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# **INDEKS BİLGİLERİ/ INDEXING INFORMATION**



























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İşletme Bilimi Dergisi



## Değerli Bilim İnsanları,

Sizlerin özverili çalışmaları ve desteği ile İşletme Bilimi Dergisi'nin 2019 yılı birinci sayısını (Cilt 7, Sayı 1) çıkarmış bulunmaktayız. Bu sayımızda farklı disiplinlerden araştırmacıların yazdığı 12 makaleye yer veriyoruz. Makalelerden dördü 22-23 Kasım 2018 tarihlerinde Sakarya'da düzenlenmiş olan 2.Ulaştırma ve Lojistik Ulusal Kongresi'nde sunulan bildirinin geliştirilmiş halinden oluşmaktadır.

Bu sayıda sunulan çalışmalardan ilki Ali TAŞ, Oğuzhan ÖZTÜRK ve K. Şeyma ARSLAN tarafından hazırlanan "Stratejik Yönetim Çalışmalarının Örgüt İçi Güç Örüntüsünü Şekillendirmedeki Rolü: Kamu Kurumları Üzerinde Çoklu Örnek Olay İncelemesi" başlıklı çalışmadır. Bu çalışmada kamu kurumlarındaki stratejik yönetim çalışmalarının örgüt içindeki güç örüntüsünü hangi güç alanları ve kaynakları üzerinden şekillendirdiği sorusuna cevap aranmaktadır.

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İkinci çalışma, Vugar GAHRAMANOV ve Oğuz TÜRKAY tarafından hazırlanan ve hostel işletmeciliğinde rekabetçiliğin analizi amaçlayan, Hostel İşletmeciliğinde Rekabet Belirleyicileri: İşletmeci ve Turist Görüşlerinin Analizi başlıklı çalışmadır.

Üçüncü çalışma Büşra GEZİKOL, Sinan ESEN ve Hakan TUNAHAN tarafından hazırlanan ve konut fiyatlarında, konutun çevresindeki günlük yaşam aktivitelerine yürüyerek erişilebilirliğin etkili olup olmadığını inceleyen ve 22-23 Kasım 2018 tarihlerinde Sakarya'da düzenlenmiş olan 2.Ulaştırma ve Lojistik Ulusal Kongresi'nde sunulan bildiriden geliştirilen An Analysis on the Relationship between Housing Values and House-specific Factors and Its Neighbouring Amenities in Turkey başlıklı çalışmadan oluşmaktadır.

Dördüncü çalışmamız, Hakan ÇELİK ve Kamil TAŞKIN tarafından hazırlanan SMED Uygulamasının Ayar Süresine ve Birim Maliyete Etkisi: Kabuk Soyma Parlak Çelik Üretim Hattı Uygulaması başlıklı çalışma olup;



çalışmada SMED yönteminin ayar sürelerine ve birim zaman maliyetine etkisi araştırılmaktadır.

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Ayhan BAYRAM, Ece ZEYBEK YILMAZ, Çağlar SÖZEN ve Nükhet BAYER tarafından hazırlanan Nomofobi'nin (Akıllı Telefon Yoksunluğu) İçsel Motivasyona Etkisi: Giresun Üniversitesi Öğrencileri Örneği başlıklı beşinci çalışmada nomofobinin içsel motivasyona etkisi olup olmadığı tartışılmaktadır.

Özlem DOĞAN ve Fırat ALTINKAYNAK'ın yazarlığını yaptığı Muhasebe ve Finans Alanında Yazılmış Lisansüstü Tezlere Yönelik Bir İçerik Analizi başlıklı altıncı çalışmada muhasebe ve finansman alanında hazırlanmış lisansüstü tezlere yönelik kategorik bilgileri ortaya koyarak bu alanda çalışma yapacaklar için bir çalışma yapılan konular hakkında genel bir görünümün ortaya konulması amaçlanmaktadır.

Sedat BOSTAN, Gökhan AĞAÇ tarafından hazırlanan Kamu Hastaneleri Birliği Yapılanmasının Sağlık Hizmeti Sunum Süreçlerine Etkisinin Yönetici ve Çalışan Açısından Değerlendirilmesi başlıklı çalışmada 2017 yılında sonlandırılmasına rağmen, yönetici ve çalışanların kamu hastane birlikleri için nasıl bir bakış açısına sahip oldukları tartışılmaktadır.

