AN INVESTIGATION OF THE RESIDENTIAL VACANCY PATTERNS IN AN URBAN HOUSING MARKET: THE CASE OF GEMLIK

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

HATİCE KÜBRA KIVRAK

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CITY PLANNING IN CITY AND REGIONAL PLANNING

SEPTEMBER 2019

Approval of the thesis:

AN INVESTIGATION OF THE RESIDENTIAL VACANCY PATTERNS IN AN URBAN HOUSING MARKET: THE CASE OF GEMLIK

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ABSTRACT

AN INVESTIGATION OF THE RESIDENTIAL VACANCY PATTERNS IN AN URBAN HOUSING MARKET: THE CASE OF GEMLIK

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September 2019, 142 pages

The charm of the construction sector and the unique characteristics of the housing have led to increase in housing production in Turkey. Thus, housing oversupply has occurred in most of the urban areas, and this situation has led to the formation of vacant housing stock which creates problem in different parts of the settlements. In this context, housing stock and housing vacancy are significant issues that need to be monitored regularly in order to take necessary precautions related with planning.

This study, considering high vacancies in Turkey, argues that neither vacancy rate nor the reason of vacancy is uniform across a housing market, rather they vary with respect to neighborhood characteristics. In this context, residential vacancy rates and their possible reasons are examined in the case of Gemlik.

Findings of the study reveal that the current physical and social characteristics of the neighborhood are effective in differentiating the residential vacancy. The vacancy pattern differs with respect to age of the existing dwellings, land use, the share of new construction, construction quality, and structural features of existing houses, house prices, social profile in the neighborhood and purpose of use.

Seven residential vacancy patterns were identified based on 13 neighborhoods in Gemlik. Each of these patterns have different implications for urban life, thus they require different types of intervention. At this point, locality of plans gains importance because each pattern can be managed by intervening in the existing or potential housing stock in that neighborhood. Therefore, different policy recommendations for each pattern are indicated.

Keywords: Residential Vacancy, Residential Vacancy Rate, Vacancy Pattern, Housing Vacancy in Turkey, Gemlik

ÖZ

KENTSEL KONUT PİYASASINDA KONUT STOKU BOŞLUK BİÇİMLERİNİN İNCELENMESİ: GEMLİK ÖRNEĞİ

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Eylül 2019, 142 sayfa

İnşaat sektörünün çekiciliği ve konutun kendine has özellikleri Türkiye'de konut üretiminde artışa neden olmuştur. Bu nedenle birçok kentsel alanda konut fazlalığı meydana gelmiştir ve bu durum yerleşim yerlerinin farklı bölgelerinde problem yaratan boş konut stoklarının oluşmasına neden olmuştur. Bu bağlamda, konut stoku ve konut boşluğu, planlama ile ilgili gerekli önlemleri almak için düzenli olarak izlenmesi gereken önemli konulardır.

Türkiye'deki yüksek boşluk oranlarını da göz önüne alarak bu çalışma herhangi bir konut piyasasındaki boşluk oranlarının ve boşluğun nedenlerinin aynı olamayacağını, bunun yerine mahalle özelliklerine göre farklılık gösterdiğini iddia etmektedir. Bu kapsamda konut boşluk oranları ve bu boşluk oranlarının olası nedenleri Gemlik mahalleleri bazında incelenmiştir.

Çalışmanın temel bulguları, mahallenin mevcut fiziksel ve sosyal özelliklerinin konut boşluk biçiminin farklılaşmasında etkili olduğunu ortaya koymaktadır. Konut stoku boşluk biçimi; mevcut konutların yaşı, arazi kullanımı, yeni inşaatların toplam stok içindeki payı, inşaat kalitesi, mevcut konutların yapısal özellikleri, konut fiyatları, sosyal yapı ve konutların kullanım amacı bakımından farklılık göstermektedir.

Sonuç olarak, Gemlik'te farklı özelliklere sahip 13 mahalle bazında yedi konut boşluk biçimi belirlenmiştir. Her bir konut boşluk biçiminin kentsel yaşamda farklı etkileri vardır, bu nedenle farklı müdahale biçimlerine gereksinim vardır. Bu noktada planların yerelliği önem kazanmaktadır çünkü her bir boşluk biçimi mahalledeki mevcut ve potansiyel konut stokuna müdahale edilerek yönetilebilir. Bu nedenle, her bir konut boşluk biçimi için farklı politika önerileri belirtilmiştir.

Anahtar Kelimeler: Konut Boşluğu, Konut Boşluk Oranı, Boşluk Biçimleri, Türkiye’de Konut Boşluğu, Gemlik

To my beloved family…

ACKNOWLEDGEMENTS

First of all, I would like to express my deepest gratitude to my advisor Assist Prof. Dr. Ö. Burcu Özdemir-Sarı for her guidance, criticism and ideas in the development of my thesis. I am thankful for her support, encouragement and contributions for this study.

I would like to thank to examining committee members: Prof.Dr. Serap Kayasü, Prof. Dr. Nil Uzun, Assoc. Prof. Dr. Osman Balaban and Assist. Prof. Dr. Ebru Kamacı Karahan for their suggestions and contributions during the jury.

I am grateful to my friend Sinem Civelek for her opinions and support during my thesis study. Her moral support and deep friendship fueled me whenever I needed a break.

Especially, I am deeply indebted for the presence of Nejat Yıldız beside me throughout the study. I thank him for giving me whole love and encouragement. He is the one that believes in every step when I need. I would not succeed to complete this thesis without his support and faith in me.

Last but not the least, I would like to thank my beloved parents Zehra & Ali Kıvrak and my little sister Büşra for endless trust, support and love throughout in every step of my life. I am thankful for the presence of them in my life. I owe everything to them.

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LIST OF ABBREVIATIONS

ABBREVIATIONS

HDA: Housing Development Agency (TOKİ)

MSA: Metropolitan Statistical Area

NAD: National Address Database

US: United States

TURKSTAT: Turkish Statistical Institute (TUIK)

CHAPTER 1

INTRODUCTION

1.1. The Necessity of Understanding Residential Vacancy Patterns

Housing constitutes quite a distinctive commodity and the law of demand and supply does not work in a similar vein to other commodity markets. In micro economics text books, demand is defined as the planned amount of goods or services to be purchased by the consumer at a special price within a certain time period whereas supply is the planned amount of goods or services to be sold by the producer at a special price within a certain time period (Donduran, n.d., p. 2). Market equilibrium occurs when supply is equal to the demand in the market. If, at the given price, quantity demanded exceeds quantity supplied this is called an excess demand (or shortage), and if quantity supplied exceeds quantity demanded this is called an excess supply (or surplus) (Lipsey and Courant, 1996). These basic definitions for supply, demand, and equilibrium are also applicable for housing sector. However, supply and demand relations within the context of housing market are complex due to the multiple functions and atypical features of housing.

The housing has a number of common features that can lead to a housing vacancy. These characteristics can lead to excessive housing supply, as well as low housing demand. The first characteristic is its fixed position. It is not possible to move the house from the regions with high supply to the regions where supply is low. The second feature is being both investment and consumption goods. Its use as an investment tool is a feature that triggers the increase in housing supply. The other feature of housing is its longevity. Due to its durability, it is an important issue in the matters of inheritance. However, the needs of households change over time and housing does not meet the expectations. Another feature of housing is costs. For

example, transactions costs and its costs for sale or rent require the highest share in household expenditures.

When quantity supplied exceeds quantity demanded in housing markets, this means existing housing units in the market are more than necessary to accommodate existing households or in some cases, supplied units do not match with household demand. Under these circumstances, some housing units remain vacant. Housing vacancy rate in any housing market can be defined as the share of the vacant units in the total housing stock at a particular point in time (Özdemir Sarı, 2015). The vacancy rate required for the smooth operation of the housing market is not zero because a certain level of empty stock is necessary in the market to house newly formed households and to allow residential mobility. The housing market is usually considered in equilibrium when 4-6% of the housing units are vacant (Özdemir Sarı, 2015). However, it is a fact that there is no consensus on the vacancy rate required for the market to be in equilibrium (Thalmann, 2012). The values below this point indicate shortages and the values above indicate excess production in the housing market. From the urban planning point of view, both shortage and oversupply creates several problems. Housing shortage, for instance, triggers unauthorized housing construction, overcrowded living and unaffordable housing conditions (Thalmann, 2012, Özdemir Sarı, 2019). Oversupply, on the other hand, leads basically to urban spatial expansion (Özdemir Sarı, 2019). Thus, housing vacancy have to be monitored because housing vacancy rate is an important input for the elimination of the disequilibrium between the housing supply and demand or housing need according to the shortage and oversupply (Özdemir Sarı, 2015).

The housing problem should be handled both qualitatively and quantitatively. However, in Turkey, inadequate number of housing has been thought to be a problem. Developed housing policies has been intended to increase the housing supply for years (Özdemir Sarı & Aksoy Khurami, 2018). The development of housing policies was influenced by the fact that the construction sector was seen as the leading sector for economic growth and the solution of unemployment in the short term. Since the

construction sector, which is a component of products and services produced by different sectors (trade, transportation, service and so on), has a close relationship with other economic sectors (Balaban, 2011). In other words, the housing sector is in a tight input-output relationship with other sectors and the sector is mobilizing other sectors. The housing sector is mostly based on domestic industry and has a high employment potential. In this respect, it is an indispensable element of GNP (Öztürk, Fitöz, 2009).

Considering the construction impact on GNP, the government policies are the most significant reason for increasing activity of construction sector. Since HDA has gradually become an important actor in housing sector, it has the capacity to effect housing demand and supply. After the Justice and Development Party came to power in 2002, HDA's powers have been increased and the activities of the HDA are noteworthy. At 2003, the Urgent Action Plans played an active role in government action lists. New housing production campaign and urban transformation program were within the scope of the Urgent Action Plans. Between 2002 and 2010, the goal of the government to build 500 thousand houses was established and reached. In addition to reducing inflation and interest rates, mortgage loans were restructured in February 2007 by law (Türel, 2012a, p.295). The 2007-2008 global crisis was reflected in the housing sector of many countries as a decrease in house prices and construction activities and a deterioration in housing affordability (Özdemir Sarı, 2019, p. 167). On the contrary to the global trends, Turkish housing production has increased and number of housing units is considerably higher than the number of household increases since the early 2000s due to government policies. Between 2011 and 2023, the goal of the HDA is to build 700 thousand houses (HDA, 2019). The campaigns enable housing production in almost all areas in the city, including existing built-up, slum and historical areas, and around the city. Consequently, with Turkey-wide increasing housing production, there has been a noticeable surplus in housing (Özdemir Sarı, 2015).

In recent years, significant excesses in housing production and increasing vacancy has been significant issue in Turkey. The government has organized campaigns to increase

housing sales and to deplete housing stock in the market (Özdemir Sarı & Aksoy Khurami, 2018). Excess housing production and high housing vacancy were frequently appear on media so, the government take steps to increase housing sales. In a recent Scientific Research Project of METU, Özdemir Sarı and Aksoy Khurami (2019) compiled the relevant government actions to increase housing sales. Accordingly;

The news dated on 15.05.2018 (URL1):

"The government has taken important steps to prevent the stagnation in the construction sector in recent days. The 18% VAT was reduced to 8% and the rate of title deed was reduced from 20 to 15 per thousand. Then, with the good news of Prime Minister Binali Yildirim 1.25-1.35 percent of the mortgage rate was decreased to 0.98. After all these support moves, the head organizations of the real estate sector came together and decided to campaign. Housing Developers and Investors Organization (KONUTDER), Istanbul Association of Builders (İNDER) and the Association of Real Estate and Real Estate Investment Campaigns (GYODER) announced that 20% discount will be made in cash and credit purchase. The campaign will be valid between May 15 and June 15, down payment will be decreased from 20 percent to 5 percent. There are approximately 100 thousand houses in the portfolio of the companies. It is aimed to sell 9 billion Turkish lira with a 20 percent discount.''

The news dated on 28.08.2018 (URL2):

''A large housing campaign started under the leadership of the Ministry of Environment and Urbanization. Interest rate was reduced to 0.98, down payment fell and housing prices were reduced. The campaign announced by Minister Murat Kurum will be available for 100 thousand houses and about 400 projects throughout the country. Minister Kurum, said they expect the sale of 60 thousand housing units under the campaign.''

The news dated on 07.11.2018 (URL3):

‘’It is estimated that there are more than 1 million housing. In order to solve the deadlock in the sector, the transfer of ready-to-sell houses to the state is on the agenda. For this purpose, inventory study was started.’’

It can be said that the news related with housing vacancies and housing bubbles draw attention instead of the news related insufficient number of housing. Vacant house has become a problem that cannot be underestimated. However, like Özdemir Sarı & Aksoy Khurami (2019) said, these campaigns were not intended to solve the households housing problems, on the contrary, they centered upon solving the problems of large construction firms. Moreover, it was seen that the government can intervene directly or indirectly in the issue of increasing the sale of housing. This situation is an issue that cannot be ignored in city planning because housing areas occupy an important place in urban land use.

Although some technical methods and principles are used in all planning processes, the differences in planning traditions and socioeconomic conditions of countries require that the plans be specific to where they are implemented. In other words, the physical, social, economic and demographic characteristics of the area to be planned in urban planning determine the direction of the planning. Because the problems and the potentials of planning areas are different. For this reason, it is necessary to obtain accurate data for the healthy urban development and sustainability of cities. The current situation needs to be analyzed and/or past trends needs to be observed while making development plans. Moreover, as is has been mentioned earlier, residential areas occupy generally a wide areas in urban land use. This simply shows the importance of housing in urban area. At this point, housing stock and housing vacancy are significant issues that need to be monitored regularly. However, there is no regular system to monitor the housing stock in Turkey. As it can be understood from mentioned campaign, increasing number of housing creates housing problems and these problems are tried to be solved with temporary solutions. In order to solve this, first of all, the vacancy rate should be examined and then, the necessary steps can be taken. The housing vacancy is influenced by many factors, primarily depending on

land structure and population. These factors vary from country to country, from province to province. At this point, considering locality and importance of housing vacancy, the following question comes to mind: Does the spatial distribution of vacancy rates display a homogenous or heterogonous pattern? What can these be?

Academic studies have dealt with the housing vacancy from different perspectives. The relation between rent and vacancy (Rosen and Smith, 1983; Hagen and Hansen, 2010), incidence and duration of vacancy (Gabriel and Nothaft, 2001), the relation of market prices or housing prices and vacancy (Wheaton, 1990; Vakili-Zad and Hoekstra, 2011), the relation between vacancy and policies (Vakili-Zad and Hoekstra, 2011; Couch and Cocks, 2013), the determinants of vacancy and reasons of high/low vacancy (Nadalin and Igliori, 2017; Jensen, 2017; Huuhka, 2016; Kwoun and et al,, 2013; Gu and Asami, 2016; Styruk, 1988; Wood and et al., 2006; Zhang, 2017; Niner, 1999) are the main focus of the academic studies. The studies indicated that the high vacancy rate caused by the current problems in the housing market. In addition, the levels of high vacancy, the reasons rates and how they should be intervened were studied.

While a variety of approaches to housing vacancy in international publications, the same situation could not be observed in Turkey. When considering the handling of vacancy issues in Turkey, the focus was on increasing the number of housing, providing short-term employment and invigorate the economy. In short, when it comes to housing problems in Turkey, wrong housing problems were handled. Adding to this situation the problem of providing accurate data in the housing vacancy calculations caused the number of studies on housing vacancy to be limited. Computational difficulties at the beginning of the research does not make it possible to focus on spatial differentiation of housing vacancy rate, which is a more detailed examination of the subject. Therefore, there is a gap in academic studies on the spatial differentiation of housing vacancy rate.

When all these issues are taken into consideration, in the Turkish case, examining the residential vacancy patterns become a current necessity considering the high housing output created in the country since the early 2000s. In this context, main hypothesis of this thesis is that residential vacancy displays a heterogeneous pattern in an urban housing market.

This study basically examines residential vacancy patterns. The word ‘’pattern’’ is defined as to be a particular way in which something is done, is organized, or happens according to Cambridge dictionary (URL 4). In this study, vacancy patterns indicate examples of different emergence and existence in the housing market. Guasch, Robert and Marshall (1983) stated that vacancy rates, frequencies, and durations will not show uniform characteristics across a housing market in their article ‘’An Analysis of Vacancy Patterns in the Rental Housing Market’’. On the contrary, it is said that vacancy pattern will diversify with mobility of tenant, housing unit size, number of units. In this context, this study argues that neither vacancy rate nor the reason of vacancy is uniform across a housing market, rather they vary with respect to the neighborhood characteristics such as age of the existing dwellings, land use (whether mixed or not), the share of new construction, construction quality, and purpose of use (summer houses or regular houses).

1.2. Aim and Scope of the Study

Considering the above mentioned discussion, it is a fact that a housing oversupply has occurred in most of the urban areas of Turkey. This surplus housing stock has led to the formation of vacant housing stock in different parts of the settlements. Accordingly, this thesis aims at looking at residential vacancy from a wider perspective to understand whether residential vacancy differs within the urban housing market and these variations originated from different reasons. This requires to find answer to the following questions: What is happening in the existing housing areas of the city when so many new housing units are added to the stock? Does all of the newly built housing units are demanded by households? Does the spatial distribution of

vacancy rates display a homogenous pattern? Is it possible to identify different residential vacancy patterns in the housing market? In this sense, emphasis is placed to vacancy concept, its importance in planning, the residential vacancy patterns and which reasons make the vacancy differ in urban housing market.

A detailed study related to the residential vacancy in an urban housing market in academic fields discusses the vacancy rates (optimal and real), their reasons, duration or impact on cities. In this respect, the discussion concentrates on the demand, supply and vacancy concept. The importance of vacancy and factors related with vacancy and characteristics of regions with high vacancy or low vacancy will be examined. So as to further develop and link these vacancy examples with the spatial distribution of vacancy rate in an urban housing market, the case study in an area where diversity of vacancy can be seen intends to show different residential vacancy patterns and their possible reasons. Moreover, this research puts forward that the different residential vacancy patterns in the housing market require to different planning policy and interventions.

1.3. Method of the Study

This research analyzes the residential vacancy patterns observed in an urban housing market. The aim of the thesis is to display different patterns, if any, with the indicators such as the number of housing units and households, vacancy rates and population. Regarding these, main research question is “Does the spatial distribution of vacancy rates display a homogenous pattern in an urban housing market?” In other words, what kind of differences can be observed in the existing urban fabric and development areas of the city with indicators such as stock values, population and vacancy rates?

Firstly, the literature review was made about the concept of housing demand, housing supply and residential vacancy in this study. Determinants of housing supply and demand are listed in order to better understand the underlying reasons of residential vacancy. The studies related with vacancy are examined to present residential vacancy patterns. In order to direct to the case study (detailed information will be given

below.), academic studies have been tried to be examined within the framework of the following questions:

1. What are the reasons of increased housing production in an urban area?
2. What is vacancy? How is housing vacancy formed?
3. What kinds of housing vacancy can be seen in an urban area?
4. What are spatial, economic, and social feature in different urban areas for different vacancies?
5. How could we categorize the residential vacancy in terms of location in an urban area?
6. What is the reasons of spatial distribution of residential vacancy?
7. What is the importance of housing vacancy in terms of planning and housing policies?
8. How should vacancies be intervened in planning?

After explaining these concepts, general housing situation in Turkey are examined. The concept of housing in Turkey will be examined in terms of the determinants of housing demand and supply, which mentioned in the literature review. While examining academic studies and Turkey, national and international sources are used.

Residential vacancy patterns are elaborated in the chapter of case studies. The reason why a case study method has been selected in this research is that in the healthy development of cities, it is an important issue to take the necessary precautions according to whether the vacancy rate is high or low and depending on the type of vacancies. From this point of view, the most appropriate method for examining the vacancy rate in the housing stock is the field research.

Jensen (2017) stated that the housing vacancy calculations provide the most accurate results on the subscales such as district or neighborhood. Özdemir (2019) confirmed the accuracy of this and stated that the vacancy rate calculations based on observation in Ankara within a certain period of time yielded higher results when made with TURKSTAT data. In the light of all the facts mentioned above, it was planned to

examine the vacancy rates on the basis of neighborhoods and the supply and demand factors affecting this vacancy rate.

1.4. Research Design of Case Study

The literature review presented in this study has displayed that many factors directly or indirectly affect the housing vacancy. To put it briefly housing vacancy emerges due to the mismatch between supply and demand. In the Turkish case, continuously increasing housing production and a recent debate in the media and academia about the existence of a surplus housing stock in the country were the main motivations of this study to examine residential vacancy patterns in detail. The flow of the case study research is described in Figure 1.1.

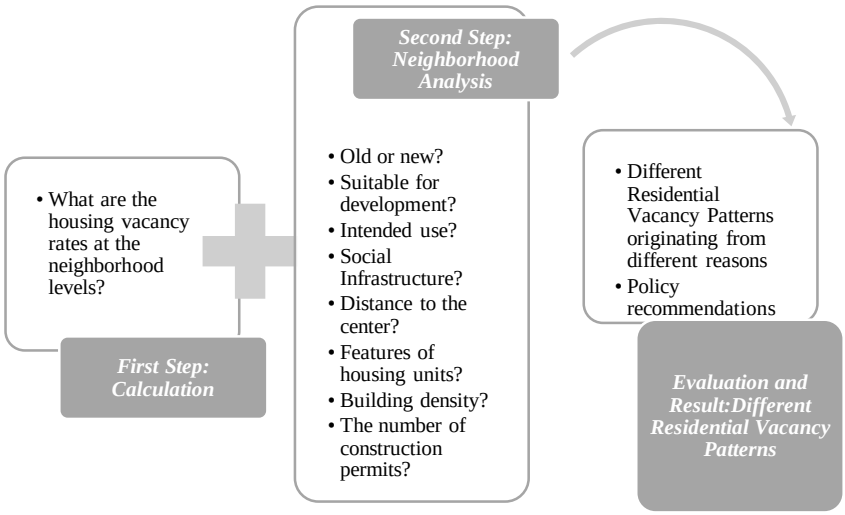


Figure 1.1. The Flow of the Case Study Research

The case study research part of the thesis consists of two stages. The first is the calculation, and the second is interpretation based on observation. The main hypothesis of the thesis is that different vacancy patterns are identified in an urban housing market. Thus, housing vacancy rates at neighborhood level have been calculated in order to provide a basis for the main hypothesis. At this point, it should be noted that the calculation does not provide the correct vacancy rates in the neighborhoods (Its reason will be explained under the title of Data Constraints of the

Study.). The main question of the calculation part, related data, data collection techniques, and tools of data analysis are shown in Table 1.1.

