic attraction and visits, and it also has impact on familiarity with the area as well as increase in tradable elements and on land-field price in certain districts. However, in addition to the pedestrian and traffic intensity arising from the presence of large scale monumental official structures, there is also a potential of residential populating moving out of the area pursuant to expectations for use of subject structures for transformation and tourism purposes.
- There are negative effects such as noise arising from retail trade functions serving mostly for tourism purposes of dining and souvenir business bringing the potential of alienating and movement of residing population out of area as well as being an often observed factor of pressure for spreading to residential areas, and there are also positive effects such as development in accommodation function and dining-drinking facilities to feed the accommodation, touristic marketing units and economical returns of those facilities. On the contrary to impact on housing + retail trade functions, pure trade fields and in consideration to non-utilized structure stocks not being offered for residential use, structures maintaining housing functions on the normal floors has positive impact on house selection as well as retail trade development.
- Outhouse structures; have great importance in the area's commercial functions of dining-drinking and tourism pursuant to structuring being accomplished both horizontally in parcel use and vertically, restriction of additional structuring, magnitude of area use on ground floors in the research area.
- Presence of houses has negative impact on accommodation and land-field unit price.
- Presence of accommodation structures impact moving out for residential location selection in general as well as trade functions and investments with its attraction potential and economical return of hotel investments, and has positive impact in some districts in terms of land-field unit price and development of retail trade.
- As for presence of structures under construction, structures renovated to eliminate wear out by construction works increase physical and visual quality as well as economical value.
- Presence of non-utilized structures has impact on retail trade location selection in the neighbor districts where trade development and land-field unit prices are high. Furthermore, it has an impact increasing the transformation in the districts where tourism and retail business trade transformation is observed.
- Suriçi being an important focus point in touristic use and in terms of familiarity have impact on house selection regardless of the pedestrian and vehicle traffic created by Hagias Sophia Square.
- Although distance to Gülhane Square has been significant with the increasing use of Suriçi for cultural events recently, moving away from the square due to intense pedestrian circulation and vehicle traffic has impact on increase in housing. Distance to At Meydanı (Horse Square) has relation with the intense touristic visits and pedestrian accessibility in the area. Attraction of the crowds with high shopping potential by providing shopping preferences on the main walking axis and intensity of dining-drinking-entertainment business as well as increasing use of Suriçi for cultural events recently have great contribution to selection of trade location whereas having contrary impact on land-field unit price.
- Although Kadırga Square is an important focus point as transportation distribution from Aksaray and Yenikapı areas for vehicle and pedestrian accessibility, intense traffic and the disconnection caused by existing educational structures make the area effective.
- The food-beverage-entertainment purposed workplaces which carry out activities surrounding Cankurtaran Square, having influence with the vehicle traffic weight of the spatial dimension of the square and in spite of its lack of pedestrian solutions, suburban train usage in the mass transportation in the residential purposed usages and with the recreational areas transportation at the coastline.
- Shopping preference of Sultanahmet Tramcar Station users on the walking axis and pedestrian accessibility as well as public transportation have positive contribution.
- Topkapı Square has negative impact on accommodation selection in the adjacent districts due to intense pedestrian and vehicle traffic although it is an important focus point for use of Suriçi in touristic utilization.
- Coast Road-Kennedy Street has impact on accommodation selection and land-field unit price as it is an important focus point in transfer and transportation of touristic users.

- Land-field unit value impacts investors' preferences with the concern of being economically profitable. Investor's commercial concerns and high profit expectations as well as parallel behavior of residential users unable to benefit from economical returns of the area are economically acceptable behaviors for the positive impact of land-field price increase in spatial selection for trade and accommodation.

4. CONCLUSIONS

Istanbul historical city center is going through provincial transformation pursuant to developing tourism and trade function pressures as well as residential location selection. Provincial transformation briefly is described as; an action plan integrating with the city and urban people, prepared to increase life quality based on strategic development plan and within the provincial development vision for the non-functional, old and worn provincial pieces unable to fulfill physical, social and economical development dynamics and new requirements. In the research subject, "identification of factors impacting provincial transformation in historical city centers" matter which was found to be missing in literature was analyzed together with different variable groups, and implemented for Sultanahmet-Cankurtaran Neighbourhood and nearby areas which have been significant in Historical Peninsula having great importance for Istanbul metropolitan area. This study aims to guide users and investors in the area as well as central and local administrations by presenting factors impacting provincial transformation in the research area and the degree of such impact using regression analysis.

It has also been possible to statistically describe provincial transformation by the performed analysis within the description of provincial transformation in the area identified as examination area. Conducted analysis support the idea that land-field unit price change, socio-economic, historical and physical structure as well as user and visitor preferences, positive and negative impacts of the existing functions on one another in the area are effective on provincial transformation observed in the area.

Furthermore, results support that the places with different characteristics in the area as well as changes in the monitored land utility structure transformation require individual assessment of multiple dependent variables both in overall area and in detail and have great importance in presenting provincial transformation observed in the research area.

The results which are obtained throughout the research shall provide data for the purpose of enabling urban transformation in Surici and in the research area by the central and local administrations in general and in the testing of the decisions in the frame of the strategic analysis of transformation and forming base for the renovation projects which are developed in the coverage of the laws newly enacted recently and its application and development of new strategies.

It will also be able to bring a new perspective to the actors playing role in zone planning, research and project studies pursuant to analysis of applications in archeological site in coordination with area management. Particularly the data, analysis and results obtained in area experiencing wear out, gentrification and provincial transformation together with its own internal dynamism at Suriçi under accommodation and trade pressures other than the renovation projects conducted recently shall be able to establish data for other scientific studies in respect to transformations observed in historical city centers. With the results obtained, the clues which belong to the spatial problems from which the functions in the place selection are negatively influenced in the research area shall make contribution to the socio-economical development of the traders and users, living in the area as much as the environmental quality increase by means of finding solutions for the problems. The results which are obtained in the research will be effective in defining the development which is followed on the research area in narrower framework and evaluation of the statistical analyses and shedding light to the studies in the projections to be made in the continuance of the data and to be beneficial in the expectations in unit price as well as the functional change in addition to the renewal and restoration of the structures for the landowners, in the immovable property evaluation, marketing and construction sectors, in the investment decisions in the tourism and commerce sectors at first.

Furthermore, it will also provide data for public awareness to be created by interest groups and civil public organizations on the provincial transformation observed in the area, marketing, policy development. In the next step of the study and in the light of obtained data, it would be useful to evaluate optimum planning decisions, minimum land price values and establish standards to be used in provincial transformation and renovation studies by central and local administrations. Repetition of similar analysis both in other districts of Suriçi requiring protection having different socio-economical and physical characteristics where a structural and functional transformation process is experienced, conduct spatial, structural and location comparisons will enable study achieve general and national level results. Forming a model for assessment of multiple factors effective in provincial transformation will provide an aspect to guide new researches in planning, statistics and real estate issues of a brand new study in literature.

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