Derleme şeklinde hazırlanan çalışmalardan Samina BEGUM ve Ulaş ÇAKAR'ın Employee Voice Scale: Is There a Need of Reconsideration of Dimensions? Başlıklı çalışması çalışan sesine ilişkin yazını eleştirel bir yaklaşımla incelenerek alandaki uygulamaların çalışan odağından örgüt odağına yöneldiği göstermeyi; Muhammad Aiman AWALLUDDİN tarafından hazırlanan Human Capital Management in Malaysia: Issues and Strategic Measures başlıklı çalışma, Malezya'da insan sermayesi konularında iç görü kazandırmayı ve sorunları gidermek için alınmış stratejik önlemleri incelemeyi hedeflemektedir.

Transit ticaret ve transit taşımacılık faaliyetlerinin veri uygulamaları, döviz kurlarının değerleme işlemleri ve katma değer vergi istisnası Vİİ



açılarından inceleyen ve farklılıklarını ortaya koyan Transit Ticaret ve Transit Taşımacılık Faaliyetlerinin Muhasebeleştirilmesi Ve Katma Değer Vergisi Açısından Değerlendirilmesi başlıklı üçüncü literatür incelemesi Gökhan BARAL ve Yaser GÜRSOY tarafından hazırlanmıştır. Gülşen T. AYDIN ve Zübeyde ÖZTÜRK'ün yazdığı Akıllı Kent Lojistiğinin Mekansal İlişkilendirilmesi başlıklı çalışmada Sürdürülebilir kentsel gelişmeyi teşvik etmek için kentsel alanlardaki yük, filo ve bilgi hareketinin akıllandırılmasının yararları, arazi yer seçimine ve kullanımına etkileri, mekansal ilişkilenmesi ile kente ve kentsel yük mobilitesine getirdiği kolaylıkları açıklanmaktadır. Avrupa Birliğinin 181 / 2011 Sayılı Tüzüğüne Göre Otobüsle Seyahat Eden Yolcuların Hakları başlıklı son çalışmada Ramazan DURGUT tarafından AB'ye uyum çerçevesinde olası Türk Yolcu Taşıma Kanunu ve bu kanuna ilişkin çıkarılacak Yönetmeliklerde AB'nin 181/2011 sayılı Tüzüğünün emsal alınmasının Türkiye'ye faydaları tartışılmaktadır.

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Görüldüğü gibi, dergimizin bu sayısı da işletmeciliğin farklı disiplinlerinde değerli bilim insanlarının kıymetli çalışmalarıyla oldukça zengin bir şekilde hazırlanmıştır. Dergi politikası olarak bundan sonraki sayılarımızda da işletme bilimine dayalı farklı disiplinlerden gelen çalışmaları yayınlamaya özen göstereceğiz. Bu sayımızda göndermiş oldukları makaleler ile dergimize katkı sağlayan tüm yazarlarımıza, dergimize gönderilen makalelerin değerlendirilmesi için kıymetli vakitlerini ayıran saygıdeğer hakemlerimize ve makalelerin dergide yayınlanmaya hazır hale gelmesi için yoğun bir gayret gösteren editör kurulumuz ve dergi sekretaryamıza teşekkürü borç bilirim. Dergimizin okurlarımız ve bilim insanlarına faydalı olması dileklerimle sonraki sayılarımızda işletmeciliğin güncel çalışmalarını bilim dünyasının hizmetine sunmak için siz değerli bilim insanları ve araştırmacıların katkılarını bekliyoruz.

Doç. Dr. Mahmut AKBOLAT Editör



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# AN ANALYSIS ON THE RELATIONSHIP BETWEEN HOUSING VALUES AND HOUSE-SPECIFIC FACTORS AND ITS NEIGHBOURING AMENITIES IN TURKEY\*

An Analysis On The Relationship **Between Housing Values** 

And House-**Specific Factors** And Its

Neighbouring **Amenities In** 

**Turkey** 

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#### **ABSTRACT**

Aim: This study mainly aims to examine whether the walkability to the daily living activities around the residence is effective on the house prices. For this purpose, the effect of other factors specific to housing on the price has also been tried to be determined.