Table 1.1. Research Design and Question of the Calculation Part

Question	*Data*	*Data Collection*	*Data Analysis*
What are the housing vacancy rates at the neighborhood level?	• Total number of housing units at the neighborhood level •The number of households at the neighborhood level	• Gemlik Municipality •Turkish Statistical Institute (TURKSTAT)	• Calculation •Classifications in terms of rate range • Mapping

The number of total housing stock and the number of households are used as data to estimate the vacancy rates in the neighborhood in this study. The difference between the total housing stock and the households gives the number of unoccupied housing stock, and the estimated vacancy rate is the ratio of unoccupied housing stock to total housing stock. It should be noted that the empty stock in the hands of households is of interest in this study rather than the ones remaining unsold in the hands of construction firms. The data of total number of housing units at the neighborhood level in 2016 is provided from Gemlik Municipality. Source of this data is the National Address Database[1]. The data of households at the neighborhood level in 2016 is provided from TURKSTAT.

The second part of the case study is observation in the field, in other words, neighborhood analysis. Relevant literature displays that the factors affecting housing supply and demand vary and the diversity of these factors is simply dependent on time, space and sociological differences. Considering that the residential vacancy increases with excess housing production, or low demand (i.e. low household formation rate, declining attraction of the neighborhood), it is examined under two concepts which are either excess housing production or low demand. Firstly, the excess of housing in the neighborhood is due to the fact that the neighborhood is suitable for housing construction in terms of available land. Secondly, demand deficiency is due to the

[1] Ulusal Adres Veri Tabanı (UAVT) in Turkish

preferability of the neighborhood. In other words, it depends on spatial characteristic of the neighborhood.

In the neighborhood analysis, local knowledge of author is used because it is difficult to understand housing development and social structure in neighborhoods level from written sources. When it is hard to find accurate answer such as income level, citizens' preferences and tendency, interpretations can be made from the local knowledge about the neighborhoods in previous years.

In order to conduct this study more regularly, vacancy patterns will be examined based on neighborhood boundaries due to data constraints. While examining the differentiations at the neighborhood level, basic questions based on academic literature were formed in order to examine each neighborhood in the same way. These questions examine whether the housing supply is high or whether the population (as number of households) is low. The aim of these questions is to reveal the reasons for the formation of residential vacancy in the neighborhoods in terms of demand and supply. The questions related research approach, data collection techniques and data analysis are shown in the Table 1.2.

Table 1.2. Research Design and Questions of Neighborhood Analysis Part

Questions	Data Collection	Data Analysis
Is the neighborhood an old settlement area or not?	• Observation • Municipal Archives	• Descriptive
Does the neighborhood has area of development? Are there empty parcels?	• Observation • Municipal Archives	• Descriptive
What is the use of the neighborhood? (Residential, summer houses, commercial or mixed use?)	• Observation	• Descriptive
What is the number of construction permits over the years in the neighborhood?	• Municipal Archives	• Descriptive
Is it social infrastructure adequate in the neighborhood?	• Observation	• Descriptive
What is the distance of neighborhood from the center? (map distance)	• Observation	• Descriptive
What are the numbers of houses for sale and rent?	• Observation • Web Search	• Classification • Descriptive

What are the physical features of the housing units in the neighborhood? (The number of floors? building block is large or small? road narrow or wide?)	• Observation • Municipal Archives	• Descriptive
What is the building density of the neighborhood?	• Observation • Municipal Archives	• Descriptive

1.5. Data Constraints of the Study

In this study, various limitations existed due to data. Firstly, the number of residential unit is not known and there is no regular system in which the number of housing units can be learned in Turkey. The calculation related housing units can be done using the National Address Database data in Turkey. Moreover, the number of residential unit is estimated by adding new dwellings to the housing census made by TURKSTAT in 2000. However, residential vacancy should be calculated based on actual housing numbers in the market in order to give the right planning decisions.

In this study, the housing data of NAD in 2016 is used to calculate the residential vacancy rate in Gemlik. It is not the number of dwellings obtained from the database of the Gemlik Municipality. As a matter of fact, the municipality does not have such a database system. However, the research of Özdemir Sarı & Aksoy Khurami (2019) in Ankara showed that there is a difference between the calculated rate based on observation and the calculation made with the data obtained from TURKSTAT. Considering this research, it can be said that the vacancy rates in this thesis are not actual vacancy rates. In this study, the residential vacancy patterns in the neighborhoods are evaluated with the estimated vacancy rates and observations in the area. At this point, it should be noted that examination of residential vacancy patterns are made on neighborhood boundaries. Because the available data allow the calculations to be performed on neighborhood basis rather than typologically. For instance, the number of households on a particular building block should be known for calculation, however, the data obtained from TURKSTAT is not in this data structure. To be able to examine sub-regions in the neighborhood, one-to-one calculation is needed.

The fact that the housing data of TURKSTAT does not provide the actual number of housing causes some obstacles in the study. For example, in residential + commercial areas, due to its database structure, some commercial units are included in the amount of housing stock and exaggerate the number, thus leading to the overestimate of vacancy rate. Moreover, it is not possible to count the vacant residents one by one on the basis of neighborhoods due to time constraints.

1.6. Structure of the Thesis

This thesis is composed of five chapters including introduction and conclusion parts. It starts with a theoretical framework, then examines the case, and concludes with a discussion on residential vacancy. The introduction part states the necessity of understanding residential vacancy patterns, the main objective, and the flow of the study in general.

Chapter 2 provides an overview of the concept of housing vacancy. The aim of the literature review is to give idea about residential vacancy and vacancy patterns by examining the related studies. Related definitions and their reasons will be studied under the title.

Chapter 3 provides an outlook related the concept of housing in Turkey. What its general situation and its tendency in terms of supply, demand and vacancy are will be discussed. The aim of the section is to describe the general situation of housing in Turkey.

Chapter 4 consists of the case study research conducted in Gemlik. The Gemlik District of Bursa Province is chosen for the case study. This chapter provide a detailed look residential vacancy patterns and their reasons through Gemlik. Firstly, it is given an outline of Gemlik: the location within the region and province, history, demographic, social situation and urban structure. Secondly, the spatial distribution of the residential vacancy of the Gemlik are examined by calculating the housing vacancy rate in neighborhood level. It introduces research questions and their answers

for the case study in order to differ vacancy pattern. It concludes with evaluations both the estimated vacancy rates and the field research findings.

The conclusion chapter provides an overview of the thesis and discussions and findings. First of all, the residential vacancy patterns will be evaluated. Later on, it will be underlined that different residential vacancy patterns in the housing market are separate policy and intervention issues. As the last contribution, it ends with recommendations on what can be done in future studies.

CHAPTER 2

THEORETICAL FRAMEWORK: DEMAND, SUPPLY AND VACANCY

2.1. Introduction

Housing has some characteristic and functions which have implications on residential vacancies. Housing is a physical structure with certain spatial size and meets the basic sheltering need of people in a safe and healthy way (Özlük, 2015). It has several features and functions apart from being a shelter. In terms of residential vacancies, three of them worth mentioning here. Durability is the first feature to discuss. Housing is a durable commodity with a very long physical life span. In most cases, life span of housing is much longer than its user households' life cycle (Özdemir Sarı, 2010). This underlines the fact that during its life span, housing units, which are constructed according to the technology, materials and trends of their time of construction, accommodate to different households who have different characteristics and preferences. Therefore, at one stage of their life cycle, when housing units become obsolete and/or deteriorated they will remain vacant. In the case of obsolescence, housing units which were constructed according to the circumstances of their time of construction may become unable to meet contemporary needs and preferences of households. Deteriorated housing units, on the other hand, will lost the services provided by them to some extent due to ageing (Özdemir Sarı, 2010).

Another distinguishing feature of housing is immobility. Since housing is place-fixed, attributes of the location and negative/positive changes that occur in the surrounding area also affect housing (Özdemir Sarı, 2010). These may have two major implications for residential vacancies; (i) when spatial pattern of cities change (distribution of employment, services, new residential areas), this may affect the preferability of existing (old) residential areas leading to high vacancy rates; (ii) increasing vacancy

rates in an existing housing environment may trigger more vacancies in the area. Moreover, housing is both a consumption and an investment good. It is particularly households' investment motivation and multiple-ownership pattern which supports creation of a surplus in housing production leading to increasing vacancy rates in residential environments.

Particularly, due to durability feature of housing, housing markets include both new and old (existing) housing together. This also contributes to the heterogeneity of the housing commodity. People choose the most suitable unit among these old and new houses for certain reasons. Either human related factors or economic factors such as economic growth determine the level of housing demand and housing supply in the housing market. The gap between this demand and supply constitutes the housing vacancy/housing shortage. Existing literature, which investigates residential vacancies and produces theoretical and empirical knowledge on the issue, has roots in the property economics (Huuhka, 2016). In the context of property economics (or housing economics), residential vacancies are explained in relation to the supply-demand framework and market equilibrium.

The aim of this chapter is to constitute a background about housing demand, housing supply and housing vacancy concepts by putting emphasis on their definitions and their determinants in order to guide the investigation undertaken in Chapter 4 of this study.

2.2. Housing Demand and Supply

Housing demand, housing supply and housing vacancy are the key elements for housing economics. In order to understand the operation of housing markets and the concept of vacancy, supply, demand and their determinant factors have to be reviewed shortly.

2.2.1. Housing Demand and its Determinant Factors

The demand for housing can be defined as individuals having sufficient financial power to buy housing or to pay the rent of the house in order to meet their housing needs (Uysal & Yiğit, 2016). Housing demand in a country is determined by many different factors which vary from country to country and even from region to region. These factors can be divided into two groups as economic and demographic (Özlük, 2015, p. 42).

2.2.1.1. Economic Factors

The factors affecting housing demand can be classified under four headings in general. The first economic factor is prices. There are different prices affecting the demand for housing in the market. Housing prices- most important- housing rents and prices of investment preferences excluding housing. Housing prices are an important variable. There are many studies examining the relation between housing prices and demand in the literature by calculating the elasticity (Winger, 1968; Maisel et al., 1971; Carlier, 1973; Hausman & Wise, 1980; Elder and Zumpano, 1991; Ermisch, 1996; Tiwari, 1999; Fontenla and Gonzalez, 2009; Chow & Niu, 2015). In conclusion, considering all of these research, there was negative relation with housing demand and housing prices. In other words, when housing prices rises, housing demand decreases. Moreover, prices of investment preferences excluding housing affect the demand. Housing demand for investment is affected by the changes in the prices of other investment tools. An increase in the prices of alternative instrument leads to increase the demand for investment housing (Durkaya, 2002) (as cited Öztürk & Fitöz, 2009). Additionally, Tax policy of a country affect the fixed costs related with housing. The research of Attanasio et al. (2012) showed that home ownership increase with a lower fixed cost. For example, a lower transaction costs lead to rise the housing demand.

The second economic factor is income and income distribution. Household income level is an important factor affecting housing demand. Since, ability to pay is determined according to the income. How much income growth increases housing

demand are explained by the income elasticity of housing. There are many researches which analyze the relation between housing demand and income level (Lee, 1963; Winger, 1968; Maisel, 1971; Carlier, 1973; Hausman & Wise, 1980; Elder and Zumpano, 1991; Ermisch, 1996; Tiwari, 1999; Fontenla and Gonzalez, 2009; Abar & Karaaslan, 2013, Lebe & Aktaş, 2014). In conclusion, considering all of these, there was positive relation between housing demand and income. In other words, income has a significant impact on determining housing demand. It was said that there is a positive relationship between income and housing demand. Another factor affecting housing demand is the distribution of income (Öztürk, Fitöz, 2009; Berisha et al., 2018) Differences between the high-income group and the low-income group also differentiate the housing demand. In case of increasing inequality in income distribution, both housing supply and housing demand become heterogeneous.

The third economic factor is housing finance system and mortgage rates. Different results have been obtained in the studies on the effect of interest rates on housing demand in literature. According to some researchers, the interest rate has no effect on housing demand (Painter and Redfearn, 2002; Dokko, 2011; Kuttner, 2012) on the contrary, according to the others it has an effect on demand by negativelly (Fair and Jaffee, 1972; Fontenla and Gonzalez, 2009; Lebe&Aktaş, 2014).

The fifth economic factor is housing demand with return expectation, investment purpose. Housing demand for investment purpose is much higher in developing countries such as Turkey because housing is seen as a means of assurance and this situation can create demand in housing market (Jin and Zeng, 2007; Cao, Chen and Zhang, 2017; Yamashita, 2003; Nguyen, 2013; Öztürk, Fitöz, 2009; Selim, 2009).

2.2.1.2. Demographic Factors

The demand for housing is associated with the structure of the demography in a country. In other words, the structure of the demography has various impacts on the housing demand unavoidably. Population, population growth, age distribution, gender, marital status, education level, household size, household distribution by type,

neighborhood characteristics, race/ethnicity, nativity/citizenship status, life expectancy and housing preference were examined as a demographic factors in the literature (Martin, 1966; Mankiw and Weil, 1989; Elder and Zumpano, 1991; Ermisch, 1996; Sirgy, Grzeskowıak and Su, 2005; Green and Lee, 2016; Attanasio et al., 2012; Hiller and Lerbs, 2016; Eichholtz & Lindenthal, 2014; Fonrenla & Gonzalez, 2009).

Additionally, another factor determining the demand for housing is migration and urbanization (Öztürk, Fitöz, 2009). The developing economic activities in the region will bring the urbanization process together and provide a suitable environment for new migration. With the increase in urbanization rate, it is expected that there will be new housing demand.

2.2.2. Housing Supply and its Determinant Factors

The total amount of goods produced by all manufacturers in full competition conditions constitutes the supply in the market (Türel, 2012b, p.291). In this study, factors determining housing supply are examined under two main heading which are economic factors and government housing policies.

2.2.2.1. Economic Factors

The economic factors are prices, interest rate and housing loan. The first is prices. Both housing prices and the construction costs affect the housing supply. The information that housing prices will increase or decrease will determine the direction of housing production. In addition, housing construction costs affect housing prices, and housing prices naturally affect housing supply (Öztürk & Fitöz, 2009; Ball, Meen & Nygaard, 2010; Wang et al., 2012). Any change in the prices of construction materials may affect the price (Topel and Rosen, 1988; Grimes and Aitken, 2006; Ball et al, 2010).The second is interest rates. According to Topel and Rosen (1988), interest rates and expected inflation have a strong impact on supply. Increased interest rate reflects on housing supply negatively.

2.2.2.2. Political Factors

In addition to economic factors, housing policies are one of the significant factors determining housing supply (Kim, 2002; Ball et al, 2010; Yan, Ge and Wu, 2014; Glaser and Gyourko, 2002; Nordvik, 2006). There can be two kinds of incentives. Incentives with direct impact on consumers are called demand-side policies. These incentives have an effect of increasing the purchasing power of housing. After all, the purpose of these policies is to increase housing demand. Housing bill, certificate, deduction of taxes and mortgage interest rate from income can be given as an example for the incentives. Increased housing purchase power due to the incentives to increase demand will create an increasing effect on housing prices. Increased prices will affect the housing supply, depending on the price elasticity. If the distribution of demand-side incentives is directed towards non-residential households, it will increase the supply of housing by increasing the prices of competition in order to have housing (Nordvik, 2006). The incentives given directly to house producers are called supply-oriented housing policies. Public housing projects, incentives given to private housing producers, project-based rent incentives for land owners, and tax advantage to housing producers can be given as examples of these incentives (Dipasquale, 1999). Poterba (1984) claimed that both supply-side and demand-side policies increase the housing stock and their effects are delayed on stocks.

The housing vacancy is the result of disequilibrium between housing supply and housing demand. In this context, housing vacancy can be caused by a factor/factors determining housing demand or supply (or a combination of factors). In the light of all the determinants factors of housing demand and supply mentioned above, academic studies related with residential vacancy and its possible reasons will be examined in the next section.

2.3. Housing Vacancy

In some countries, definition of vacant housing varies with respect to countries (Housing Statics in the European Union, 2004). Vacant housing refers to a unit of

residential accommodation that is empty at a given time (Vakili-Zad & Hoekstra 2011). Gu and Asami (2016) stated that vacant residential house means the residential house without households living in including the houses for rent and for sale, second dwelling and the other such as derelict house.

In basic economic theory, there are a downward-sloping demand curve and an upward-sloping supply curve. The equilibrium in the market is the point where demand and supply meet (Saylor Academy, n.d.). The equilibrium price and quantity of a good changes with shifts in these curves, but when there is decline in demand, the quantity of housing units does not fall due to durability of housing (Molloy, 2016). Glaeser and Gyourko (2005) model the relation between the durability of housing and supply curve (Figure 2.1). According to the figure, when the demand of housing decreases, the housing equilibrium price falls (from point A to point B), and in the same time the number of occupied units do not change in the market. However, some occasion in the housing market try to prevent the price of housing from falling. Owners can increase value of their property and some cannot sell property because it is not the price they want. The price of housing will end up somewhere between point A and point B due to these frictions. As a result of that, the quantity of occupied housing will decrease below its initial level. The difference between Q and Q' is the difference between the initial and final quantity of occupied housing (Molloy, 2016). In other words, it is vacancy. In simple terms, vacancy occurs when housing demand falls below supply (Molloy, 2016).

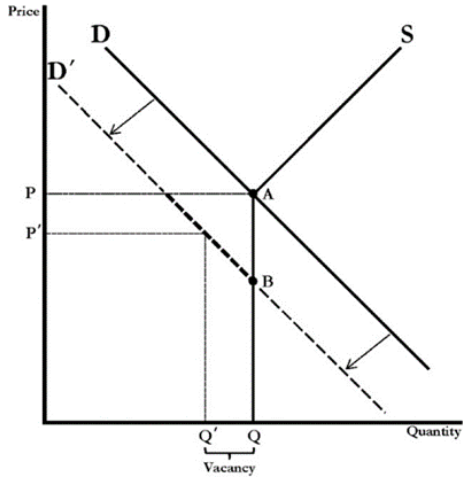


Figure 2.1. The relation Supply Curve and Vacancy

(Source: Glaeser and Gyourko, 2005)

The vacancy rate should be at a certain rate for the equilibrium of the housing market. However, required rate is not zero because a certain level of empty stock is seen necessary in the market, it is at 4-6% (Özdemir Sarı, 2015; Thalman, 2012; Gu & Asami, 2016). Housing vacancy rate can be defined as the share of the number of vacant units in the housing market at any time in the total housing stock (Özdemir Sarı, 2015). In other words, housing vacancy rate is the ratio of empty housing stock to total housing stock as displayed below:

Vacancy rate = Vacant dwelling units / Total dwelling units

Considering that the number of vacant dwelling units is equal to the difference of total dwelling units and the number of existing households, Wheaton (1990) express vacancy rate as:

Vacancy rate = 1 – (Households/Units)

Simply, housing vacancy excluding the natural vacancy can be attributed to oversupply of housing and low demand. Molloy (2016) stated that long-term vacancy rate is defined as the inability of housing supply to adapt to changes in housing demand. On the other hand, in addition to the disequilibrium between demand and

supply a dwelling may be kept empty for seasonal use, occasional use or for speculation purposes intentionally.

The housing vacancy rate has been a subject to academic research in many respect. In generally, estimation of the natural vacancy rate, influencing factors of natural and actual vacancy rate, the relation between the rental market and the vacancy rate are the main subject in the housing vacancy studies.

Guasch and Marshall (1983) stated that vacancy rates, frequencies and duration in a housing market will be affected by such features as tenant mobility, size of housing unit, and number of units in the structure. Therefore, these cannot show uniform characteristics across a housing market.

Rosen and Smith (1983) developed the natural vacancy rate concept and confirmed the effects of vacancy on rents. Their study demonstrated that excess demand and supply conditions in the housing market have an influence on the price adjustment in rental housing. The actual vacancy rate showed variations due to variance of the natural vacancy rate specific to each city. Indications of their empirical analysis result are expressed as follow. In areas where there is a higher degree of turnover the natural vacancy is higher than others. In areas where there is a greater rents dispersion, high natural vacancy was seen. Natural vacancy rates is higher in areas where there is rapid construction.

Gabriel and Nothaft (2001) derived and modelled the incidence and duration of rental vacancies and examined their importance on price adjustment mechanism for rental housing. According to their findings, duration is affected by measures of MSA housing cost and housing stock heterogeneity; incidence is influenced population mobility, public housing availability, and population growth. It was stated that apartments that are removed from the rental stock have generally higher vacancy rate and duration because of their low quality and poor physical or locational characteristics. It was anticipated that duration of vacancy will be high in those metropolitan areas where there is great diversity in rental units' types. Age, size

distribution, physical characteristics and location of the stock were used to be measures.

Hagen and Hansen (2010) examined the Seattle metropolitan area in order to test natural vacancy hypothesis for rental housing by using 1989-2005 data. The estimated vacancy rate was 5.64%, and it decreased to 4.25% by September 2005. According to their findings, vacancy rate for apartments has different value for different geographic subareas in time, and the natural vacancy rate shows decrease which can be related with Web over time. Mobility of renter population, percentage of new construction and level of diversity of available apartments can differ across geographic subareas. They defined rental housing market on the basis of apartment type and it was stated that natural vacancy rates may vary according to the mobility characteristics of demographic groups. The combined impacts of the many factors which affecting incidence and duration of vacancies has an effect on variation of natural vacancy rates across geographic subareas. Hagen and Hansen (2010) stated that the vacancy rate related with rental housing market provide significant information for investors, lenders and other real estate professionals.

Wheaton (1990) developed a simple matching model that related with vacancy and market prices. The model showed that when vacancy was altered (by small changes in supply and demand), it have considerable influence on market prices.

Vakili-Zad and Hoekstra (2011) studied the relation between high housing vacancy rate and high housing prices in Malta by using data in1995 and 2005. They examined the vacant dwellings and stated that the majority of them were in good state. It can be expected that the price of housing decreases due to high housing vacancy rate. However, both the housing prices and the vacancy rate have been increasing consistently because Malta government's housing policy promotes new housing building. According to Vakili-Zad and Hoekstra (2011), the state, the family, the powerful church, the underdeveloped financial market conditions and male-dominated culture cause this situation which is against the law of supply and demand. Housing

policies in Malta was established according to considerations of two dominant political parties. Homeownership is seen as a family insurance against social risk by the Maltese. This idea creates a situation in which housing are built and bought for investment purpose or speculation rather than meeting housing need. This kind of situation can lead to increase in housing production rate and high vacancy rate. Thus, high house prices are caused to be unavoidable.