Methods: The relationship between selling prices of 2109 houses in 29 district of Istanbul, which are published on the website of a well-known company that provides real estate services globally, with the Walkability Score (walkscore), the age of the building, the square meter of the apartment, the floor and the income of the district is analyzed by using Least Squares Method.

**Finding:** The results show that walkability has a significant effect on housing prices. Significant effects were also observed for other factors that are effective in house prices.

Results: It has been found out that there is a significant effect of walking accessibility to daily living activities around the residence on housing prices. In addition, the analysis has shown that the effect of other factors such as the age of the building, the square meter of the apartment, the floor and the income of the district affect the housing prices at a different level in the same model.

Keywords: Construction Industry, Housing Prices, Walkscore

\* " Bu çalışma 22-23 Kasım 2018 tarihlerinde Sakarya, Türkiye'de düzenlenmiş olan 2. Ulaştırma ve Lojistik Ulusal Kongresi'nde sunulan bildirinin geliştirilmiş halidir".

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An Analysis On The Relationship Between Housing Values And House-Specific Factors And Its Neighbouring Amenities In Turkey

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# TÜRKİYE'DE KONUT DEĞERİ İLE KONUT VE YAKIN ÇEVRESİNE ÖZGÜ FAKTÖRLERİN İLİŞKİSİ ÜZERİNE BİR ANALİZ

#### ÖZ

Amaç: Bu çalışma, temel olarak çoğunlukla konut fiyatlarında, konutun çevresindeki günlük yaşam aktivitelerine yürüyerek erişilebilirliğin etkili olup olmadığını incelemeyi amaçlamaktadır. Bu amaç doğrultusunda konuta özgü diğer faktörlerin fiyat üzerindeki etkisi de tespit edilmeye çalışılmıştır.

Yöntem: Global olarak gayrimenkul hizmeti veren tanınmış bir firmanın web sitesinde yer alan İstanbul'un 29 ilçesinin 2109 satılık ev ilanındaki konut fiyatları ile Yürünebilirlik Skoru (Walkscore), binanın yaşı, dairenin metrekaresi, bulunduğu kat ve ilçenin geliri arasındaki ilişkiye yönelik En Küçük Kareler yöntemi ile analiz yapılmıştır.

**Bulgular:** Sonuçlar, konut fiyatları üzerinde yürüyüşe elverişliliğin anlamlı bir etkisi olduğunu göstermektedir. Ev fiyatlarında etkili olan diğer faktörlere yönelik de anlamlı etkiler tespit edilmiştir.

**Sonuç:** Yapılan analizler sonucunda, konut çevresinde günlük yaşam aktivitelerine yürüme erişilebilirliğinin konut fiyatları üzerinde önemli bir etkisi olduğu tespit edilmiştir. Ek olarak, yapılan analizde, bina yaşı, dairenin metrekaresi, kat ve ilçe geliri gibi diğer faktörlerin etkisinin, aynı modelde konut fiyatlarını farklı düzeylerde etkilediği gösterilmiştir.

Anahtar Kelimeler: İnşaat Sektörü, Konut Fiyatları, Walkscore

#### I. INTRODUCTION

In the twentieth century, societies have been transformed from a predominately agricultural society to an industrial and knowledge-based economy centred in metropolitan cities. And people have adopted a crowded and auto-centric life as Jane Jacobs (1961) points out in his book "The Death and Life of Great American Cities". This new system has enabled the creation of new high welfare segments in the societies by increasing the asset prices rapidly and generated important opportunities in the socioeconomic area.

However, rapid urbanization has also led to distorted urbanization. One of the trends in response to this chaos is New Urbanism Approach



advocating that "... communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions (https://www.cnu.org/who-we-are/charter-new-urbanism)

As a result of New Urbanism and similar movements, city planning has become important and practices which simplify and enrich the lives of residents have been implemented through legal regulations. These regulations and approaches have led to the addition of new ones to the factors affecting the prices of housing in the cities. One of these factors is the possibility of walking to daily living activities such as schools, stores, parks and libraries. These facilities which can be measured by various instruments used in developed countries, especially in the USA, have increasing importance in determining the housing price.