Couch and Cocks (2013) studied the relation between housing vacancy, shrinkage and policy responses to vacancy in Liverpool. They tried to identify various type of vacancies in urban housing market and their causes. They stated that there is a relation between housing vacancy and shrinking city. The causes of shrinkage were discussed. These are regional economic differences, suburbanization, and internal demographic change. It was stated that structural housing vacancy occurs due to change in the characteristics of the demand for housing, or to different locations or to different types of housing, size or tenures. Moreover, dwelling types and tenure affect the structure of housing demand. It was stated that vacancy rate in the private rented sector is higher than owner occupation and social renting. The rate of housing vacancy influenced by decreased population, location, dwelling form, tenure, price and policies. The vacancy concentrated on in certain inner urban areas of social housing and poor quality private housing and some peripheral social housing estates in Liverpool.

Nadalin and Igliori (2017) examined the determinants of vacancy rate, especially in historical city centers in Sao Paulo where there is many vacant spaces including residential building. According to their results, three main groups can be determined; (1) individual building characteristics, (2) mobility of households, (3) neighborhood quality. It was claimed that there is a distinctive submarket for the historic central city because it showed different features compared to whole city, and the submarket needs particular urban policies.

Jensen (2017) said that housing vacancy is a significant problem for many municipalities, and it should be approached with strategic planning. It was founded

that the main reasons of vacant housing in Denmark are job losses, change in the agricultural sector, and centralization of public functions. The case study in Denmark showed that there are number of challenges related to managing vacancy. Limited funding, time-pressure, no national facilitation, new discipline and lack of resources and competences are the barriers for planning.

Huuhka (2016) offered new view for vacancy in Finland and examined the relations between the housing stock, vacancy and demolition. It was claimed that there is a relation between vacancy and (1) demographics; (2) location; (3) size of housing stock; (4) building type; and that vacancy is not straightforwardly related to (5) building age; or (6) demolition.

Kwoun and et al. (2013) developed diagrams and simulation in order to analyze the dynamic cycles of unsold new housing stocks, housing investment, and housing supply-demand. According to the simulation results, the mismatch between housing demand and housing supply is the reason of unsold new housing supply. It is claimed that housing policies and investment decisions can be made by governments and developers according to unsold new housing stock. The variable in their model classified as follow:

1. Economics: Employment, Production cost, Interest rate, Economic growth rate, Household income change rate
2. Policy: Demand control policy, Supply control policy
3. Housing Supply: Housing stocks, Construction cost, Housing price
4. Housing Demand: Household income, Mortgage, Desire in housing improvement, Housing price

Gu and Asami (2016) provided a new empirical view for the vacant houses by calculating the optimal vacancy rate in Tokyo. An optimal vacancy rate maximizes the landlords' return expectation with the optimal list rent strategy and the optimal vacancy rate shows differences based on the market situation, types of the landlords and tenants' behaviors.

Lee and Newman (2017) developed GIS-based urban land use change model in order to predict future urban growth/decline patterns in municipal level. The city of Chicago, Illinois was used as a case study to test the land transformation model. Local policy makers and developers can make decisions in order to manage future urban decline, vacant land and abandonment. The driving factors in the model is listed as follows: % of unemployment, % of second industry, % of service industry, household income, education, poverty, minority, crime/pop, ownership, housing value, mobile homes, vacancy, pop.change, parcel size, deteriorated buildings, proximity to railroads, proximity to highway, vehicle accessibility.

Struyk (1988) examined the causes of high housing vacancy rates in Jordan. According to the study results, three main factors can be attributed to high vacancy rates. These are (1) family members who are not working in the country, (2) housing which being kept empty or being used for other purposes, and (3) housing built for speculative reasons.

Wood and et al. (2006) examined Adelaide and Sydney and stated that vacancy rates in the low rent housing are higher than high rent housing. Vacancy patterns, turnover of tenancies and survival rates of properties were examined.

Zhang (2017) said that high vacancy rate is seen in shrinking cities in general due to economic and population related reasons. However Japan's housing vacancy is different from the typical shrinking cities, and the vacancy rate in 2013 is 13.5%. According to the Zhang study, the reason of the high vacancy rate across the country is that the central government chose housing development for economic stimulus. Housing production has significant ripple effects into other industries which related directly or indirectly with construction sector. In other words, it provides capital circulation and boost economic growth.

Niner (1999) found that in the owner-occupied sector, decline in prices, low turnover and high dwelling vacancy lie behind low demand. In order to identify high vacancy in neighborhoods, in streets and dwellings, some general analysis such as global

economic trends and regional dynamics and some local analysis such as urban population trends, households' behavioral patterns are required. Additionally, in the owner-occupied sector, low demand is recognized by a decline in prices, low turnover and large numbers of vacant dwellings (Niner, 1999).

Vacancy shows different patterns and values in terms of country and context. Geographical location, building type and tenure are the main factors for vacancy patterns (Huuhka, 2016). While Mukkala (2002) said vacancy affects the peripheries in Finland (as cited from Huuhka, 2016), there are vacancies in city centers in Belgium (Norris & Shiels, 2004, p. 23) In Slovakia, vacancies are seen generally in detached houses (Norris & Shiels, 2004, p. 73), however in Germany vacancies focus on suburban blocks and historical multi-storey dwelling (Glock & Hausermann, 2004; Deilmann, Effenberger, & Banse, 2009). While in Italy, vacancies generally occurs in the southern and rural part of the country (Norris & Shiels, 2004, p. 51), in the US, occurs in the south. Zhang (2017) stated that the vacancy rate values are around 2.5% in the UK (Couch and Cocks, 2013); between 3% and 5% in Eastern Germany (Glock and Häußermann, 2004); about 5% in the US; 1% -1.5% in Swiss (Thalmann, 2012).

2.4. Conclusions of the Literature Review

Housing vacancy is a remarkable issue economically and socially due to its significance on planning so that necessary importance to housing policies and their implementation should be given. The housing vacancy rate is used as an important input for the elimination of the disequilibrium between the housing supply and demand or housing need according to the shortage and oversupply (Özdemir Sarı, 2015). In the case of lack or excess, necessary interventions might be done because housing vacancy is a problem for citizen from every segment. Couch and Cocks (2013) summarized some problems of high level of housing vacancy. A particular investment were made a dwelling and leaving the dwelling vacant will cause the investment to be wasted. It means that the economic resources are wasted (Han, 2014; Huuhka, 2016). For landlords, vacant dwelling means loss of income and rising of

management costs in looking for new tenants, keeping the housing secure, and so on. For owner, vacant housing loses capital value while waiting for the buyer. For a neighborhood it means to be increased level of vandalism and crime, and decreasing impact on values of local property and amenity (Couch and Cocks, 2013). Molloy (2016) added that there is renovation cost in order to reuse vacant housing. Apart from high level vacancies, when there is housing shortage in the market, housing options for households that need new housing are reduced. It is estimated that in scarcity conditions demand of housing can increase, which may lead to increased housing prices or rents. Apart from these, monitoring housing vacancy rate is also important for making prediction about direction of housing markets. Hagen and Hansen (2010) stated that the vacancy rate related with rental housing market provide significant information for investors, lenders and other real estate professionals. For example, some predictions about future rent movements are obtained by comparing the natural vacancy rate and current vacancy rate. The return on property investment is influenced by the rate level. In conclusion, the issue of vacancy can be an important guide in the implementation of the plans specific to the locality. In this context, residential vacancy has to be considered on a preferential basis and simply, the housing vacancy rate has to be monitored to obtain a healthy urban development.

As mentioned above, vacancy is simply a result of disequilibrium between demand and supply, and the factors affecting the housing vacancy were examined from different aspects and reasons of housing vacancy are not always expressed by the same variables. Some of the variables taken as the main determinant that can cause the disequilibrium are as follows:

- Demand determinants: prices, income, mortgage rates, demographic structure (the number of households, age, population growth, household mobility), physical characteristics of housing unit (size, location, number of rooms), the number of housing stock
- Supply determinants: prices, rates, political factors

In this study, these main determinant form the basis for input to determine the general housing situation in Turkey (Chapter 3) in terms of supply, demand and vacancy. The purpose of this is to reveal the importance of the concept of vacancy in Turkey. In the first step of the case study (Chapter 4), Wheaton's (1990) vacancy formula is used to estimate residential vacancy rate, so that only the number of household and the number of housing stock are used as input because of data limitations. The formula has been revised as follows:

The number of residential housing stock= the number of total housing stock - the number of households

The estimated vacancy rate=the number of residential housing stock / total housing stock

In academic studies, natural vacancy rate, housing stock status and its share in total, causes of vacancy, effects of high and low vacancy rates on economy and city are discussed. In generally it was emphasized that there is a relation between the concept of housing vacancy and rents, condition of demand and supply, new housing constructions, population, employment, income, economic growth, housing policies. According to the mentioned studies, vacancy rate is mostly high in areas where rent dispersion is various. Moreover, the optimal vacancy rates in different countries or regions were studied. The formation of collapse areas in the city, the decrease in demand due to the quality of housing, additionally, changing housing expectation or economic inability to afford a house can be reason of low demand. Excessive housing production are presented as the reasons for high vacancy rates. It is stated that the rate of this vacancy pattern is influenced by decreased population, location, dwelling form, tenure, demographic groups, price and policies. The existence of residential vacancy patterns can be supported in the light of mentioned academic studies, and vacancy samples in researches are considered as examples to find the pattern differences in the case study because it can be said that there are several reasons for vacancy patterns variations.

Considering reasons of vacancy patterns in the literature, some indicators that can differentiate vacancy pattern and are planned to be examined in the second part of the case study are:

- Whether the neighborhood is old/new
- Whether there is suitable land for housing development
- The use of neighborhood (summer houses or residential, etc.)
- Existing situation of social infrastructure and physical structure of housing to understand the excess or low demand
- Whether the neighborhood is far from the city center
- The number of houses for sale and rent

CHAPTER 3

HOUSING SECTOR IN TURKEY AND ITS GENERAL CHARACTERISTICS

3.1. The Significance of Housing Sector in Turkey

A house has a number of generally accepted characteristics which are independent of the country where it is located. Eight main characteristics can be given example (Odabaş, 2011). The first characteristic is fixed position. The second is heterogeneity. The third is being both investment and consumption goods. The forth characteristic is longevity. The fifth is high transaction costs. The other characteristic is long-term liabilities. Another characteristic is large transaction volumes and indivisible. The last is long production process.

One of the most important indicators of development is urbanization. Urbanization has many criteria including housing (Çetin, 2012). In addition to the economic impact of the housing sector, it has social and cultural effects (Uysal & Yiğit, 2016). It can be said that there is a relationship between housing market and development. In other words, the regulations in the housing sector also affect socio-cultural structural elements such as poverty, education and crime. Çetin (2012) claimed that housing is national identity because it is a reflection of the country's development, income level, social structure and industrialization. Housing plays an important role for the country both economically and socially. This is the result of its unique features. Its economic and social contributions should not be considered independent from each other. Moreover, it is said that social and economic development in a field is the result of intensive housing construction in that area (Aydın, 2003; Eşkinat, 2012; Kara & Palabıyık, 2009).

As mentioned earlier in this study, the characteristics given above differentiate the house from the other goods in the market. Due to these atypical features, housing plays

an important role for countries both economically and socially. Apart from housing needs, housing is important for the province, region and country where it is located in terms of its economic effects. The significance of housing in the economy is the result of many factors coming together.

Firstly, investments in the housing sector directly or indirectly affect other sectors that are related to the housing sector. The high added value of the housing sector, the increase in employment, and a strong relationship with other sectors have brought the housing sector to a leading position (Bon, 1992; Öztürk & Fitöz, 2009; Balaban, 2011). Elliot (1992) said that the five main industrial sectors constitute the input products of housing production (as cited from Çınar, 1999). These are products of stone-soil industry, products of wooden industry, metal industry products, products of concrete industry and chemical industry. In the simplest term, these five sectors are needed for housing production. Dücan and Güğerçin (2016) have found that the difficulties that can be experienced in the housing sector can directly affect different sectors. Thus, positive or negative movements in the housing sector cause significant changes in national income and welfare. From this point of view, a growth or shrinkage in the housing sector has an effect on the gross national product (Öztürk & Fitöz, 2009). In Turkey, the share of construction sector in Gross Domestic Product (GDP) was 10%, the share of real estate activities was 8% in 2017. Construction and real estate can be considered one of the important sectors for Turkey's economy. As can be seen from Figure 3.1 the construction sector was ranked as the third, the real estate activities was ranked as the fifth in 2017. The housing sector also affects the demand for other goods related to housing, such as furniture, domestic appliances and home textiles (Keleş, 1983, p.125; Öztürk & Fitöz, 2009). Research displays that a large part of household income is spent for housing, which means that part of the wealth created in the country is kept in the housing sector (Özlük, 2015; Bekmez & Özpolat, 2013b).

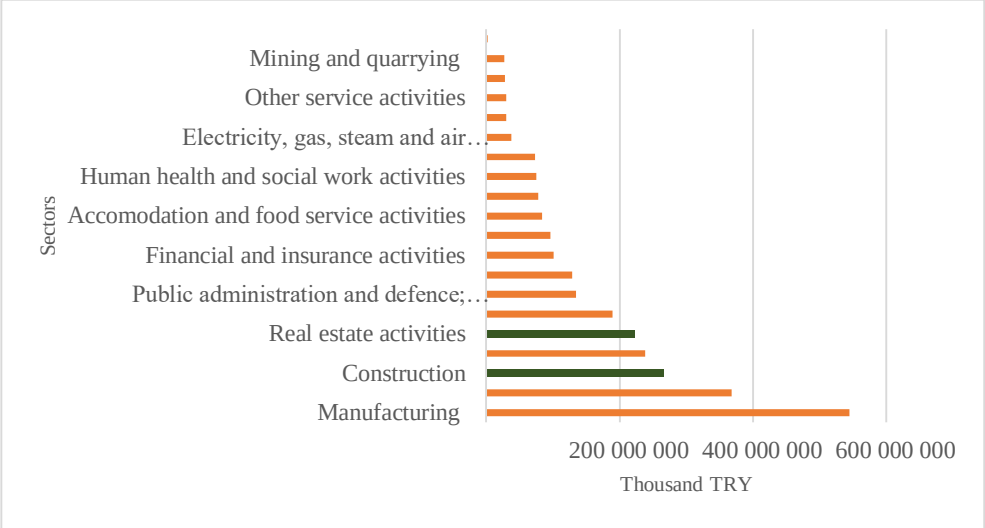


Figure 3.1. Gross Domestic Product of Sectors in Turkey (2017)

(Source: TURKSTAT, Annual Gross Domestic Product, 2017)

According to the countries' development level, housing investments vary. As urbanization and industrialization have reached to a certain level in developed countries, it is not necessary to make a choice in the investments to be allocated for housing. However, developing countries need to investment in both for urbanization and industrialization. In this case, a preference should be made for investments in housing. Because the capital accumulation process in these countries is not fast. In order to accelerate and develop industrialization, they need to reduce housing investments and find a way with less costs for urbanization (Tekeli, 2009, p.105).

The share distribution of gross fixed investment in the housing sector in Turkey is given in Figure 3.2. According to The Department of Strategy and Budget, the share of the public sector in the housing investments in 2019 is planned to be 1.6% and the private sector's share as 31.7%. Looking at the order of these shares within other sectors, housing ranks seventh in the public sector's investments and second in the private sector's investments. The share allocated to housing investments in the private sector between 2007 and 2019 is included in the top three in each year.

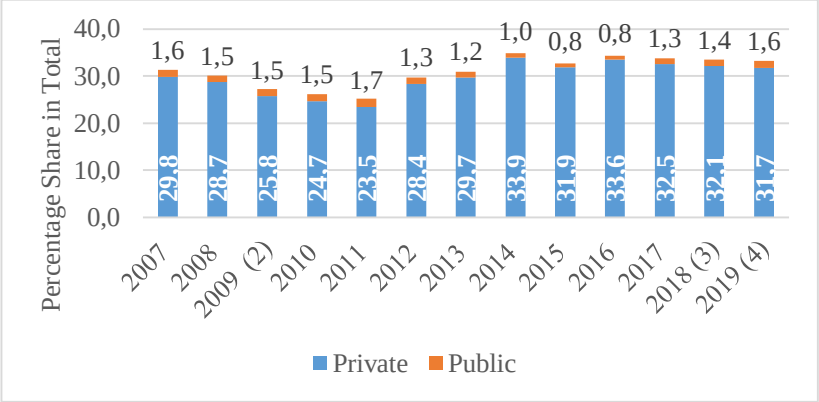


Figure 3.2. Gross Fixed Investments in the Housing Sector- Percentage Share in Total[(1)]

[(1) At Current Prices, (2) 2009=100 Chained Volume, (3) Realization Estimate, (4) Programme]

(Source: The Department of Strategy and Budget (2019), Basic Economic Indicators, Gross Fixed Investments by Sectors)

In addition to the GDP, housing sector can be associated to inflation, interest rates, financial assets, investment and unemployment (Uysal & Yiğit, 2016). The sector's contribution to employment, which is mostly met by the domestic workforce, also increases its economic importance within Turkey. Moreover it was claimed that people who quit their job in the agricultural sector are involved in employment in the construction sector (Keleş, 1983, p. 8). As investment in the housing sector increases, employment also increases both in the construction sector and other housing-related sectors (Sarı, Ewing & Aydın, 2007). Increased income as a result of increased employment creates a multiplier effect and it can lead to increase housing demand. When considered from this point of view, it can be stated that future housing investments depend on employment (Sarı, Ewing & Aydın, 2007). The share of the construction sector in total employment was 5.6% in 2005, 7.4% in 2017 and 6.9% in 2018. According to years, construction sector employment values are shown in Figure 3.3. Employment in the construction sector is increasing in general.

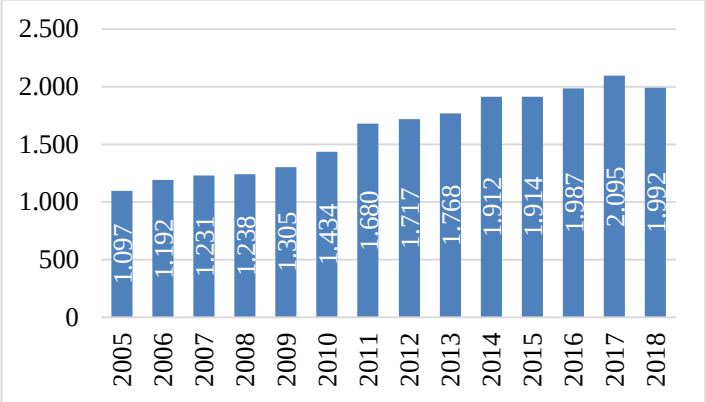


Figure 3.3. Employment in the Construction Sector by Years

(Source: TURKSTAT, Labour Force Statistics)

Another point that makes housing significant for the economy is that, in developing countries, in a high inflation environment, housing is seen as a tool to overcome the effects of inflation. For investors, housing is a mean of protection against uncertainty in inflation in order to preserve the value of capital (Öztürk & Fitöz, 2009). Housing is seen as an alternative asset against other investments, since the state has significant investments and incentives for housing. Residential investments can provide high profits. In other words, in long-term, price increases in housing investments can be achieved. In addition to this increase, tax advantages and being insured provide a risk-free investment tool (Öztürk & Fitöz, 2009). Unless the housing is demolished, it will meet a basic need, such as shelter, and other investment tools cannot provide the confidence and regular income of the housing. Thus, it is different from other investment tools (Aydın, 2003). Coşkun (2016) analyzed the investment tool perception of housing theoretically and on case study. The results of the research basically are that (1) housing could be lucrative goods in Turkey; (2) real return of housing may vary due to time period and index.

3.2. Housing Supply and Demand in Turkey

It can be said that housing must be explained in terms of demand and supply in order to understand the concept of housing vacancy and causes of the vacancy in Turkey. In

the following section, the factors affecting the housing supply and demand in Turkey have been put forward.

3.2.1. Determinants of the Demand for Housing in Turkey

There are many factors affecting the demand for housing in Turkey. These factors can be examined under two main topics as economic and demographic determinants.

3.2.1.1. Economic Determinants

3.2.1.1.1. Prices

Housing Prices

Price is included in all demand functions as one of the factors affecting the demanded quantity of a good or service (Durkaya & Yamak, 2004). It has been shown in the academic studies that housing prices affect housing demand. If housing prices increase, housing demand decreases, and if prices decrease, housing demand increases financially. Studies have been conducted in terms of the analysis of the demand for housing in Turkey.

Bulut (2009) examined demand and supply of real estate market in Turkey from 1970 and 2007. Topel and Rosen's (1988) demand and supply models were chosen. Interest rate, value variable, income and population were used for demand side; value, interest rate and costs were used for supply side. According to the research, the price elasticity of demand in long-run is -4.97. The meaning is that when there is a 1% increase in prices, there is a 4.97% decrease in the demand for housing.

Durkaya and Yamak (2004) examined the demand side of housing market in Turkey between 1964 and 1997. The used data are as follows: number of housing, income per capita, consumer price index, costs, population, average cost of real housing unit, number of married couples, number of divorced couples, employed in agriculture, industry and service sectors. The price elasticity of housing was found to be between -0.03 and -0.10. Lebe and Akbaş (2014) analyzed housing demand in Turkey between 1970 and 2011. Per capita income, housing price, interest rate, industrialization,

marital status, employment in agriculture and industry were used as data. The negative relation was observed between prices and demand. Uysal and Yiğit (2016) studied determinants of housing demand in Turkey between 1970 and 2015. The used data are as follows: Number of buildings that have permission to use residential buildings, national income per capita, urbanization rate, monetary size, interest rates, consumer price index, DUMMY variable for financial crises (in 1994,2001, 1998, 2009). They argued that there was negative relation between housing demand and consumer price index. Solak and Kabadayı (2016a) investigated the housing demand in Turkey from 1964 to 2014 with bounds testing approaches. The real price of one square meter of housing, real income level, and urban population were used as explanatory variables. They stated that there is positive relation between housing demand and prices. Solak and Kabadayı (2016b) examined the demand for housing in Turkey between 2004 and 2011 by panel data analysis. The explanatory variables were the income levels, housing prices, and population. The price elasticity was forecasted as -0.85 and -0.95 in the models. In other words, housing demand is negatively related with housing prices. Halıcıoğlu (2007) estimates the demand function for new residential homes and one of the variables to which the housing demand depends is stated as the price using the time series data from 1964 to 2004. The total units of private houses, the real household disposable income, the real average unit cost of dwelling, urbanization rate index were used as data. The price elasticity was found to be -0.2.