The housing sector has an important engine in the economic growth of the countries. For this reason, the decision-makers closely follow the construction sector and especially the housing market and keep the market alive in case of stagnation risk by decreasing tax, interest and transaction fees. There are a vast amount of academic studies on increasing house demand and price fluctuations. But it has been observed that walkability as a factor causing price increases is addressed as a variable in a limited way. Therefore, the aim of this study is to examine the effect of walkability and other specific factors on housing prices.

#### II. LITERATURE REVIEW

The term hedonic which is used to explain the price and demand analysis for heterogeneous goods and also one of the first important applications of multivariate statistical techniques in economics was first used by Court (1939). Furthermore, Lancaster's (1966) consumer theory and the theory proposed by Rosen (1974) have formed the basis of hedonic price models

Hedonic models are also frequently used in demand and price analysis of houses as one of the important heterogeneous goods in the economy. Because the houses have other characteristics that are outside the macro factors such as interest, tax, land, economic development, population growth, migration and culture and which determine the preferences of the buyer or the lessor. These factors include the age of the building, the square meter of the apartment, the floor, the income of the district and easy accessibility. The hedonic price approach allows estimating the impacts of each house-specific factors on housing prices while all other factors are fixed.

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When the literature of the empirical studies on the relationship between house-specific factors and their price is examined, it is seen that these factors are discussed in three main categories. These are classified as Locational Attributes, Structural Attributes and Neighborhood Attributes. (Chau and Chin, 2002:151).

Grether and Mieszkowski (1974), as one of the first studies in this field, have focused on the determinants of housing prices. In the study conducted in New Haven, the physical structure of the house and the arrangements made in the neighbourhood (traffic routing, street sweeping, etc.) have been found effective on housing prices.

Jim and Chen (2006) have found that the higher floor in multi-storey apartment blocks, green areas and closing to water increase home prices between 7.1% and 13.2%. On the other hand, they have observed that proximity to non-public forested area and exposure to traffic noise haven't been effective in house price. However, the same authors (2010) in their study for high-rise buildings in Hong Kong have found that neighbourhood park is the most important variable which increases housing price. Tyrvainen and Miettinen (2000)'s studies based on Finland have found that a one-kilometer increase in the distance to the forest area caused an average decrease of 5,9 per cent in the market price of housing and also houses with forest view are more expensive by 4,9 per cent on average compared to similar properties.

Jud and Watts (1981) have found out that the quality of the nearby school has a significant impact on home value. Chin and Foong (2006) in their study of Singapore that affirmed the same result and they have claimed that accessibility to prestigious schools has influenced housing prices, and even explained the fluctuation in house prices in this country.

Hui et.al. (2007)'s hedonic model with spatial adjustment study have determined that there is a negative relationship between the duration of travel from the residence to the central trade zone and housing prices; the household is ready to pay more money for apartments with sea views. However, they have found that green areas aren't a significant variable in the housing price interestingly and the noise level has correlated positively with the price.

In their interesting study using the Fuzzy Delphi method, which they claim to be a fast, flexible and inexpensive alternative to the hedonic pricing method that they consider costly and time-consuming, from the eyes of real estate experts, Damigos and Anyfantis (2011) shows that beautiful view can



significantly increase the price of a house by up to 50% and an unpleasant view can lead to a 25% drop in the price of the house.

Huang et. al. (2015) have found out that local amenities are capitalized into the housing prices and the impact of credit on home price depends on the level of local amenity.

Bayer et. al. (2007) in their most cited research have found that many people are willing to pay more for the more educated and richer neighbours.

The cities have become more walkable and in this way, it has become important for the city residents to reach the living spaces and social areas. This situation has become particularly essential in housing prices. There are many factors affecting walking and walkability. Especially, sociodemographic characteristics play a key role. For example, residents with more mobility options are more responsive to amenities around them and are more sensitive than those with fewer options (Manaugh and El-Geneidy, 2011: 312). In addition, the value of walkability is influenced by pedestrian collision, the ability to connect to streets, length of pavements, speed limit and similar factors (Li et. al., 2014: 162). The walkability of cities is measured by various walkability indices. In recent years, academic studies on these indexes have increased.