Öztürk and Fitöz (2009) tried to reveal the determinants of housing supply and demand in the housing market through bilateral analysis. The building use permit documents for various years were used as housing demand and the building license permit documents were used as indicators of housing supply. Different from mentioned researches, according to the study conducted by Öztürk and Fitöz (2009), there is a positive relationship between housing prices and housing demand in Turkey. Normally, a negative relationship is expected between housing demand and housing prices. This positive relationship is explained by Turkey's inflation environment. In

this context, housing is considered as an investment tool. Housing is considered as a defense mechanism against inflation.

In Figure 3.4 shows that the housing price index, which increased by 1.57 percent compared to May 2018, decreased by 14.44 percent in real terms in the same period in May 2019. In figure there is a breaking point in 2017. The point can be explained as follows. Since 2000s it has been seen high housing production in Turkey. However, housing prices did not fall despite high housing outputs until 2017 (Özdemir Sarı, 2019, p. 168). IMF (2017) implied that there can be housing bubble in Turkey by examining nominal and real house prices, demographic and socio-economic factors and sales campaigns (URL5). Özdemir Sarı (2019) stated that since the mid-2017 although housing transactions were encouraged with policies, increase in nominal house prices have started to slow down, real prices have begun to decline. In 2018, when Turkey is on crisis environment, the public agencies start housing campaigns considering crisis' negative effects on housing sector and construction activities. In this context, the following comment can be made: The rising prices until 2017 experienced a significant decrease in 2017 signals the housing vacancy.

Durkaya and Yamak (2004) estimated cost elasticity of demand for housing. It was between -0.18 and -0.51. The increase in housing costs has a decreasing effect on housing demand. Lebe and Yiğit (2009) found that housing cost elasticity was 0.075 in short-run, 0.141 in long-run (as cited from Lebe & Akbaş, 2014).

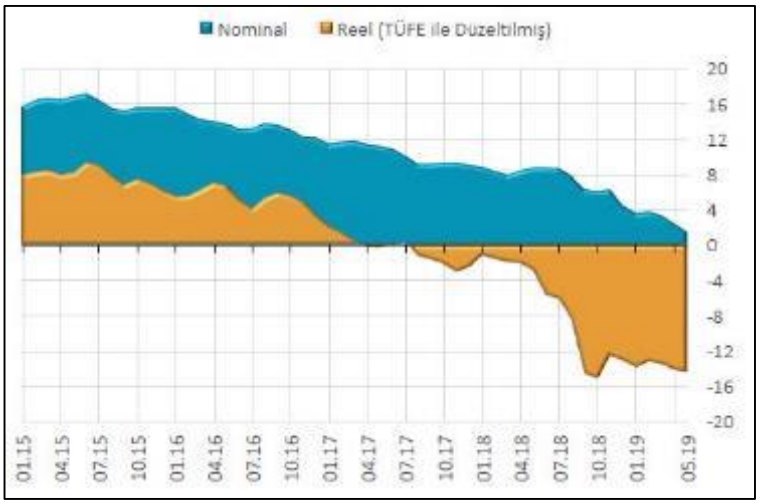


Figure 3.4. Housing Price Index-Percent Change in Turkey

(Source: The Central Bank, May, 2019, URL6)

Demand is influenced by the prices of other investment instruments in addition to housing prices (Durkaya & Yamak, 2004). The increase or imbalance in alternative investments has an increasing impact on housing demand.

3.2.1.1.2. Income

The amount of income in housing demand analysis is an important variable because it refers to the purchasing power of households. Moreover, it was claimed that the income level of Turkey was the most important determinants influencing the housing demand (Solak & Kabadayı, 2016b; Halıcıoğlu, 2007).

Studies have been conducted in terms of the analysis of the demand determinants for housing in Turkey. The academic studies on the relationship between income and housing demand can be summarized as follows. Bulut (2009) found the income elasticity of demand to be 10.28 in the long-run. In other words, if the income of a household rises by 1%, the housing demand rises by 10.28%. This means that the amount of housing demanded increases when households' money situation is good. Durkaya and Yamak (2004) calculated that the income elasticity of the demand range between 1.9 and 3.8 in 1964-1997. In other words, there is positive relation between

them. Halıcıoğlu (2007) estimated the income elasticity to be approximately 1. Lebe and Yiğit (2009) estimated that the income elasticity to be 0.29 in short-run and to be 0.321 in long-run (as cited from Lebe & Aktaş, 2014). Öztürk and Fitöz (2009) estimated the income elasticity is in between 1 and 2. The results of Bekmez and Özpolat (2013a) study supported the permanent income hypothesis. According to the continuous income hypothesis, individuals do not change their consumption due to their temporary income. The income elasticity in short-run is inelastic and in long-run is elastic because consumption is determined by continuous income. According to the results of the Bekmez and Özpolat (2013b) study, the most important variable affecting the housing demand of individuals is national income per capita. This variable, which is effective both in the short term and in the long term, is directly proportional to the demand for housing. As national income per capita increases, individuals demand more housing. It is claimed that the variable that has the most effect on the factors affecting housing demand is income (Uysal & Yiğit, 2016). In the study, national income per capita was used as variable. The coefficient for national income per capita has been calculated to be 3.59, so positive correlation between this variable and housing demand has been revealed. Solak and Kabadayı (2016b) estimated the income elasticity of demand to be 1.42 and 1.91. Abar and Karaaslan (2013) made a survey on 1959 employees in Atatürk University, and According to the results of the survey, there was a positive relationship between income and housing size demand. In conclusion, studies have shown a positive relation between housing demand and income (Güriş, Çağlayan & Ün, 2011;Bekmez & Özpolat, 2013a; Bekmez & Özpolat, 2014; Lebe &Aktaş, 2014,).

Figure 3.5 shows the relation between per capita reel GDP and annual housing production from 2001 to 2015. While the number of homes produced increases, per capita GDP also increases.

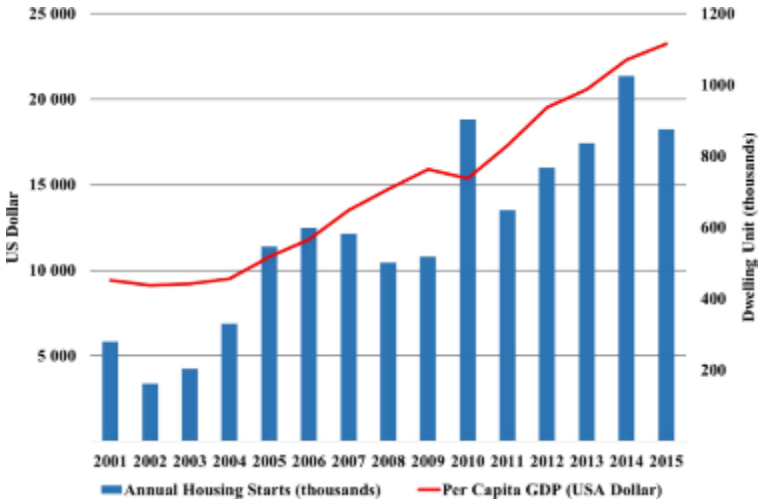


Figure 3.5. Per Capita Reel GDP (USA Dollar-left axis) and Annual Housing Production (right axis) in Turkey: 2001–2015.

(Source: Özdemir Sarı & Aksoy Khurami, 2018)

Figure 3.6 shows the housing and rent consumption of households by years in Turkey. Even though the share of these expenditures has changed over the years, the highest share in total consumption expenditures was still housing and rent expenditures between 2002 and 2017. Moreover, food expenditures in this list are in second place. In this context, it can be concluded that housing is important for households.

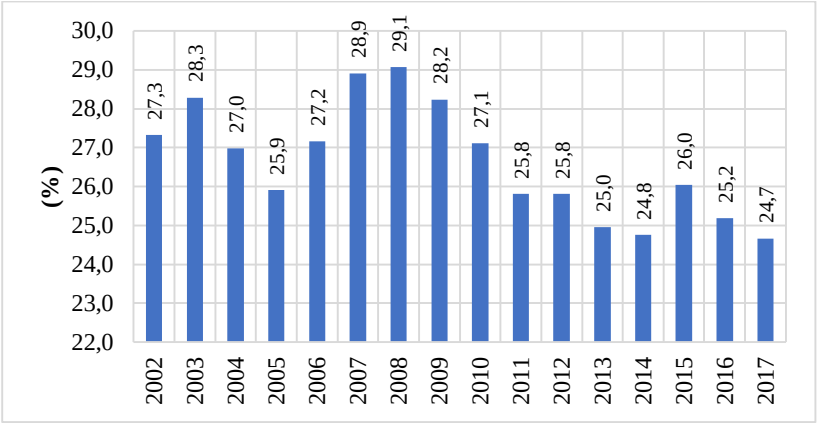


Figure 3.6. Housing and Rent Consumption of Household in Turkey between 2002 and 2017

(Source: TURKSTAT, Household Budget Survey, Household consumption expenditure by types of expenditure, Turkey, 2002-2017)

3.2.1.1.3. Rates

Another factor that can be considered under the heading of economic factors is rates. Interest rate, inflation rate, unemployment rate and stock market index were used as variables in academic research related with Turkey. These studies are briefly explained below.

Interest Rate

Another variable that determines housing demand is said to be interest rates and credit system. Loans for people who cannot get home with their savings or income is an important tool to demand housing. High interest rates adversely affect housing demand decision of people. Considering that income is the most important variable in housing demand, loan conditions for middle and low-income families are an important factor for housing demand (Solak & Kabadayı, 2016b). With appropriate loan conditions, housing sales can be increased.

Uysal and Yiğit (2016) found that positive relation between housing demand and interest rate. According to the results, the coefficient for interest rate was calculated to be 0.03. When compared to other variables, the effect of the interest rate is considered to be low. When the effect response analysis between the interest variable and housing demand was examined, the first 2 years positive effect was observed, then this effect was negative. Therefore, it is not easy to determine the exact direction of this effect (Uysal & Yiğit, 2016). Interest rate variable has positive but weak relation with housing demand (Öztürk &Fitöz, 2009).

Bulut (2009) stated that the impact of interest rate is negative. In other words, if the interest rates increase, households may have a lower probability of housing. There is negative relation between housing demand and interest rate but the interest rate has not have significant effect on housing demand in Turkey (Lebe and Akbaş, 2014; Bekmez and Özpolat, 2013b; Solak and Kabadayı, 2016b). According to the results of Lebe and Akbaş (2014), 1% increase in interest rate decreased housing demand by 0.014% in Turkey.

Housing interest rates in developing countries play an important role in the demand for housing. Individuals who do not have cash money in advance decide to buy a home based on these interest rates. The increase in interest rates imposes an extra cost to the buyer of the house. Interest rate in mortgage sales is an important issue for individuals who want to get home (Özlük, 2015). İbicioğlu and Karan (2012) analyzed the relation between the demand for housing credit and interest rate in Turkey between 2005 and 2012. As a result of the analysis, it was seen that a large part of the change in housing loan demand was explained by the change in interest rate. Berberoğlu (2009) studied mortgage system determinants in order to analyze whether the system is suitable or not in Turkey. According to study, interest rate, age, marital situation, have a child, housing prices and sexuality affect the credit demand.

The number of housing sales in turkey and percentage in total sales by years are shown in Table 3.1. In 2018, the share of mortgaged sales (%20,1) decreased significantly compared to other years. This may be due to the high mortgages rates and the inability of the household to afford the repayments.

The number of housing sales (mortgage and others) and reference housing loan interest rates in Turkey are given in Figure 3.7. It is observed that the average loan interest rates and housing sales have increased. Generally, mortgaged housing sales declined in the period when interest rates increased. It should be noted that the mortgage system finances only one third of the sales, other households still buy house with traditional methods such as saving or borrowing from the family.

Table 3.1. The Number of Housing Sales in Turkey and Percentage in Total Sales between 2013 and 2018

	Mortgaged Sales	***Other Sales***	***Total***
2013	460.112 - *(%39,8)*	697.078 - *(%60,2)*	1.157.190
2014	389.689 - *(%33,4)*	775.692 - *(%66,6)*	1.165.381
2015	434.388 - *(%33,7)*	854.932 - *(%66,3)*	1.289.320
2016	449.508 - *(%33,5)*	891.945 - *(%66,5)*	1.341.453
2017	473.099 - *(%33,6)*	936.215 - *(%66,4)*	1.409.314
2018	276.820 - *(%20,1)*	1.098.578 - *(%79,9)*	1.375.398

(Source: TURKSTAT, Housing Sales Data)

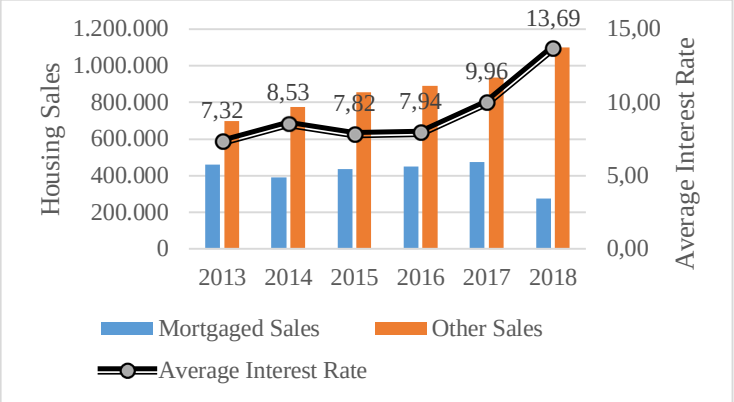


Figure 3.7. The Housing Sales and Housing Loan Interest Rates in Turkey (2013-2018)

(Source: TURKSTAT, Housing Sales Data; The Central Bank, Reference Rates and Indices to be Used in Variable Interest Housing Finance Contracts)

Other Rates

According to study of Bekmez and Özpolat (2013b), another factor affecting the housing demand is the unemployment rate. Although in the short-run unemployment had positive impact on housing demand, but it affected housing demand negatively in the long-run. Another variable effective in housing demand is the inflation rate. In the same study, a positive relationship was found between housing demand and inflation rate. The reason is that housing in countries dealing with high inflation over long periods, such as Turkey, are seen as the confident tool against inflation. On the contrary, Uysal and Yiğit (2016) found negative relation between inflation and demand, the inflation coefficient was -0.04. Additionally, demand was affected negatively by employment in agricultural sector (Solak and Kabadayı, 2016b; Lebe & Akbaş, 2014). Bekmez and Özpolat (2014) stated that housing demand gave negative reaction to inflation, however, in some geographical region in Turkey had positive impact such as Mediterranean, west black sea and center east Anatolia.

Although the stock market index did not have any effect on the housing demand in the short term, its effect increased in the long term (Bekmez & Özpolat, 2013b). Since housing and stock market are substitution instruments, the relationship between them is negative.

Uysal and Yiğit (2016) examined the relationship between housing demand and economic depression which are occurred in 1994, 1998, 2001 and 2009. They had negative impact on housing demand. It can be said that the negative consequences of the economic crisis negatively affected the demand for housing.

3.2.1.2. Demographic Determinants

In addition to economic factors, demographic factors affect housing demand. In this section, demographic title is divided into two main headings: population and urbanization. Academic studies related to demography and current status indicators will be explained.

3.2.1.2.1. Population

Demographic characteristics such as population growth, gender, age, households, education level and marital status are variables that will affect social demand in the long-run (Karakurt Tosun, 2006). Moreover, these variables are effective in the formation of social housing demand (Lebe & Akbaş, 2014). Bocutoğlu and Ertürk (1992) claimed that the most important variables affecting the housing demand was population growth in Turkey (as cited from Lebe & Akbaş, 2014). It was analyzed in researches that there was positive relation between housing demand and population, in other words, demographic factors had a significant effect on housing demand (Bulut, 2009; Güriş, Çağlayan & Ün, 2011; Solak & Kabadayı, 2016b). Apart from the number of the population, the effect of marriage on the demand was also examined in academic studies. Marital status had positive impact on housing demand (Lebe and Akbaş, 2014). Lebe and Yiğit (2009) found that population and number of married couples had a positive effect on housing demand (as cited from Lebe & Akbaş, 2014).

Arslan, Ceritoğlu and Kanık (2013) examined that the effects of age structure dynamics of population on the housing demand in Turkey. They obtained Turkey long term housing demand and housing demand for each age cohorts. According to results, the growth of housing demand influenced by population age structure addition to the population growth. It was claimed that from 2009 to 2050 housing demand will rise

1.48% annually on average. It is estimated that 1.08 per cent of the increase will be due to population growth and the remaining 0.4 per cent increase in population structure. However, Ozturk and Fitöz (2009) stated that there was unimportant relation between demand and demographic factors.

The population indicator in Turkey is shown in Figure 3.8. Despite the decrease in the rate of increase compared to the previous years, the population is increasing consistently.

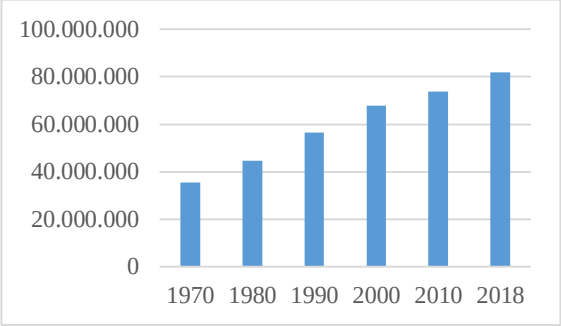


Figure 3.8. The Population of Turkey

(TURKSTAT, General Population Census, 1970, 1980, 1990, 2000; Address Based Population Registration System Results, 2010, 2018)

The number of households is given in Figure 3.9. According to the figure, the number of households is increasing by years and it tends to increase. The increase in the number of households refers to decrease in the size of the household. Therefore, according to increasing numbers in Turkey it is expected to decline in household size. In this context, when household size decreases, the demand for housing can increase.

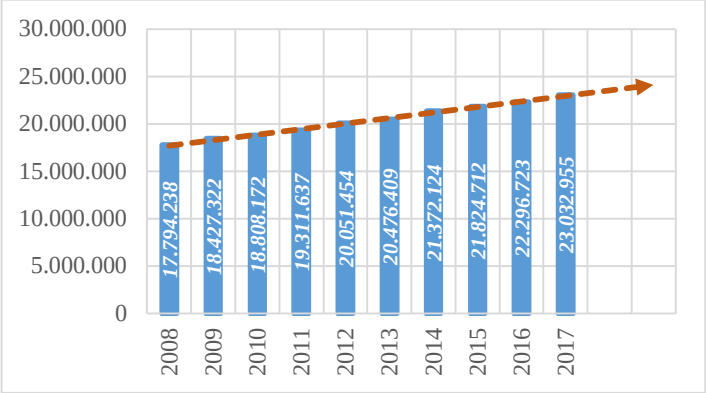


Figure 3.9. The Number of Household by Years in Turkey

(Source: TURKSTAT, Household Budget Survey)

The marital status is another demographic factor affecting housing demand. The number of marriage and divorce are given in Figure 3.10. In case of marriage and divorce, housing demand may occur. Since in case of marriage, new couple will in need of a new housing. In case of divorce, 2 separate houses may be required for the separated couples.

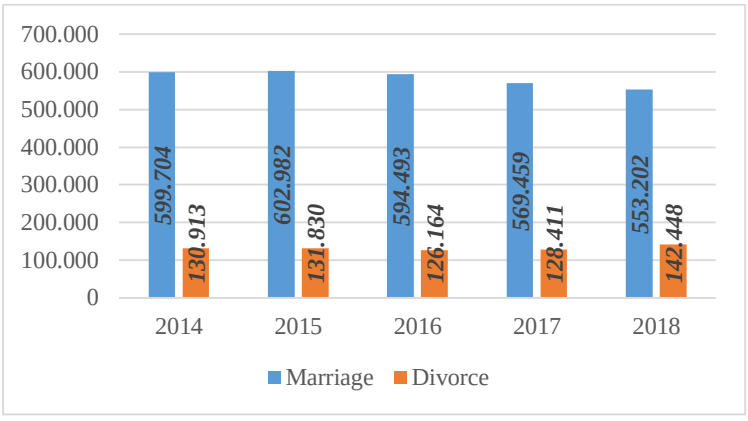


Figure 3.10. The Number of Marriage and Divorce in Turkey

(Source: TURKSTAT, Marriage and Divorce Statistics, 2014-2018)

Between the years 2014-2018, the average married couple in Turkey is 583.968 and 131.953 is the average couple divorced. Considering that every married couple needs housing, 583.968 potential housing demand is only due to the married population.

3.2.1.2.2. Urbanization

Keleş (2012) defined urbanization as a change over a period of time with its demographic, economic and socio-cultural dimensions (p. 211). The process of migration and urbanization is one of the factors determining housing demand. The urbanization process in Turkey made progress according to social, economic and political conditions (Işık, 2005). Urbanization has shown a parallel development with industrialization in Turkey. In this case, the attractiveness of the population to the cities had a great effect. The urbanization rate, which was slow before 1950, accelerated after the beginning of the migration from the countryside to the city after 1950. The urbanization triggered by the increase of the population is completed with the reflection of this situation to the space. Since the economic developments in the cities attract the population. This migration and urbanization process is clearly seen in Turkey (Öztürk &Fitöz, 2009).

The relation between housing demand and urbanization was examined in academic studies. Uysal and Yiğit (2016) found that there is positive relation between housing demand and urbanization rate. The coefficient for urbanization rate was estimated to be 1.10. Halıcıoğlu (2007) stated that urbanization is significant factor for housing demand. Lebe and Aktaş (2014) said that increased industrialization positively affects housing demand. Additionally, according to analysis of Bekmez and Özpolat (2013a) urban transformation implementations after 2010 increased housing demand by 32%. Keleş (2015, p. 212) said that urbanization in developing countries is thought to be caused by population occurring in cities as a result of migrations to the cities and natural population growth in cities. When viewed in this context villages and the urban population in Turkey it seems to be the trend in the increase of urban population.

Migration information can also be taken as an indicator for housing demand. It can be thought that the demand for housing has increased in the provinces that receive immigration, and that the demand for housing in the provinces that have migrate has decreased. Net migration information in Turkey is given in Figure 3.11.