There are also studies about walkscore which is a new and most widely used dynamic that affects housing prices and is used to measure walkability. Cortright (2009), Manaugh and El-Geneidy (2010), Duncan et al. (2011), Rauterkus and Miller (2011) and Pivo ve Fisher (2011) have published many studies about walkscore and housing prices which one of the variables of this study. These studies show that walkscore has a positive effect on housing prices. Cortright (2009), Rauterkus and Miller (2011) focus their studies on walkscore how and to what extent the housing prices will increase. Pivo and Fisher (2011) in their differentiated study discuss the walkscore relationship with the prices of commercial workplaces.

#### III. PURPOSE, DATA AND METHOD

This study aims to examine the effect of walkability, measured by Walkscore, and the age of the house, the square meter of the apartment, the floor of the apartment, the income of the district on the housing price. For this purpose, 2109 houses for sale ads in 29 district of Istanbul which are published on the website of a well-known company that provides real estate services globally has been evaluated for the period of 1-15 August 2018. Subsequently, a model has been created in which the housing price is the dependent variable, the walk score index, the age of the house, the square

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meter of the apartment, the floor of the apartment and the income of the district are independent variables. Information about the price, age, square meter and floor of the house has been obtained from the ads. The data related to the income of the district is collected from the results of the Mahallem Istanbul project (http://www.mahallemistanbul.com/) conducted by Istanbul University Faculty of Economics with the support of the Istanbul Development Agency. The data for walkability variable is obtained from walkscore.com.

Walkscore measures walkability on a scale from 0 to 100 depending on walking routes to places such as groceries, schools, parks, restaurants and shops. Opportunities located within a five-minute walk (.25 mile) are given to maximum points. While making these calculations, Google, Education.com and Open Street Map are used as data sources. It calculates the walking distance of each address (housing, workplace, any location) to the social facilities (park, school, etc.) and assigns a walking value between 0 and 100. Walkscore also analyzes road metrics such as population density, block length and intersection density, and measures whether roads are pedestrian-friendly. Walkscore categorization is given below Table 1:

Table 1.
Walkscore Categorization

Walkscole Categorization		
	Walker's Paradise	
90-100	Daily errands do not require a car	
	Very Walkable	
70-89	Most errands can be accomplished on foot	
	Somewhat Walkable	
50-69	Some errands can be accomplished on foot	
	Car-Dependent	
25-49	Most errands require a car	
	Car-Dependent	
0-24	Almost all errands require a car	

Source: https://www.walkscore.com/methodology.shtml

In this study, cross-sectional regression analysis is applied due to the structure of the data included in the model. In the analysis using the least squares method, White Test is applied to the model due to heteroscedasticity. The model of the study is given below.

 $HousingPrice_{it} = \beta_0 + \beta_1 HouseAge_{it} + \beta_2 SquareMeter_{it} + \beta_3 Floor + \beta_4 Income + \beta_5 Walkscore + u_{it} + \beta_2 Floor + \beta_4 Income + \beta_5 Walkscore + u_{it} + \beta_5 Floor + \beta_5 Walkscore + u_{it} + \beta_5 Walkscore + u_{it} + \beta_5 Walkscore + u_{it} + u_$ 

Limitations of the study may be that a more precise calculation of Walkscore is available for the cities in the United States, Canada, and **JOBS** 

Australia. However, the fact that the sampling has a high representative ability and produces very close results to the fact that the calculated walkscore values for Istanbul decrease the effects of the constraints.

#### IV. RESULTS

Cross-sectional regression analysis is applied due to the structure of the data included in the model. In cross-sectional regression analysis, it is frequently encountered heteroscedasticity problem in this type of discrete data. Therefore, it can be said that the results are more meaningful after solving the heteroscedasticity problem. The first version of the model is shown in Table 2: An Analysis On
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Table 2. Least Square Method

**Dependent Variable:** Price

Method: Least Squares
Date: 08/15/18 Time: 18:07

Sample: 2109

**Included observations: 2109** 

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	-1163.918	74.99287	-15.52038	0.0000
HouseAge	-5.671033	0.840549	-6.746823	0.0000
SquareMeter	9.004343	0.216609	41.56962	0.0000
Floor	55.21752	29.50804	1.871270	0.0614
Income	8.402550	1.474617	5.698124	0.0000
Walkscore	6.711168	0.572372	11.72519	0.0000
R-Squared	0.496103	Mean dependent var		706.7572
Adjusted R-Squared	0.494905	S.D. dependent var		618.5174
S.E. of regression	439.5807	Akaike info criterion		15.01236
Sum squared resid	4.06E+08	Schwarz criterion		15.02845
Log likelihood	-15824.53	Hannan-Quinn criter.		15.01825
F-statistic	414.0937	<b>Durbin-Watson stat</b>		0.845747
Prob (F-statistic)	0.000000			

Significant results have been achieved by applying the White test to our model to solve the heteroscedasticity problem. The results of the White test are detailed in Table 3 and this table is also considered as a table in which we will interpret the regression analysis.