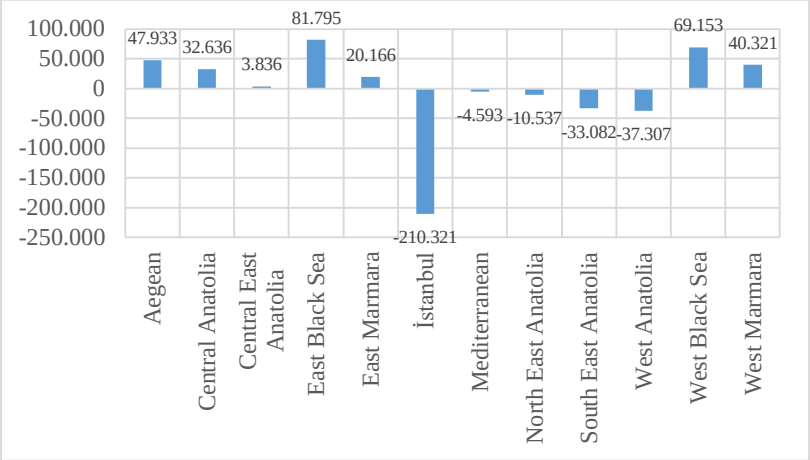


Figure 3.11. Net Migration of Region in 2018

(Source: TURKSTAT, Address Based Population Registration System Results, Net, Migration, Dynamic Query, 2018)

3.2.2. Determinants of the Supply for Housing in Turkey

There is an inseparable relationship between housing demand and demography. Active the demographic structure of Turkey is reflected in the demand for housing. The impact of housing demand is also evident in housing supply. Factors that affect the demand of housing supply are divided into two main headings: economic and political factors. When the demand is taken into consideration, there is little work on housing supply. Related studies and current status indicators will be explained in this section.

3.2.2.1. Economic Factors

This section briefly describes economic factors affecting housing supply in Turkey.

3.2.2.1.1. Prices

Changes in housing prices in the housing economy are said to affect the housing supply. If the prices in the housing sector increase, it is thought that this increase will continue in the future and the quantity supplied will increase. The results of studies examining the supply and prices for housing in Turkey varies. Öztürk and Fitöz (2009)

found that positive relation between housing supply and prices. Construction cost has an influence on housing prices and housing prices affect the housing supply. Bulut (2009) stated that if prices rises, the housing supply increases. The price elasticity of supply was calculated to be 1.5 in the long-run. In other words, if the prices increases by 1%, the housing supply increase by 1.5%. The price elasticity of supply was calculated 0.13 in the short-run. According to Bulut's research (2009), cost has negative impact on housing supply. Baykal, Dikme and Karacan (2018) analyzed that the housing costs and housing supply in Turkey. According to the results of the research, no relationship was found between the costs and housing supply. In other words, Producers are not affected by rising housing costs and reflect the rising costs directly to housing prices. The housing unit prices by years are given in Figure 3.12. The unit price of square meters is increasing every year. This situation can be considered as another indicator of increasing housing prices in Turkey.

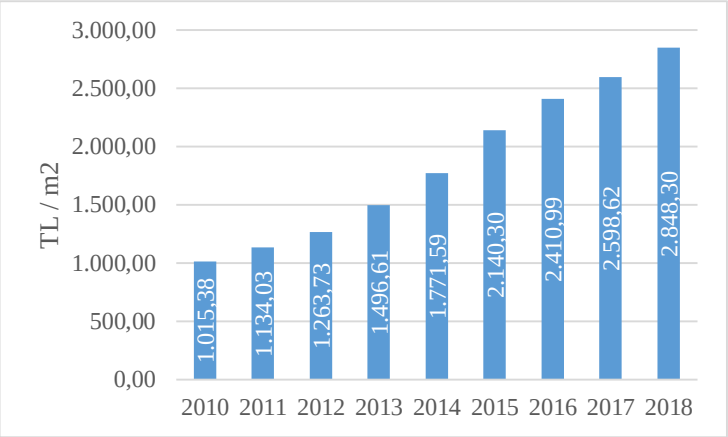


Figure 3.12. Housing Unit Prices for Turkey

(Source: The Central Bank, Housing Unit Prices – TL /m2- Value, Dynamic Query)

The cost of housing in Turkey has an impact on housing supply. The prices of land, labor, cement, iron and steel, ceramic coating materials, marble, paint, plaster, wood, plastic and glass constitute housing cost. Apart from the other construction material, the cost of land increases year by year. Inputs formed building construction costs in Turkey are given Table 3.2.

Table 3.2. Groups of Building Cost

1. Labour		
2. Materials	2.1.General Construction Materials	Main Construction Materials
		Explosive And Fuse Materials
		Timber Cladding Materials
		Metal Materials
		Coating Materials
		Paint, Varnish, Insulation Materials
		Glass And Similar Materials
		Other Construction Materials
		Door And Window Fittings Materials
	2.2.Installation Materials	Sanitary Materials
		Heating Materials
		Common Materials
		Electrical Materials

(Source: TURKSTAT, Building Construction Cost Index)

The changes in the residential construction costs of the houses in 2017 are given in Figure 3.13. The material index, which was 17.4% at the beginning of the year, rose to 25.6% at the end of the year. The labour index, which was 12,6% at the beginning of the year, rose to 13,7% at the end of the year.

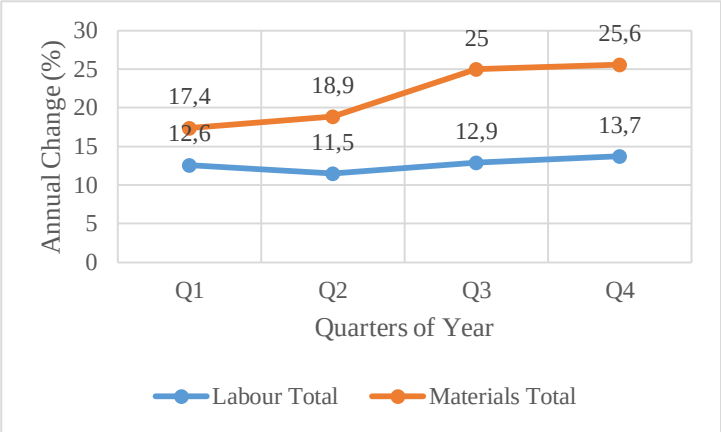


Figure 3.13. Residential Building Construction Cost Index Annual Change in 2017

(Source: TURKSTAT, Building Construction Cost Index, Building Construction Cost Index Annual Change (%) (2005=100), Residential Buildings, 2017)

The change of residential building construction cost index from 2006 to 2017 is shown in Figure 3.14. According to the figure, construction costs tend to increase in Turkey.

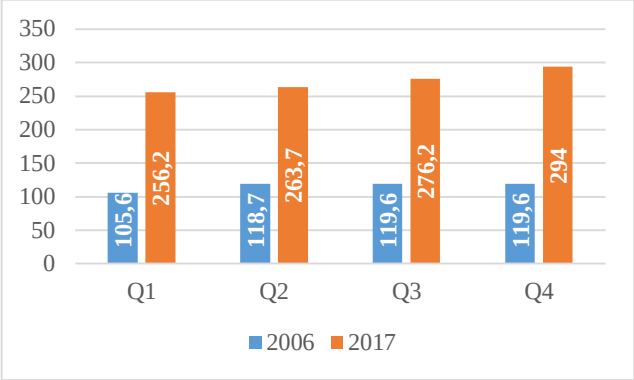


Figure 3.14. Residential Building Construction Cost Index (2005=100)

(Source: TURKSTAT, Building Construction Cost Index, Residential Buildings, 2006-2017)

3.2.2.1.2. Other Factors

It is claimed that housing supply is more affected by interest rate than housing demand. There is negative relation between housing supply and interest rate (Bulut, 2009). Öztürk and Fitöz (2009) said that there is positive relation between housing supply and per capita income. In other words, if the per capita income increases, the housing supply increases in Turkey.

Dücan ve Güğerçin (2016) examined the relationship between housing investment and sectoral loans in Turkey. The result of the research showed that firms invest in the construction sector independent from the areas in which they operate.

3.2.2.2. Housing Policies and Planning Approaches after 2000s

Planning approaches and urbanization are related issues. Housing demand is affected by urbanization, as is the demand for housing (Öztürk & Fitöz, 2009). A planned urbanization can prevent problems such as irregular urbanization and balance housing supply and demand. As it has been mentioned before, urbanization has an increasing effect on the supply of housing. In this context, at the present time, there are regulations and government policies affecting the use and production of housing directly or indirectly. These policies are: housing demand policies, housing supply policies and housing market policies (Türel & Koç, 2015). Housing benefit, lowering

of taxes on housing loans and other housing subsidies can be given as example for direct policy on demand. Monetary policies governing housing finance and regulating market interest rates can be given as example for indirect policy on demand. Rental social housing and land submission at prices below the market price by favour of public institutions, tax deduction and other subsidies are within the scope of direct policies on housing supply. The planning legislation that determines the production of land and its implementation are within the scope of the indirect policies affecting the housing supply and prices. It can be said that rent control is a policy within the scope of intervention in the housing market. Indirectly, taxes that affect land and housing prices can be given as examples.

Since the early years of the government in Turkey had created institutions and developed policies to produce housing in big cities. Cooperatives, which are the form of housing production, are supported by low interest loans, land below market price and various tax advantages. Zoning amnesty has been issued for the shanty houses (gecekondu in Turkish) which are the result of the migration from rural to urban.

There were significant capital inflows to the country after the Second World War. As a result of this situation, mechanization in agriculture has increased and the rural population has turned towards the cities. This is an important factor in the growth of cities (Işık, 2005). Economic problems in cities and lack of housing supply have revealed some housing problems. The slow pace of industrialization against rapid urbanization has brought the housing problem to an important point for the state (Kutsal, 2012).

The ability to prepare and approve development plans for local administrations has allowed the acceleration and increase in the amount of land production with the amendments made to the zoning legislation in the mid-1980s. In 1984, the Prime Ministry Housing Development Administration was established. This institution provided loans for houses built by cooperatives. After the Justice and Development Party came to power in 2002, HDA built housing on public lands and began selling in

installments to non-residents. HDA's powers have been increased and the activities of the HDA are noteworthy. The tasks specified / defined by the Law No. 2985 of the HDA are as follows (HDA Website, 2019, URL7);

- To develop projects in Turkey and abroad directly or through its subsidiaries; to do or to make housing, infrastructure and social reinforcement project
- Establishing companies related to the housing sector or participating in established companies.
- Supporting industry or workers in the field of housing construction.
- Constructing, promoting and supporting housing and social facilities together with infrastructures, if necessary, in areas where natural disaster occurs.
- In case of request of the Ministries and the approval of the Minister to which it is attached, to do or to make the projects and applications subject to the request.
- To implement or to make applications with profit-oriented projects to provide resources to the administration.
- To issue all kinds of securities with government guaranteed or non-guaranteed internal and external bonds.
- To provide personal and mass housing loans, to develop village architecture, to transform the slum areas, to protect and renew the historical texture and local architecture and to make interest subsidies on all these loans when necessary.
- Decide to take credit upon the appropriate opinion of the Undersecretariat of Treasury in order to be used in expenditures related to its field of duty.
- To take measures to ensure the participation of banks for the financing of housing, to give loans to banks if necessary for this purpose, to determine the procedures regarding the implementation of this provision.
- To ensure that all kinds of research, project and contracting transactions are contracted when necessary.
- To carry out the duties assigned by laws and other legislation.

In view of these tasks, it is an independent public institution that can proceed without bureaucratic processes (Soylu, 2017). Public lands can be delivered to HDA costlessly. It can be said that this situation will have an impact on the increase of housing supply. Between 2002 and 2010, the goal of the government to build 500 thousand houses was established and reached. In addition to reducing inflation and interest rates, mortgage loans were restructured in February 2007 by law (Türel, 2012a, p.295). Between 2011 and 2023, the goal of the HDA to build 700 thousand houses (HDA, 2019).

Housing Sales Campaign

Interest rates on mortgage loans and the reduction of taxes and duties received during the sale that applied by government have an effect on the sale of the housing supply in Turkey (Baykal, Dikme & Karacan, 2018). This creates demand within itself and as a result of increasing demand, there may be an increase in housing supply. Significant excesses in housing production and increasing vacancy has been topical issue in Turkey. The government has organized campaigns to increase housing sales and to deplete housing stock in the market (Özdemir Sarı & Aksoy Khurami, 2018). The steps taken to increase the housing sales were reported in the media. Some of these were indicated below.

Between 31 September 2018 and 31 December 2018, it was decided to apply as 8% the value added tax applied which was 18% in the housing sales[2]. This period was extended until 31 March 2019[3] and then, it was extended once again to 31 December 2019[4]. The title deed was reduced from 20‰ to 15‰. In addition to public initiatives, the Bank also tried to stimulate the housing market by reducing housing interest rates from 1.25% to 0.98 (URL8). Although interest rates increased in the following period, credit interest rates were intervened again (URL9). The private sectors started new housing sales campaigns after the government actions. Housing Developers and

[2] Resmi Gazete dated 31.10.2018 and No. 30581 Decision No: 287
[3] Resmi Gazete dated 31.12.2018 and No. 30642 Decision No: 535
[4] Resmi Gazete dated 21.03.2019 and No. 30721 Decision No: 843

Investors Organization (KONUTDER), Istanbul Association of Builders (İNDER) and the Association of Real Estate and Real Estate Investment Campaigns (GYODER) announced that 20% discount will be made in cash and credit purchase (URL1). Moreover, advance payment rates was reduced from 20% to 5%. Ministry of Environment and Urban Planning started a campaign named Earnings Time for Turkey[5] (Türkiye İçin Kazanç Vakti) (URL2). The campaign aims was to sell 60 thousand houses. Moreover, in order to deplete the excess housing stock, which was estimated to be 1 million, the issue of the transfer of the houses for sale the state has been become the main topic of conversation (URL3). Özdemir Sarı & Aksoy Khurami (2019) stated that these campaigns were not intended to solve the households housing problems, on the contrary, they centered upon solve the problems of large construction firms.

Urban Regeneration

Urban regeneration is basically a form of urban space that is different from the existing one (Akkar Ercan, 2012). Regulations regarding urban renewal practices and policies have been developed in Turkey. Thus, excess application of urban transformation in Turkey is noteworthy in recent years. Municipalities and HDA are responsible for urban regeneration practices[6]. Urban renewal practices carried out by HAD (URL10):

- Ankara Kuzeykent
- Ankara Mamak
- Bayburt Gençosman Neighborhood
- Denizli Kurudere Gecekondu
- Erzincan Center Gecekondu
- Erzincan Center Urban Regeneration
- İstanbul Gaziosmanpaşa Urban Regeneration
- İzmir Konak Urban Regeneration

[5] ‘’Türkiye için Kazanç Vakti’’ in Turkish
[6] Resmi Gazete 31.5.2012 dated Afet Riskli Altındaki Alanların Dönüştürülesi Hakkında Kanun Law No.: 6306

- Kuzey Ankara Urban Regeneration
- Kuzey Ankara Recreation
- Nevşehir Gecekondu Reneration Practice
- Trabzon Zağnos Recreation Practice

Apart from these, there are small scale urban transformation projects carried out by municipalities. Certain supports and exemptions are provided in this transformation process (TMMOB-Chamber of Civil Engineers, 2017, p. 37-40). Rent aid and Interest rate support are provided to the right owners who live in risky structure and who meet certain conditions within the scope of the Law No. 6306. The exemptions under the law are: Notary mortgage, title deed and cadastral fees, municipal fees, stamp duty, inheritance and transfer tax, revolving fund fees, fees received under the parking regulation, bank and insurance transactions taxes. In this context, urban transformation practices have an increasing effect on the amount of housing provided.

Development Peace[7]

Development peace was defined as the resolution of the zoning problems of the citizens with the building registration certificate to be given to the buildings that are contrary to the zoning legislation or the license (Ministry of Environment and Urbanization, 2019). According to the government, the reason why development peace is necessary was explained as follows. There are unplanned structures over 50% in Turkey. Citizens and municipalities have problems related to zoning and citizens cannot make get water, electricity and natural gas services. Apart from this, the demolition decisions taken by the municipalities cannot be applied due to the some problems. In the end, the structure which is contrary to the zoning does not create an economic value. For these reasons, it was aimed to provide development peace with legal regulations. It is stated that the income obtained with this application will be used in preparation of earthquake and disaster risks and in urban transformation studies.

[7] Development Peace is known İmar Barışı in Turkish.

Balamir (2019) said that the arrangement is seen as a forgiveness for a price rather than a peace. He criticized the fact that some of the revenues were not transferred to the relevant municipalities and that the database was not shared with the municipal and insurance institutions.

Another criticism is that when bringing the top sanction with Transformation Act, the sanctions are not observed in the implementation of development peace. What is meant here is: The purpose of the Law of Transformation is the collective renewal of the construction in areas under disaster risk, the strengthening of the single structure which is likely to be destroyed or the demolition and reconstruction. For this purpose, the authorities have been given powerful powers and resources. While the Law on Transformation draws attention to the responsibility for life and property protection, this perspective is left aside with the Development Peace. Because, with the Law of Transformation, the rights of individuals are ignored, sanctions are determined with risky areas, immovables are confiscated and transformation is implemented. Transformation projects are being implemented for the protection of society. However, in the Development Peace, the earthquake resistance of the illegal buildings is called the responsibility of the owner.

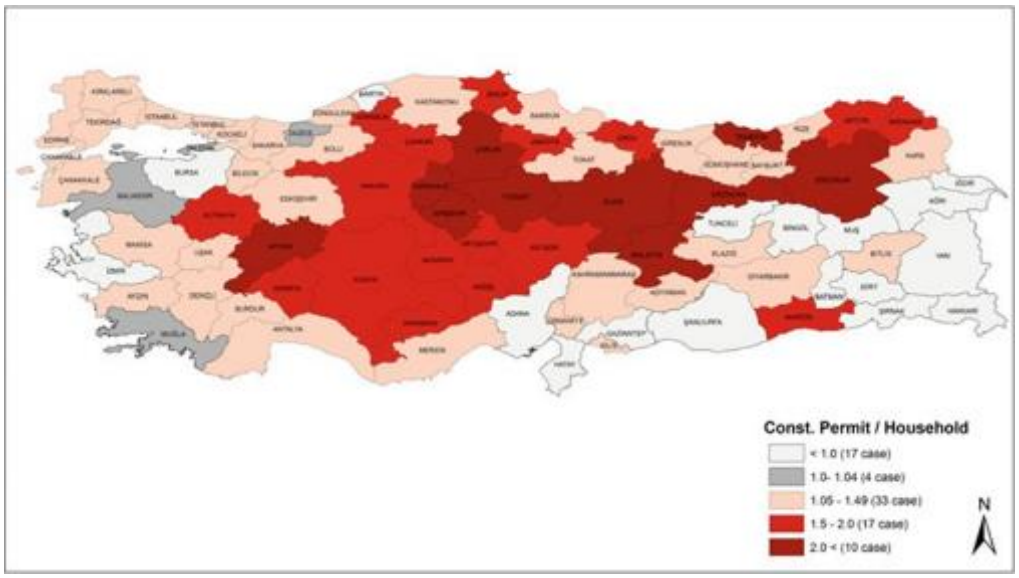
Baharoğlu (1996) examined the form of state intervention in the housing sector during the transformation of the economy (in the early 1980s). It was claimed that if there was no state intervention, the housing sector would not renew because the increasing interest rate and declining wages affected negatively.

3.3. Vacancy in Turkey

In 2007-2008 the world was faced with the global financial crises, and the crisis was reflected in the housing sector of many countries as a decrease in house prices and construction activities and a deterioration in housing affordability (Özdemir Sarı, 2019, p. 167). On the contrary to the global trends, Turkish housing production has increased and number of housing units is considerably higher than the number of household increases since the early 2000s (see Map 3.1). Özdemir Sarı (2019, p. 167)

stated the reasons why Turkey reacted differently to the crisis compared to European counterparts are as follows:

- Turkey's recently developed mortgage finance system,
- Unvaried mortgage finance products
- Less reliance on mortgage finance in housing transactions,
- Governmental support for construction



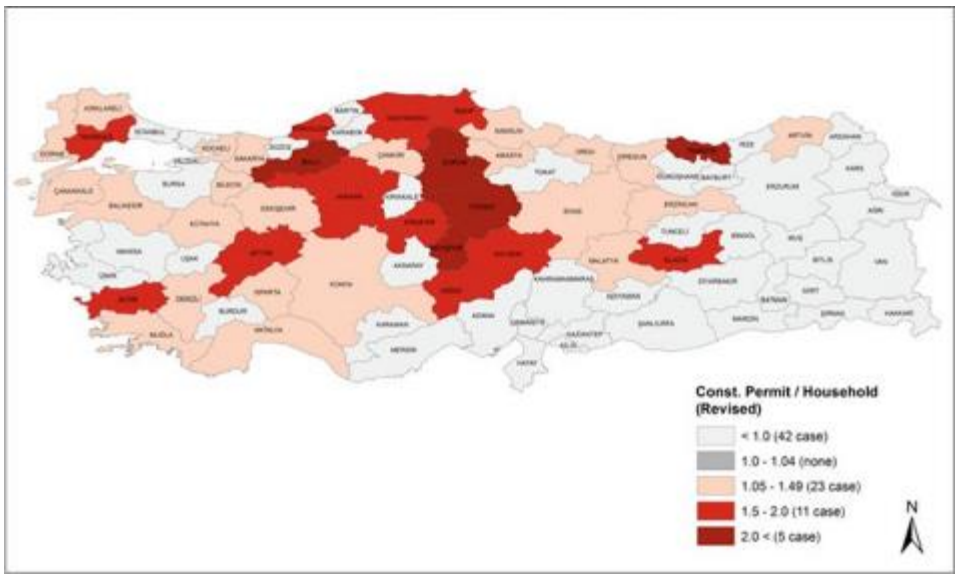
Map 3.1. Number of Construction Permits Issued per added Household: 2000–2014

(Source: Özdemir Sarı, 2019, p. 174)

The direct effect of the public sector on production is an important factor in the increase in the number of houses produced because it is thought that economic development can be achieved with the construction sector. The construction sector was seen as the leading sector for economic growth and the solution of unemployment in the short term. Since the construction sector, which is a component of products and services produced by different sectors (trade, transportation, service and so on), has a close relationship with other economic sectors (Balaban, 2011). In other words, the housing sector is in a tight input-output relationship with other sectors and the sector is mobilizing other sectors. The housing sector is mostly based on domestic industry

and has a high employment potential. In this respect, it is an indispensable element of GNP (Öztürk, Fitöz, 2009).