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# Table 3. Status of the Model after White Test

**Dependent Variable:** Price **Method:** Least Squares

**Date:** 08/15/18 **Time:** 18:11

Sample: 2109

**Included observations: 2109** 

White heteroskedasticity- consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	-1163.918	82.34772	-14.13419	0.0000
HouseAge	-5.671033	0.873492	-6.492368	0.0000
SquareMeter	9.004343	0.507114	17.75604	0.0000
Floor	55.21752	28.20754	1.957544	0.0504
Income	8.402550	1.579841	5.318604	0.0000
Walkscore	6.711168	0.600162	11.18226	0.0000
R-Squared	0.496103	Mean dependent var		706.7572
Adjusted R-Squared	0.494905	S.D. dependent var		618.5174
S.E. of regression	439.5807	Akaike info criterion		15.01236
Sum squared resid	4.06E+08	Schwarz criterion		15.02845
Log-likelihood	-15824.53	Hannan-Quinn criteria.		15.01825
F-statistic	414.0937	Durbin-Watson stat		0.845747
Prob (F-statistic)	0.000000	Wald F-statistic		123.8783
Prob (Wald F-statistic)	0.000000			

The analysis has produced several results in terms of both walkability and home-specific factors.

The value of Prob (F-statistic) less than 0.05 indicates that the model is significant and therefore the variables in the model can be interpreted. While "floor" variable is significant at the 10% level, other variables are significant at 5% level. The results of the analysis show that the increase in the walkability increases the housing prices. Accordingly, a one-unit increase in walkscore value increases the house price by 6.711 TL. This result supports the other studies in the literature and it has been determined that the housing have higher demand as the walkability increases and accordingly increases the prices. In addition to the relationship between walkscore and housing prices, the following findings are obtained from the analysis:



A one-year increase in the age of house reduces the housing price by 5.671 TL. A one-unit increase in square meters increases prices by 9.004 TL. On the other hand, it is determined that the non-ground floor flats are more expensive by 55.217 TL. Finally, it is found that one-unit increase in the income of district increased the housing prices by 8.402 TL.

In addition to all these results, it is seen that R-Squared is 0.496103. The meaning of this value how much the model is explained by these variables. If new variables are added to this model, the ability of the model to be explained by these variables may also increase. For this reason, this model can be re-examined with new variables in another study.

#### V. CONCLUSION

Although there are many studies in the literature that examined the relationship between walkability and the housing prices, it hasn't observed a study in Turkey about this issue. The results are in parallel with the results in the literature. According to this, housing prices are increasing as the walkability increases. On the other hand, according to the findings, the effect of the house age, the square meter of the apartment, the floor of the apartment, the income of the district on the housing prices is remarkable. The findings are indicative for policymakers, sector representatives and housing demanders.

In this context, this effect of the walkability in Istanbul on housing prices may be:

- An indicator for policymakers on taxing,
- A variable in the methodology of real estate valuation companies,
- A variable in determining the economic impact of the plans made by urban planners,
  - An indicator for the determination of housing rents,
- An indicator for decisions of individuals who buy housing in terms of cost/benefit.

The relationship between the age of the house and the housing price can be used as an indicator for determining the annual depreciation value of the houses in Istanbul. In addition, the homeowner may make analysis over rent value/housing price

As a result of the analysis, the square meter-price relationship can be an indicator for the determination of the sales prices of the companies in the construction sector, and the optimum size of the houses to be produced.

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The relationship between the income of the region and the housing prices is very important in terms of showing the effect of the rent obtained as a result of the increase in housing prices on income distribution.

It is seen that the analyses are based only on the prices of the houses in Istanbul and the ads given in a limited time period. In this context, it is suggested that data can be analyzed for a wider time frame for the whole of Turkey.

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