Özdemir Sarı (2019) established that there was housing shortage in 42 provinces out of 81 provinces in Turkey, and there was housing surplus in rest of them (see Map 3.2). It should also be taken into consideration that the studies are based on authorized productions. However, there are also unauthorized production in the market. In cities with housing shortages of authorized, it can be said that the housing needs are provided from unauthorized housing stock (Özdemir Sarı, 2019, p.175).



Map 3.2. The Housing Shortage and Excess Production in Turkey in 2014

(Source: Özdemir Sarı, 2019, p. 175)

Government policies are the most significant reason for increasing performance of housing sector. The effects of policies in Turkey were examined the above in detail (see p. 56). In shortly, the policies and sale campaigns can be attributed to increasing residential vacancy in Turkey.

It is generally considered that only housing shortage is as to be housing problem in Turkey. Therefore, actions to increase the number of houses and to ensure the sale of houses have made the problems related to the existing housing stock unimportant.

Özdemir Sarı and Aksoy Khurami (2019) expressed the negative reflections of these action as follows:

- Unnecessary spread of cities
- Loss of agricultural land and green areas in the city periphery
- Increased costs and times spent by households in transportation
- Sacrificing urban transformation irrespective of the quality of built-up areas
- Increase in urban conflicts and inequalities
- Households with higher incomes tend to focus on newly produced stocks, and relatively low income households (tenants / homeowners) are concentrated in the old parts of the city
- Stock and living environments become unsustainable in the existing built-up areas of the city
- Formation of a vacant housing stock

In Turkey, the sustainability of the produced houses, the accessibility of the households to the housing, the demand and supply matching, the housing problems in the existing area, the effect of the newly built houses on the general prices, the neglect of the existing stock management issues are effective in the formation of high vacancy rates (Özdemir Sarı and Aksoy Khurami, 2019).

It was stated for the smooth operation of a housing market, the vacancy rate should be approximately at 4-6%. However, high vacancy rates are obtained in many urban areas in Turkey (Özdemir Sarı, 2015b). Therefore, In the Turkish case, examining the residential vacancy patterns become a current necessity considering the high housing output created in the country since the early 2000s.

3.4. Conclusion

As in other countries, housing is an important issue for Turkey. It adds great value to GDP economically. Moreover, the regulations in the housing sector also affect socio-cultural structural elements such as poverty, education and crime. Housing plays an

important role for the country both economically and socially. Housing prices, income of households, interest rates, inflation rate, unemployment rate, population characteristics and urbanization are in effective in housing demand while especially housing prices, building costs and especially political factors are effective in housing supply in Turkey.

Housing problem which is considered as a lack of housing is misidentified in Turkey. The fact that housing acts as a locomotive in the economy due to its relationship with other sectors has led to an increase in the policies and incentives for housing production. However, the equilibrium relation between supply and demand for a sustainable city and the qualitative problems of housing have been ignored. As a result, there is an increasing housing stock and vacancy in the Turkey housing market.

In order to reveal possible housing problems, studies in developed countries are conducted on the stock vacancy rate and these studies are used in urban planning orientations (Özdemir Sarı & Aksoy Khurami, 2019). However, it can be said that Turkey has shortcomings in this regard.

CHAPTER 4

CASE STUDY RESEARCH: GEMLIK DISTRICT

4.1. Introduction

Housing vacancy rates, as indicators of housing shortages and excess production in housing markets, are significant inputs for urban planning and housing policy (Özdemir Sarı, 2015). Through monitoring of the vacancy rates, it is possible to identify problems in housing markets. Residential vacancy patterns may display differences in different sub-market areas. As discussed in Chapter 2 of this thesis, the differences observed in vacancy patterns of sub-market areas may have demand and/or supply related reasons. In the Turkish context, this study argues that high housing output obtained in the Turkish cities, which is triggered purposefully since 2002 by the government housing policy, has created high number of vacant dwellings not only in existing housing areas but also in the newly developed parts of the settlements. Thus, it is possible to identify different vacancy patterns such as low demand due to the filtering of the neighborhood, unaffordability of prices or new entry to the sales and rental housing market, and excess housing production. In this context, in order to examine housing vacancy rates, distribution of vacant properties, and possible reasons of vacancy closely, a case study has been carried at district level. District level is preferred as a mesoscale settlement since city scale is highly difficult to examine in detail and neighborhood scale does not represent all the functions of an urban area every time. In this frame, Gemlik District in the city of Bursa is chosen as the study area. As explained in the Introduction Chapter of this study, any other district in any other city could be selected as a case study area, however, Gemlik has a number of potentials (i.e. data availability, possibility to examine summer houses) which makes it preferable over other alternatives for the purposes of this study.

Gemlik is located in the northwest of Turkey. Developing industry and its location have been effective in Gemlik's economic and spatial development. Although it seems to be a calm district, its population is increasing day by day. Housing vacancy basically depends on excess supply or lack of demand. As Gemlik contains different neighborhood structures and various income groups in itself, both of these cases are likely to be seen. Therefore, it is a suitable district in terms of traceability of the city's spatial growth and the number of housing increase in recent years. The case research, in this context, aims to reveal the housing vacancy rates of Gemlik neighborhoods, spatial distribution of vacancies, and their possible reasons. Accordingly, this chapter presents (1) the general information about Gemlik, (2) housing vacancy calculation, (3) neighborhood analysis, (4) evaluation of the findings and identification of the vacancy pattern.

4.2. General Information about Gemlik

Bursa has been an important city in every period of history. The industrial and agricultural potential of Bursa has a great role in this development. As a natural result of the developing economy, the population in Bursa has increased and Bursa's growing economy was also reflected in Gemlik. The establishment of factories and the Free Zone in Gemlik have brought about the development in Gemlik, like in Bursa. The fact that it is already on the seashore and has an important position in the transition to Istanbul has created added value for Gemlik. According to socio-economic development index of former State Planning Organization, Gemlik is the 46th district among 872 districts in Turkey (DPT, 2004). In this chapter, the research conducted in the neighborhoods of Gemlik will be presented.

4.2.1. Location of the Gemlik

Gemlik district, which is connected to Bursa Metropolitan Municipality, is located in the South Marmara section of the Marmara Region and is located in the northwestern part of Bursa (Map 4.1). Gemlik provides the connection between Istanbul in the north, through Yalova-Kocaeli, and the Bursa Province in the south. In other words,

Gemlik is located at an important road link on the transit lines connecting the Bursa Province, the Aegean Region and the South Marmara Region to the inner parts of the Marmara Region.

Map 4.1. The Location of the Gemlik in Bursa

4.2.2. Spatial Development of the City

The historical development of Gemlik could be presented in four periods as Hellenistic, Seljuks, Ottoman, and Republican Periods. These four historical period are summarized from Gemlik Development Plan Research Report (2009), and the reflection of the historical development to the space is shown on the Map 4.2.

4.2.2.1. Hellenistic Period

In the Hellenistic period, Gemlik settled along the seashore, now known as the old coast. The socio-economic and cultural structure of the period influenced the spatial structure. In this period, the Greeks, engaged in the activities of silkworm, olive and maritime, have adopted the grid system to allow the sea wind to enter the city.

4.2.2.2. Seljuks Period

In all periods of history, Gemlik functioned as a gateway to Istanbul. The Islamic policy in the Seljuk period made Istanbul important and Gemlik gained importance in

the transition to Istanbul. Gemlik has developed towards the slopes of the Samanlı Mountains in the north to make maritime activities, to protect the city and to preserve the agricultural areas that make up the city's economy.

4.2.2.3. Ottoman Period

Gemlik entered the process of construction and urbanization in the Ottoman period. Maritime policies and shipbuilding houses had been important. In addition, it introduced itself with silk, olive and precious metals. Its importance increased with the presence on the Istanbul-Bursa caravan route. There had been some innovations with the Tanzimat movements. With these innovations, mobility in urban economy started. The shipyard had developed with the port being inadequate. Increasing commercial activities attracted population to the city. In the 17th and 18th century the center of the city gathered around a small harbor. The craftsmen and traders at that time were clustered according to their expertise on the narrow roads, which were opened radically to the port.

In the Ottoman period, there were building constructions involving various functions such as storage, management, manufacturing and these building took place in the center. While the center was expanding, it moved toward the residential settlements or pulled the residential area around the center. For this reason, the business center and residential settlement developed together.

4.2.2.4. Republic Period

There were no socio-economic or spatial developments in the early years of the Republic. After 1934, commercial activities in the city were gathered around Istiklal Street, which extends to the north, and harbor. With the effect of the factory on the development of the city, residential areas began to spread from the old city to the southeast.

After the 1970s, the automotive sector developed in Bursa and the factories were located on the Gemlik-Bursa highway. The industrial sector has also begun to develop

in Gemlik. These industries, which are usually located on Yalova road, have created an employment in Gemlik and this has led to the migration from rural to urban areas. Agriculture- based industries were created with the development of agriculture.

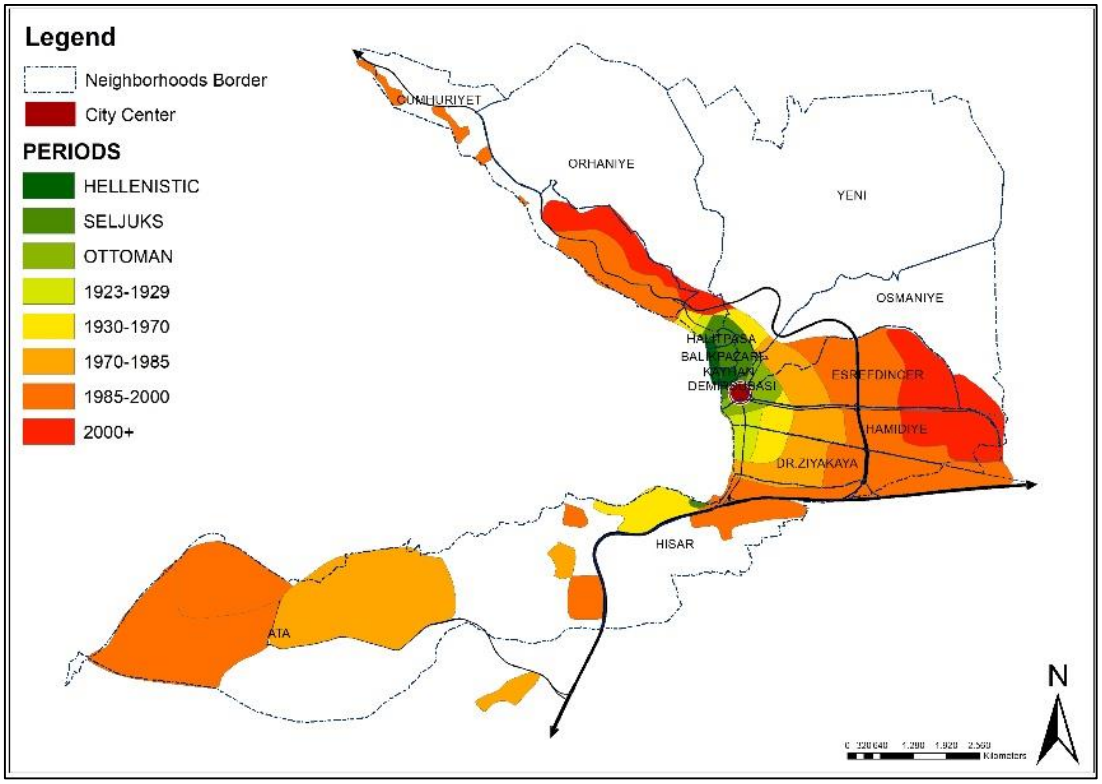
The development of the industry has created a certain employment, and the development of the residential area has spread towards the plain where joint ownership was common. With the development of trade in Gemlik, increased urban rent in the city center caused the formation of high-rise buildings at the coastline and center. During this period, the small industry was located along two important streets in the center and between the residential and commercial areas on the Orhangazi road. The negative factors such as noise and pollution caused by the small industries, the dispersed settlements and the traffic congestion caused by them, and the high rent and land rent in the center caused the establishment of a small industrial site outside the city.

As a result of the decisions taken by the state in the post-1985 period, the rate of urbanization of Bursa and Gemlik increased dramatically. With the increase of industrial facilities, to bring the product to the foreign market; the port of Gemport, put into service in 1992, was established in the southwestern part of Gemlik gulf. With the establishment of the Gemport Port and the industrial establishments that were important throughout the country, the residential development in Gemlik has spread to the southeast and east. Trade axes were distributed along the coast from the center to the north, Istiklal Avenue in the south and Orhangazi Street in the east. This situation led to the increase of rent in the center and caused the increase of 6-7 floors buildings in the center and along the coast.

After 1990, the trend of urbanization began to take place in Manastır (Cumhuriyet Neighborhood) in the north of the district. High-rise dwellings, children's playgrounds and green areas were planned in housing estate[8]. After 2000, the settlement area, despite the sloping structure, has spread towards the mountain slopes.

[8] ‘’Konut Sitesi’’ in Turkish

After 2005, the formation of housing on the plain in the east of Gemlik district has increased. The area is generally preferred by the people who migrated from the eastern part of the country and the low income group because of having 2 and 3 floors houses, having the lowest land prices and having large gardens.



Map 4.2. Historical Development of Gemlik

(Source: Remapped by author according to Gemlik Development Research Plan, 2009)

4.2.3. Demographic Structure

4.2.3.1. Population Characteristics

In terms of population, Gemlik is one of the important districts of Bursa after three central districts (Osmangazi, Yıldırım, Nilüfer). According to population ranking of Bursa districts in 2018, Gemlik is in the fifth rank out of seventeen districts (Figure 4.1).

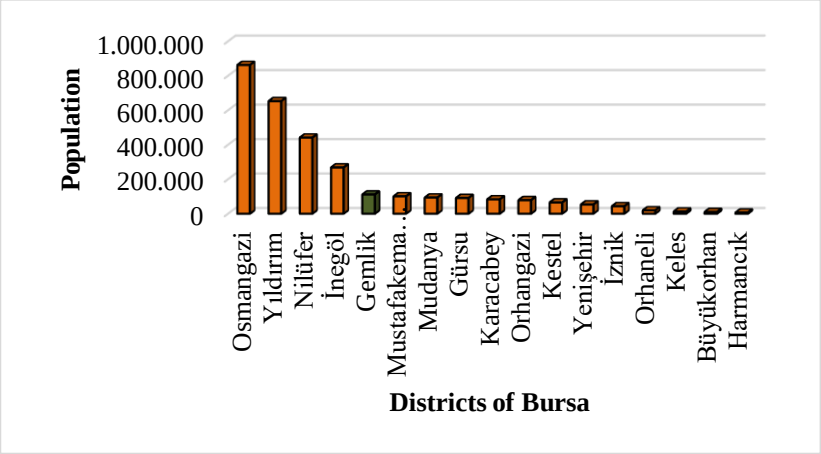


Figure 4.1. Population of Bursa Districts in 2018

(Source: TURKSTAT, 2018)

The population of the district is 111.488 in 2018, it constitutes 3.72% of the population of Bursa Province. Gemlik's population has increased over the years (Figure 4.2).

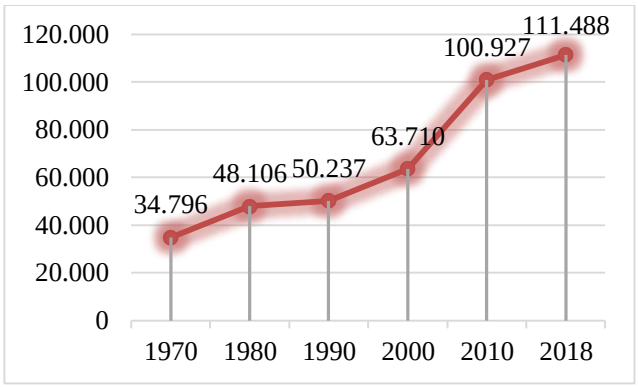


Figure 4.2. Change of Gemlik Population by Years

(Source: TURKSTAT, 1970, 1980, 1990, 2000, 2010, 2018)

4.2.3.2. Migration

The district is close to the main centers and on important transportation axes. Thus, it is a center of attraction for industrial facilities, and industrial facilities creates job opportunities for many people. Therefore, Gemlik is a highly suitable district for migration (Gemlik Development Plan Research Report, 2009).When the number of people who reside in Gemlik but whose registration province is different from their

usual residence is examined, the share of Bursa is 45% the remaining population is from other provinces. Moreover, Giresun, Erzurum and Trabzon are respectively in the top 3 (except Bursa). In other words, Gemlik has been mostly migrated from Giresun, Erzurum and Trabzon. One of the most important factors in the increase of the population of Gemlik is the migration from outside of the province and the region.

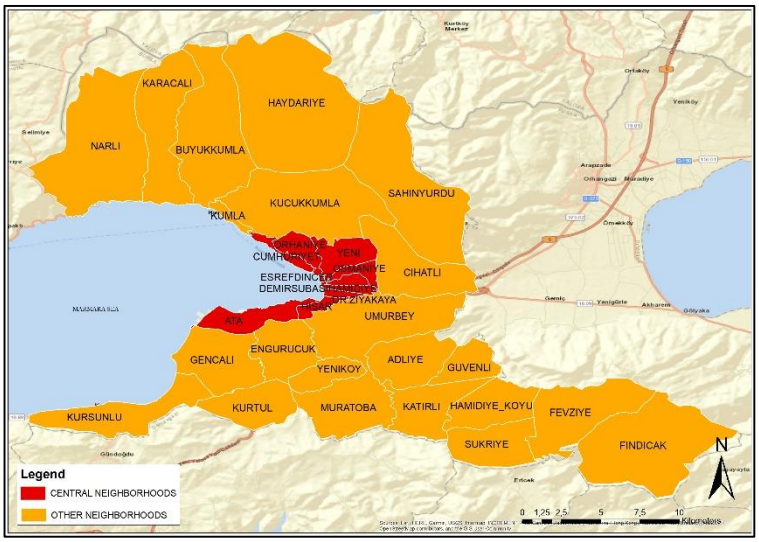
4.2.3.3. Population of Neighborhoods

There are 35 neighborhoods in the Gemlik Municipality border (Map 4.3). These neighborhoods are given in Table 4.1. 13 of these 35 neighborhoods are central neighborhoods which are the case study areas (Map 4.4). These are: Cumhuriyet, Orhaniye, Balıkpazarı, Halit Paşa, Yeni, Kayhan, Osmaniye, Eşref Dinçer, Hamidiye, Demirsubaşı, Ata, Hisar, Dr. Ziya Kaya (Gemlik Development Plan Research Report, 2009).

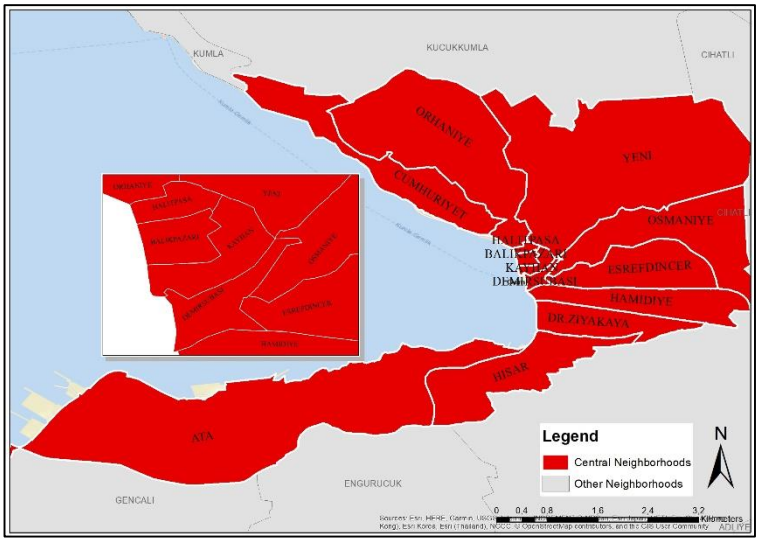
Table 4.1. Gemlik Neighborhoods

Adliye	Dr. Ziya Kaya	Halitpaşa	Kayhan	Orhaniye
Ata	Engürücük	Hamidiye	Kumla	Osmaniye
Balikpazari	Eşref Dinçer	Hamidiyeköy	Kurşunlu	Şahinyurdu
Büyükkumla	Fevziye	Haydariye	Kurtul	Şükriye
Cihatli	Findicak	Hisar	Küçükkumla	Umurbey
Cumhuriyet	Gençali	Karacaali	Muratoba	Yeni
Demirsubaşi	Güvenli	Katirli	Narli	Yeniköy

(Source: TURKSTAT, 2018)

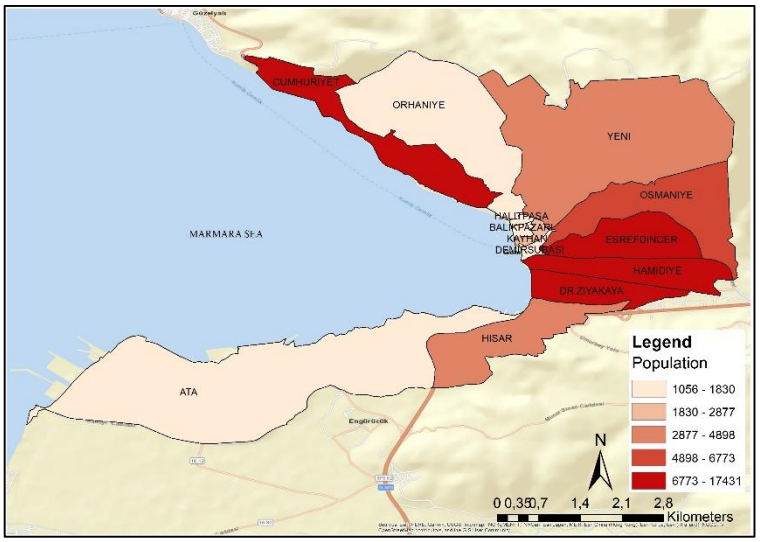


Map 4.3. Neighborhoods of Gemlik



Map 4.4. Central Neighborhoods of Gemlik

According to the TURKSTAT data in 2018, Dr. Ziya Kaya has the highest population level among the neighborhoods. Eşref Dinçer and Hamidiye are in the second and third order, respectively. The population distribution of the central neighborhoods is shown in Map 4.5.



Map 4.5. Population Distribution of Central Neighborhoods of Gemlik

4.2.4. Economic Structure

Gemlik is in a significant position in linking large cities. Gemlik is growing in economic sense with its harbor which will serve to cities such as Istanbul, Bursa and Izmit, developing industry and increasing labor potential (Gemlik Development Plan Research Report, 2009). According to the Research of Socio-economic Development Ranking of the Districts in 2004, Gemlik ranks second after the metropolitan districts in Bursa (DPT, 2004).

The main economic activities in the Gemlik are as follows; agriculture, industry, port-logistics-storage. These activities developed the services sector in the city center. Developments have been observed in sub-sectors of social and personal services, trade, financial institutions and insurance (Gemlik Development Plan Research Report, 2009). According to the studies conducted in Gemlik Development Plan Research Report, 3,1% of the Gemlik population for the year 2000 is employed in agriculture, 41,2% in industry and 55,5% in services sector.

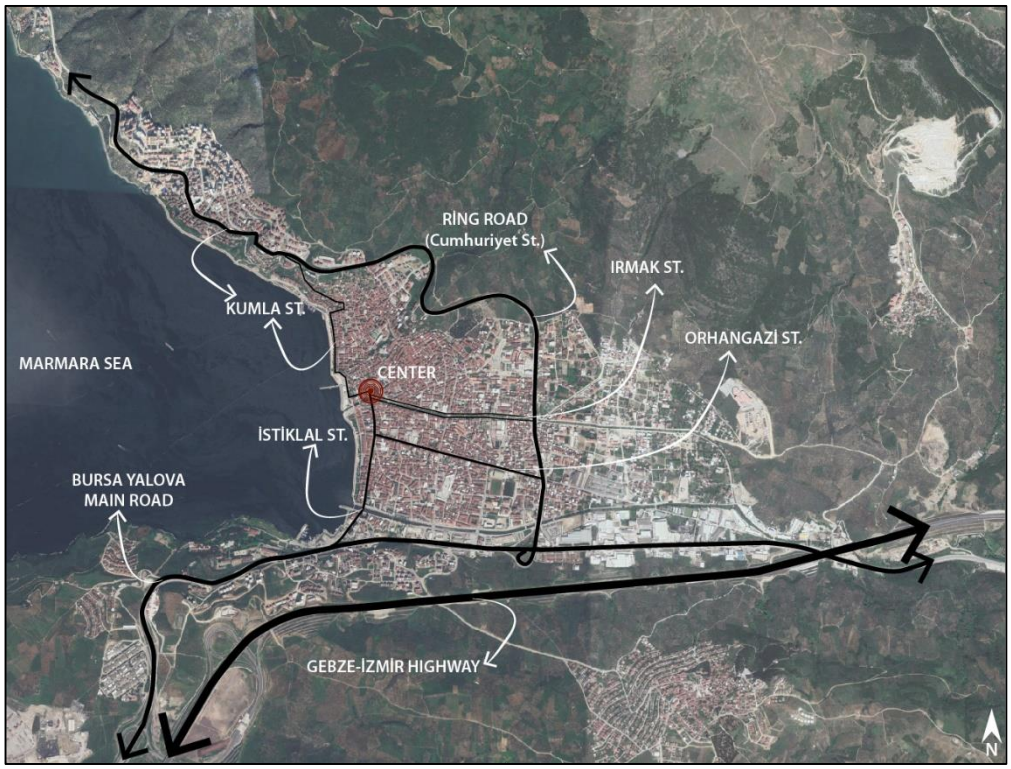
In terms of industrial production, the city has a great contribution to the region and the country. Agriculture-based manufacturing plays an important role in the economy. One of Turkey's 19 free zones is Bursa Free Zone is located in Gemlik (URL11). This

area has a very important place in terms of production and transportation relations because it is close to the city of Bursa and is located at the most important ports of Marmara Sea. Due to its proximity to the port area, it also provides convenience in terms of logistics. The industrial and port activities carried out in the free zone provide significant employment. In addition to working activities in the Free Zone, there is a small industrial site. In this field, automotive related spare parts, repair, service, electrical services are provided. The services sector in which the Gemlik population works can be subdivided into sub-titles: wholesale retail services, transport communication storage services, insurance services related to real estate and personal social services. Apart from these, there are employees in health and education sectors (Gemlik Development Plan Research Report, 2009).

4.2.5. Urban Structure

The study area is surrounded by the Samanlı Mountains from the north, the western extensions of the Katırlı Mountains from the south and the Marmara Sea from the west. The slopes facing the gulf with the same name form Gemlik's land. Many plains are caught between the mountains and the shore. The district center is located at the western end of the Gemlik plain.

The main street of the district is the Istiklal Street, which leaves the Bursa-Yalova main road and ends in the city center. Although there is not a specific distinction in the Gemlik district that specifies the city center, trade and service functions are concentrated around Gemlik Square and continue along Istiklal Avenue, Eski Pazar Street and Orhangazi Street. Urban structure of Gemlik is shown in Map 4.6.



Map 4.6. Urban Structure of Gemlik

(Source: Google Earth, 2018)

4.3. Housing Vacancy Analysis

In this first part of the study in order to estimate vacancy rates, total number of housing units at neighborhood level in 2016, provided by the Gemlik Municipality based on NAD data, and number of households in the neighborhood in 2016, provided by the TURKSTAT are employed. The formulas used for calculation are given as follows:

$$The\ Number\ of\ Residential\ Housing\ Stock = the\ Number\ of\ Total\ Housing\ Stock - the\ number\ of\ Households$$

and,

$$The\ Estimated\ Vacancy\ Rate = The\ Number\ of\ Residential\ Housing\ Stock \div Total\ Housing\ Stock$$

Here, it must be noted that 'residual' represents housing units which do not match with a household. Residual in this context may include housing units which are available on the housing market for sale or for rent, or housing units that are kept out of the market (i.e. the ones occupied as a second house or kept empty for speculative or other purposes). That's why the vacancy rate calculated here is called as 'estimated vacancy rate'. The actual vacancy rate can only be determined from one to one observation of all units through a field survey, which is very costly in economic terms and highly time-consuming. Under ideal circumstances, actual vacancy rate should cover dwelling units available for sale and for rent, as well as the ones that are kept empty for several reasons. The number of total housing units, households and residual are shown in Table 4.2. The estimated housing vacancy rate in 2016 of 13 central Neighborhoods of Gemlik is calculated and displayed in Table 4.3 and Map 4.7.

Table 4.2. The number of Total Housing Unit, Households and Estimated Vacant Housing in Neighborhoods

Neighborhood	*Housing Unit*	*Household*	*Residual*
Ata	1261	383	878
Balikpazari	1017	703	314
Cumhuriyet	6855	4703	2152
Demirsubasi	953	577	376
Drziyakaya	6882	5279	1603
Esrefdincer	7776	4573	3203
Halitpasa	602	393	209
Hamidiye	6255	4156	2099
Hisar	3246	1255	1991
Kayhan	1656	1044	612
Orhaniye	1180	729	451
Osmaniye	2958	2217	741
Yeni	2244	1343	901

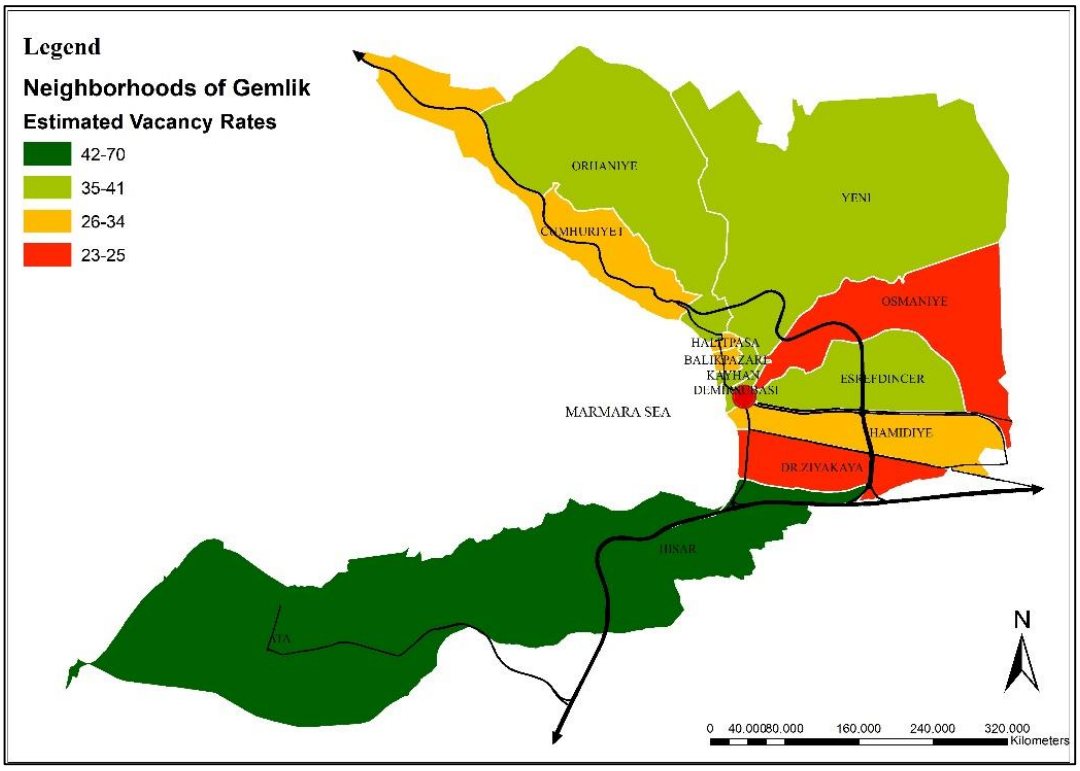
(Source: Gemlik Municipality, TURKSTAT & Personal Calculation)

Table 4.3. Estimated Housing Vacancies in 2016 of Gemlik Central Neighborhoods

Neighborhood Name	*Estimated Housing Vacancies*
Ata	0,70
Balikpazari	0,31
Cumhuriyet	0,31

Demirsubasi	0,39
Dr.Ziya Kaya	0,23
Esref Dinçer	0,41
Halitpasa	0,35
Hamidiye	0,34
Hisar	0,61
Kayhan	0,37
Orhaniye	0,38
Osmaniye	0,25
Yeni	0,40

(Source: Calculated by author on the basis of data provided by TURKSTAT (2016) and Gemlik Municipality (2016))



Map 4.7. Estimated Housing Vacancy Rates in Neighborhoods

(Source: Mapped by author according to estimated housing vacancy rates)

4.4. Analysis of the Neighborhoods

As a result of the calculations, different vacancy rates were obtained for each neighborhood. Figure 4.3 is obtained when the housing vacancy rate is sorted. As seen

in the figure, the vacancy rates for the 13 neighborhoods are different. There are neighborhoods with similar vacancy rates, as well as neighborhoods with very low or very high vacancy rates. The highest vacancy rate was found in Ata district and the lowest in Dr. Ziya Kaya neighborhood.

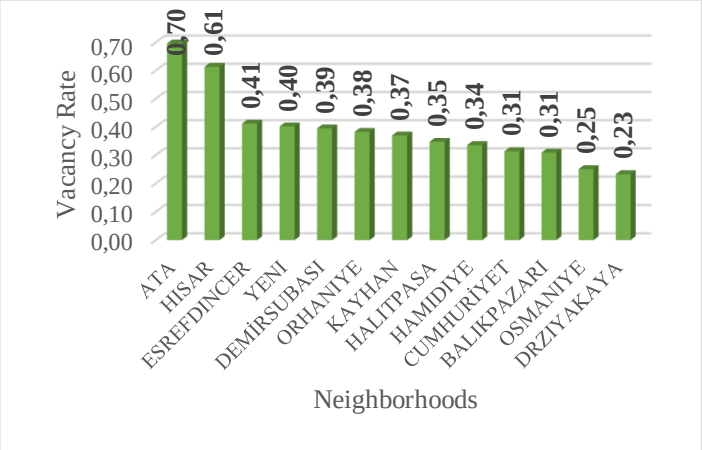


Figure 4.3. Ranking of the Neighborhoods by Housing Vacancy Rates

There are many reasons why the vacancy rates are different, why they are low or high. In this study, two simple situations have been proposed as reasons for this differences. These are excess housing supply and low demand. These two cases will be examined under specific questions. These questions are listed as follows:

1. Is the neighborhood an old settlement area or not?
2. Does the neighborhood has area of development? Are there empty parcels?
3. What is the use of the neighborhood? (Residential, summer houses, commercial or mixed use?)
4. What is the number of construction permits over the years in the neighborhood?[9] (from 2009 to 2016)
5. Is social infrastructure adequate in the neighborhood?
6. What is the distance of neighborhood from the center? (map distance)
7. What are the numbers of houses for sale and rent?

[9] The number of construction permits is the number of permits on parcel basis. In the municipal archive, building permits in the form of independent housing units are not kept as data.

8. What are the physical features of the housing units in the neighborhood?
9. Is the density of building in the neighborhood high or low? (The number of floors? building block is large or small? road narrow or wide?)

The answers to these questions are briefly given in Table 4.4. According to these answers, the reason or reasons of the housing vacancy will be tried to be put forward in the neighborhood level in the next sections. Evaluations between residential vacancy patterns and the findings obtained from the field research will be explained in the end of the chapter.

Table 4.4. The Summary of the Questions by Neighborhood Level

Questions / Neighborhoods	Ata	Balikpazari	Cumhuriyet	Demirsubaşi	Dr. Ziya Kaya	Eşref Dinçer	Halitpaşa	Hamidiye	Hisar	Kayhan	Orhaniye	Osmaniye	Yeni
1.	Mostly summer houses	old	mostly new	old	mostly new + old	mostly old + new	old	mostly old + new	new	old	old	old	new
2.	yes	no	yes	no	yes	no	no	yes	yes	no	no	no	no
3.	summer houses	residential + commercial	residential	residential	residential + commercial	residential	residential	residential + commercial	residential	residential	residential	residential	residential
4.(1)	82	4	130	8	256	207	4	275	136	15	2	45	65
5.	no	no	no	no	no	no	no	no	no	no	no	no	no
6.(2)	3 km	650 m	2,1 km	100 m	1 km	1 km	750 m	1,7 km	2 km	650 m	950 m	400 m	1,1 km
7.(3)	9	52	295	40	155	255	14	144	219	49	28	96	80
8.	good	bad	good	bad	mix	mix	bad	mix	good	bad	bad	bad	good
9.	low	high	low	high	medium	medium	high	high	low	high	high	high	medium

(Source: (1) Gemlik Municipality, between 2009 and 2016; (2) Distance measurement of Google Maps; (3) Hürriyet Emlak and Sahibinden.com; others: observations by author in the field)

4.4.1. Ata Neighborhood

The vacancy rate of Ata Neighborhood is 0.70 which is the highest rate in Gemlik. Free zone, small industry and port activities are carried out at the borders of this neighborhood. While olive grove occupy large area, housing areas occupy little space. There are summer residences in the areas close to the coast. There is no social infrastructure in the neighborhood. The neighborhood is located on the west side of the city and west of the Bursa-Yalova highway. The distance of the neighborhood to the city center is about 5 km. Transportation is provided by bus, which takes 1 to 2 hours, or by walking from main road. The satellite images of the neighborhood in 2006 and 2018 can be observed from Map 4.9 and Map 4.10. As can be seen in maps, spatial changes in the area is very limited.

Map 4.8. Ata Neighborhood

(Source: Google Earth, 2018)

Map 4.9. Summer Houses in Ata Neighborhood in 2006 (left); Ata Neighborhood in 2018 (right)

(Google Earth, August 2006 and April 2018)

Map 4.10. Summer Houses (Gemsaz) in Ata Neighborhood in 2006 (left) in 2018 (right)

(Source: Google Earth, 2006 and 2018)

Most of the residential areas were built on 2 floors. There are medium quality houses in terms of construction quality. The roads are not narrow. It is a low density neighborhood.

Figure 4.4. Ata Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits on parcel basis from 2009 to 2016 is shown in Figure 4.5. The total number of construction permits in 8 years is 82. In the field study, most of this neighborhood is used as summer residence so, construction permits may include residential renovation work on existing parcels or summer housing construction.

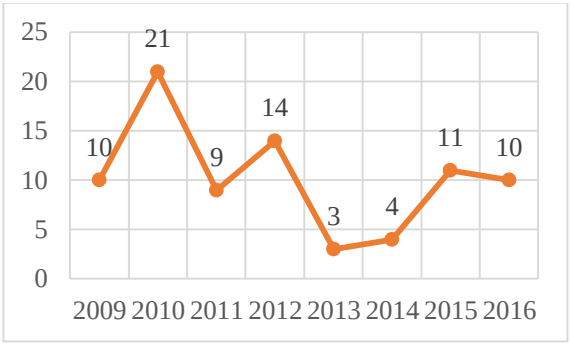


Figure 4.5. The Number of Construction Permit on Parcel Basis in Ata Neighborhood

(Source: Gemlik Municipality)

Observations in the neighborhood display that housing area in the Ata Neighborhood is actually not vacant. The housing units for sale and rent were examined from the housing advertisement sites and observed on field study. There are very few houses for sale and rent, and the rest are occupied. In conclusion, the major reason of observing the highest vacancy rate (0,70) in Ata Neighborhood is the summer houses, owners of which are not registered in the neighborhood. Due to this reason, although the number of dwelling units include summer houses as well as single family houses, number of households excludes the occupiers of summer houses leading to miscalculation of the vacancy rate in the neighborhood.

4.4.2. Balıkpazarı Neighborhood

The vacancy rate of the Balıkpazarı Neighborhood is 0,31. The vacancy rate of high to low ranking is eleventh out of thirteen neighborhoods. It is one of the oldest residential areas of the city and it has the feature of dense housing area. It is located next to the north of the city center. The neighborhood is within 5 minute walking distance from the Gemlik Square. Parcels and building blocks are small scale in the neighborhood and there are attached buildings. Most of them were built as 5 or 6 floors. The narrow roads, the lack of social infrastructure areas, lack of vacant land for development and the dimensions of the building blocks have had an increasing effect on the building density. There are medium and bad quality houses in terms of construction quality. The satellite images of the neighborhood in 2006 and 2018 can

be observed in Map 4.11 and Map 4.12. As can be seen in maps, spatial changes in the area is very limited.

Map 4.11. Balıkpazarı Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.12. Balıkpazarı Neighborhood in 2018

(Google Earth, April, 2018)

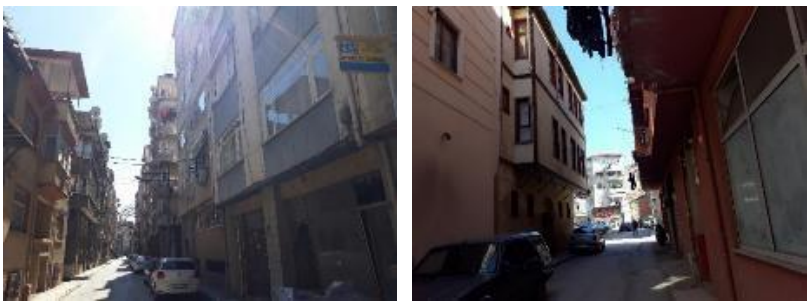


Figure 4.6. Balıkpazarı Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 3.1. The total number of construction permits in 8 years is 4. As there is no vacant land, new housing construction can only be realized with the destruction of existing houses. Therefore, the number of residential construction in the neighborhood is low.

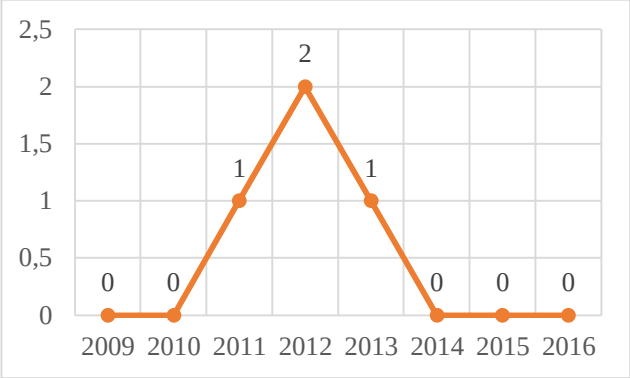


Figure 4.7. The Number of Construction Permits in Balıkpazarı Neighborhood

(Source: Gemlik Municipality)

Observation in the neighborhood display that notable vacancy was not observed in the field. Additionally, the housing units for sale and rent were examined from the housing advertisement sites. However, the estimated vacancy rate of the neighborhood (0,31) is higher than the acceptable vacancy rate (0,06). Balıkpazarı is an old neighborhood so there are not vacant lots and there is high density of dwellings. The areas planned as housing + trade are in the majority. In this context, that the estimated vacancy rate in Balıkpazarı is higher than 0,06 has a reason other than low demand or excess housing production. In conclusion, the reason is that the housing + trade units were not keep as separate data in national address database so, it caused an error in the housing vacancy calculation.

4.4.3. Cumhuriyet Neighborhood

The vacancy rate of the Cumhuriyet Neighborhood is 0.31. The vacancy rate of high to low ranking is tenth out of thirteen neighborhoods. It is located in the north of the city. It is about 2 km away from Gemlik Square. Transportation to the neighborhood is provided by buses with 30 minutes intervals. In the beginning, areas of olive groves

covered a large area in the neighborhood, in the last 20 years it has evolved as a residential area. Residential use in the neighborhood is predominant. Housing is usually within the site. Car park, park and playgrounds were solved within the site. The overall quality of housing is good. Number of floors in the buildings can increase up to 15 as a result of the floors obtained from the land slope. Building blocks are large scale. Social infrastructure areas are insufficient. The spatial development of the neighborhood can be observed from Map 4.13 and Map 4.14. It is possible to say that both the sea view and the buildings in the site made the neighborhood a center of attraction and the vacant land in the neighborhood has been filled due to its increased attraction in the Gemlik.

Map 4.13. Cumhuriyet Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.14. Cumhuriyet Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.8. Cumhuriyet Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits on parcel basis from 2009 to 2016 is shown in Figure 4.9. The total number of construction permits in 8 years is 130.

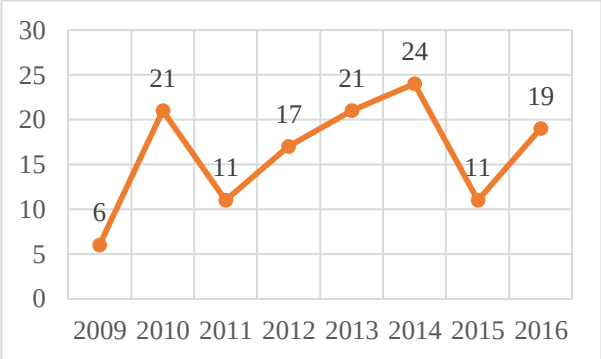


Figure 4.9. The Number of Construction Permits in Cumhuriyet Neighborhood

(Source: Gemlik Municipality)

As a conclusion, observations in the neighborhood display that Cumhuriyet neighborhood is one of the neighborhoods in Gemlik where the number of housing available for sale and rent is high. The housing vacancy rate (0,31) is relatively low

compared to other neighborhoods, as the number of households is high. When considered from this point of view, it can be said that the preference of the neighborhood is high. Sitting in certain neighborhoods in Gemlik is perceived as a status indicator. The neighborhood has a high level of preference due to its status indicator feature despite the negativities such as the fact that the housing is built on a slope, transportation is a problem for non-private vehicles and the ground is not suitable for settlement in some areas. Moreover, high demand for the neighborhood has attracted housing producers to the neighborhood.

4.4.4. Demirsubaşı Neighborhood

The vacancy rate of the Demirsubaşı Neighborhood is 0.39. It is one of the old neighborhoods. It is located in the city center. There are commercial areas near the center and residential areas in the inner regions. Parcel areas are small. Building construction is generally 5 floors. The roads are narrow, there are few social infrastructure areas and empty spaces. Therefore the building density is high. When looking at the general housing structure, the housing quality is generally low. Moreover, there is a few historical building. As can be seen from Map 4.15 and Map 4.16, there is not much change in the development of housing density.

Map 4.15. Demirsubaşı Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.16. Demirsubaşı Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.10. Demirsubaşı Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.11. The total number of construction permits in 8 years is 8. The permits may include residential renovation work on existing parcels.

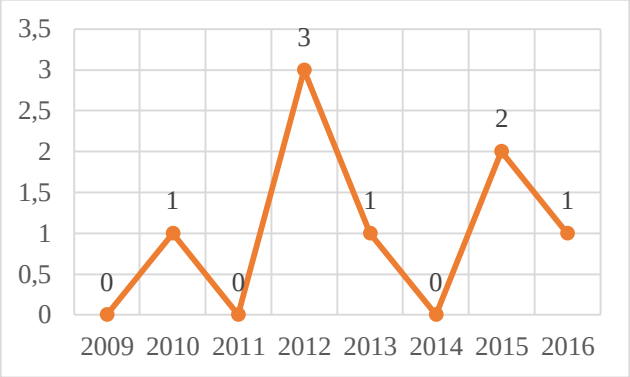


Figure 4.11. The Number of Construction Permits in Demirsubaşı Neighborhood

(Source: Gemlik Municipality)

According to observation in the neighborhood, there are many old housing stock. In can be said that old and neglected houses are in the majority. The presence in the trade area, being from the old settlements, the lack of suitable conditions for the construction of housing and the low rate of preference may have affected the housing vacancy rate of the neighborhood.

4.4.5. Dr. Ziya Kaya Neighborhood

The vacancy rate of Dr. Ziya Kaya Neighborhood is 0,23 which is the lowest rate is in the Gemlik. It is 1 - 1,5 km away from Gemlik Square. It is a big neighborhood in terms of space and population. Floor heights vary according to different parts of the neighborhood. The number of floors along the coastline (Figure 4.12), Istiklal Street and Orhangazi Street (Figure 4.13) ranges 5-7 floors. It ranges between 1-5 floors from the inner neighborhood to the Ring Road. The high buildings along Istiklal Street and narrow vehicle capacity of the street decrease the social infrastructure areas and increase the building density. Density decreases in the area to the east of the ring road. There are plenty of vacant land in this area. Up to a maximum of 4 floors can be seen in across the ring road. Map 4.17 and Map 4.18 show that there is a change in the inner parts of the neighborhood and in the vicinity of the ring road.

Map 4.17. Dr. Ziya Kaya Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.18. Dr. Ziya Kaya Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.12. Dr. Ziya Kaya Neighborhood along the Coastline

(Source: Personal Archive, 2019)

Figure 4.13. Dr. Ziya Kaya Neighborhood along the Istiklal St. and the Orhangazi St.

(Source: Personal Archive, 2019)

Figure 4.14 Inner parts of the Dr. Ziya Kaya Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.15. The total number of construction permits in 8 years is 256. The new housing construction is carried out in the inner parts of the neighborhood in the basis of the existing parcels, and in housing development areas of the vicinity of the ring road.

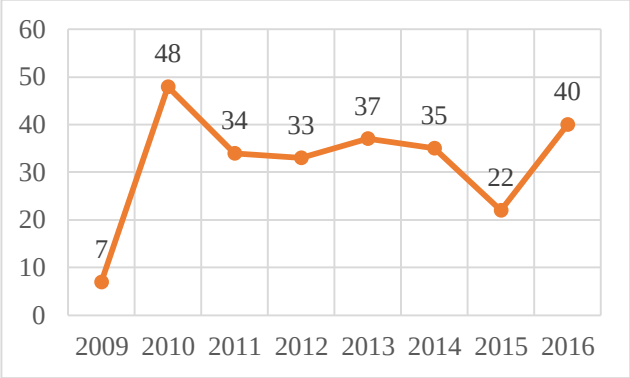


Figure 4.15. The Number of Construction Permits in Dr. Ziya Kaya Neighborhood

(Source: Gemlik Municipality)

According to observations, there are houses from all ages for sale and for rent in the neighborhood. Moreover, the number of vacant housing of Dr. Ziya Kaya Neighborhood is in average level compared to other neighborhoods. However, it is one of the neighborhoods in Gemlik where the number of total housing and households are high. When viewed from this aspect, it can be said that the preference of the neighborhood is high. The reason is that the neighborhood is in the central location and there is a high likelihood of finding suitable housing for people from every income segment. Therefore, its vacancy rate is relatively low compared to other neighborhoods. However, there are many housing + trade building structure in the neighborhood, so estimated vacancy rate is higher than 0,06. The reason is that the housing + trade units were not keep as separate data in national address database.

4.4.6. Esref Dincer Neighborhood

The vacancy rate of Eşref Dinçer Neighborhood is 0,41. Neighborhood boundary extends from the city center to the ring road. Buildings close to the center are generally 5 floors. Social infrastructure areas in this area are inadequate and the roads are

narrow. Therefore, housing density is high in the central area. Towards the ring road, empty areas are increasing and housing density decreases. Since the eastern part of the ring road in the neighborhood is a new development area, social infrastructure areas are insufficient. The number of floors are usually three. The housing development in the neighborhood can be examined from Map 4.19 and Map 4.20. It can be said that most of the development occurred near the ring road.

Map 4.19. Eşref Dinçer Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.20. Eşref Dinçer Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.16. Eşref Dinçer Neighborhood in the Central Area

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.17. The total number of construction permits in 8 years is 207. It is one of the neighborhoods with highest construction permits issued.

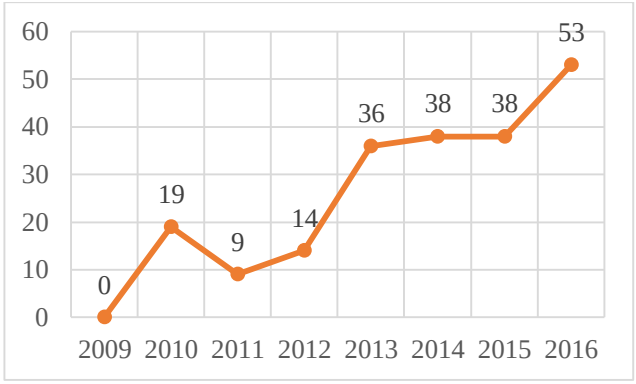


Figure 4.17. The Number of Construction Permits in Eşref Dinçer Neighborhood

(Source: Gemlik Municipality)

Consequently, Eşref Dinçer Neighborhood has the highest value of the number of total housing and vacant housing in the Gemlik. . In addition to the renewals on the existing

parcel, the high number of housing units is due to the fact that new houses have been built near the ring road. However, its vacancy rate is high compared to other neighborhoods. This can be a sign for that there is over production in the neighborhood. Additionally, the reason for the high number of the vacant housing is that these new houses are waiting for buyers. Therefore, both over production and less preferableness of the neighborhood could be the reason of high vacancy rate. Apart from new built housed, there are also houses that could not be sold even after a few years of construction. The reasons why these dwellings are not preferred may be: being far from the center, difficult to reach with other parts of the city, requiring special vehicles and not meeting the expectations in terms of price / housing properties. In addition, because near the ring road there are areas where immigrants live, the area is not preferred.

4.4.7. Halitpasa Neighborhood

The vacancy rate of Halitpaşa Neighborhood is 0,35. It is 600-650 m away from Gemlik Square. It is the smallest district of Gemlik. It is one of the oldest settlements. The number of floors of the building is 6-7. There are 5 floors buildings in the inner part of the neighborhood. The roads are narrow, the building blocks are small and the social infrastructureareas are insufficient. Therefore, the building density is high. Map 4.21 and Map 4.22 show that there is no change in housing development.

Map 4.21. Halitpaşa Neighborhood in 2006

(Google Earth, April, 2006)

Map 4.22. Halitpaşa Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.18. Halitpaşa Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.17. The total number of construction permits in 8 years is 4.

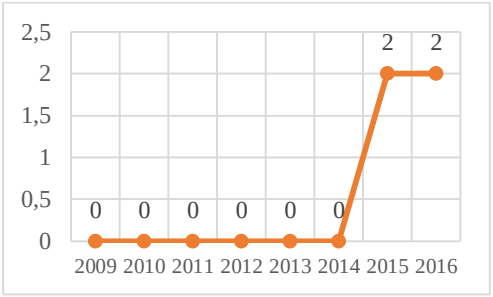


Figure 4.19. The Number of Construction Permits in Halitpaşa Neighborhood

(Source: Gemlik Municipality)

According to observation, the number of houses for rent and for sale are low in the neighborhood. Due to its small area the number of total and vacant houses is low compared other neighborhoods. However, there are old buildings that cannot be used, the used buildings are also old and low quality. Moreover, there is a lot of historical asset in the neighborhood. The fact that Halitpaşa neighborhood is one of the old neighborhoods in the Gemlik and there is not enough empty space for housing construction. It can be said that there is a vacancy due to low demand for this neighborhood.

4.4.8. Hamidiye Neighborhood

The vacancy rate of Hamidiye Neighborhood is 0,34. It is located adjacent to the south of the city center. The number of floors of the building is 6-7 in the coastline, 5 along the Istiklal Street, Orhangazi Street and Yenipazar Street, 2-4 in the inner part of the neighborhood. Commercial functions is seen on main streets. The eastern part of the ring road is a residential development area. This area includes vacant fields and gardens. The houses are generally 2-3 floors. Map 4.23 and Map 4.24 indicate that most of the housings developed around the ring road and eastern part of the ring road.

Map 4.23. Hamidiye Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.24. Hamidiye Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.20.Hamidiye Neighborhood along the Istiklal St. (left), along the Orhangazi St. (right)

(Source: Personal Archive, 2019)

Figure 4.21. Hamidiye Neighborhood in Eastern Part of the Ring Road

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.22. The total number of construction permits in 8 years is 275. Between 2009 and 2016, the most construction permits were given to Hamidiye neighborhood.

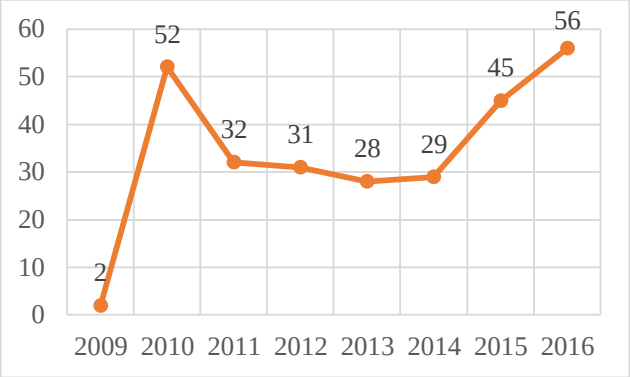


Figure 4.22. The Number of Construction Permits in Hamidiye Neighborhood

(Source: Gemlik Municipality)

Observation from the neighborhood indicate that there are housings from all ages for sale and for rent. There are old houses for rent and sale inner part of the neighborhood. The houses are old and their quality is low. Therefore, this has a decreasing effect on housing demand in these part. Although there are better quality houses in the eastern part of the ring road, their location reduces their preferability.

4.4.9. Hisar Neighborhood

The vacancy rate of Hisar Neighborhood is 0,61. It lies to the south and southwest of the city. It is about 1,5 -2 km away from Gemlik Square. The neighborhood is inclined. Transportation to the neighborhood is provided by buses with 1 hour intervals. At the beginning, 1-2 floors house with garden was seen. Additionally, there were wide olive fields. In recent years, the number of houses has increased. The number of floors has increased and generally, 5-7 floors housing is observed in the neighborhood. There are no social infrastructure areas. Housing density is low. The size of housing development is seen clearly from Map 4.25 and Map 4.26.

Map 4.25. Hisar Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.26. Hisar Neighborhood in 2018

(Google Earth, August, 2018)

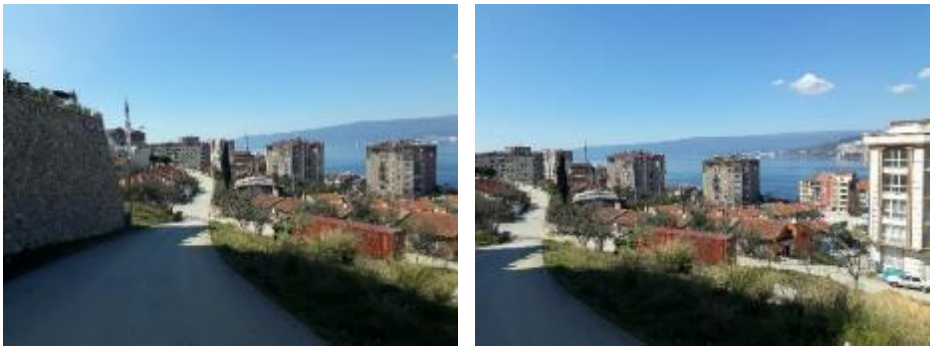


Figure 4.23. Initial Residential Settlements and New Housing in Hisar Neighborhood

(Source: Personal Archive, 2019)

Figure 4.24. New Constructions in Hisar Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.25. The total number of construction permits in 8 years is 136. Unlike the neighborhoods in the central area, there are large areas for housing construction. Addition to housing construction on the basis of parcels, construction companies are often dominated in the field.

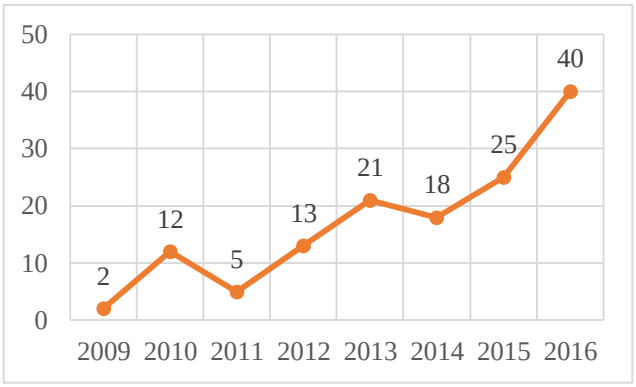


Figure 4.25. The Number of Construction Permits in Hisar Neighborhood

(Source: Gemlik Municipality)

Observations in the neighborhood display that new housings for sale are in the majority and it can be said that new houses are being built for sale purposes. Hisar is one of the neighborhoods where the total number of houses and vacant housing are high. At the same time, the number of households is average compared to other neighborhoods. Therefore, its high vacancy rate is originated from over production.

This supports the fact that it is a new developing neighborhood as seen in the field study.

4.4.10. Kayhan Neighborhood

The vacancy rate of Kayhan Neighborhood is 0,37. It is located north of the city center. The east of the neighborhood is inclined. The number of floors of the building is 6-7 in the coastline, 5 in the inner part of the neighborhood. The roads are narrow, the building blocks and parcels are small. Thus, the building density is high. The social infrastructure areas are insufficient. When comparing Map 4.27 and Map 4.28, there is no appreciable housing development in the neighborhood.

Map 4.27. Kayhan Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.28. Kayhan Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.26. Kayhan Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.27. The total number of construction permits in 8 years is 15.

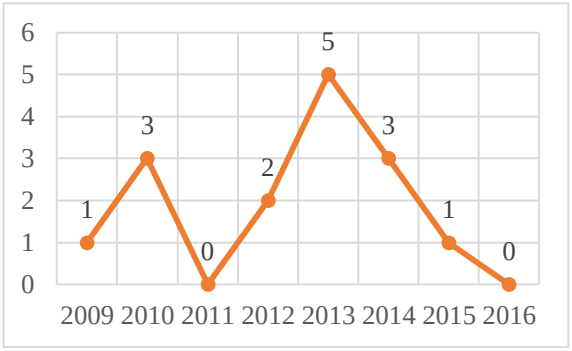


Figure 4.27. The Number of Construction Permits in Kayhan Neighborhood

(Source: Gemlik Municipality)

The fact that Kayhan Neighborhood is one of the old neighborhoods in the Gemlik and there is not much land for new housing construction because the housing density is already high. Apart from this, there are historical buildings and archeological site in the neighborhood. For this reason, construction is limited and new dwellings can be built on existing plots. Its vacancy rate (0,37) is higher than 0,06 and this is due to low housing demand in the neighborhood.

4.4.11. Orhaniye Neighborhood

The vacancy rate of Orhaniye Neighborhood is 0,38. It is about 800-900 m away from Gemlik Square. It is a neighborhood built on steep slope. It overlooks the Gemlik Gulf.

Kumla Street has divided the neighborhood into 2 main parts. The area at the bottom of the street is the coastal settlement. The number of floors along the coastline is 6-7. Building quality is good. The number of floors and the quality of the structures towards the inner areas is decreasing. Low profile groups usually live in the upper part of the street. Roads are narrow and inclined, there is no social infrastructure areas. The number of floors is usually 2-3. The quality of the building is bad. Additionally, 7-storey buildings were built in the areas near the ring road. The change in the neighborhood can be seen by comparing Map 4.29 and Map 4.30. There is not noticeable change in the housing structure.

Map 4.29. Orhaniye Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.30. Orhaniye Neighborhood in 2018

(Google Earth, April, 2018)

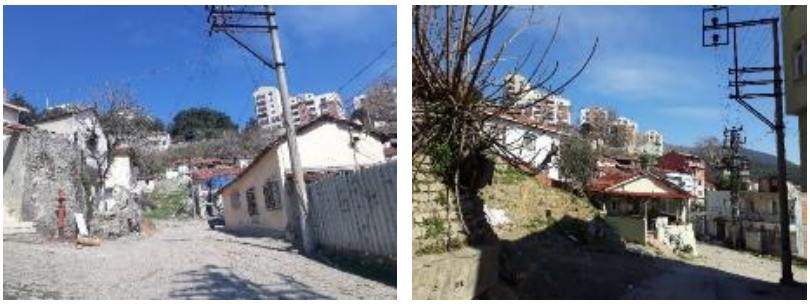


Figure 4.28. Orhaniye Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.29. The total number of construction permits in 8 years is 2.

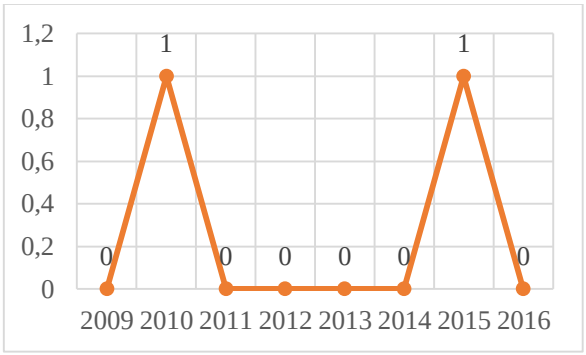


Figure 4.29. The Number of Construction Permits in Orhaniye Neighborhood

(Source: Gemlik Municipality)

Orhaniye neighborhood is one of the old neighborhoods. The residential construction areas are few because housing density is high in the coastal section. The inner part of the neighborhood is not preferred for housing construction as it is the area where the low profile groups live. According to observations, the number of houses for rent and for sale are low. Moreover, there is a lot of empty houses in the neighborhood. The quality of houses is low. Although it is close to the center, the preference of the neighborhood is low because of low profile groups and low qualities. Therefore, these create a housing vacancy.

4.4.12. Osmaniye Neighborhood

The vacancy rate of Osmaniye Neighborhood is 0,25. Towards the ring road of the slope is increasing in the neighborhood. The number of buildings floors close to the city center is generally 5. The number of floors decreases towards the inner parts of the neighborhood. However, the number of new buildings floors close to the ring road is generally 7. The roads are narrow and building blocks is contiguous building. Thus, building density is high. The social infrastructure areas are insufficient. There is no large-scale housing development in the neighborhood (Map 4.31 and Map 4.32) because the border of the neighborhood is limited to the cemetery area.

Map 4.31. Osmaniye Neighborhood in 2006

(Google Earth, April, 2006)

Map 4.32. Osmaniye Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.30. Osmaniye Neighborhood

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.31. The total number of construction permits in 8 years is 45.

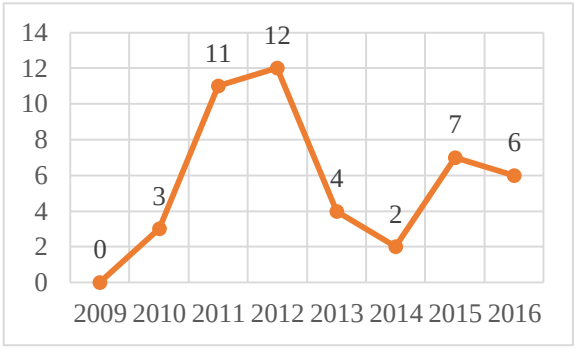


Figure 4.31. The Number of Construction Permits in Osmaniye Neighborhood

(Source: Gemlik Municipality)

In conclusion, there are commercial areas along the street in the neighborhood. Osmaniye is an old neighborhood and there are archeological sites. Moreover, new homes have been built in areas near the ring road and generally housing density is high. Additionally, its population level is high. When viewed from this aspect, it can be said that the preference of the neighborhood is high. The reason is that the neighborhood is in the central location and there is a high likelihood of finding suitable housing for people from every income segment. In this context, its vacancy rate is low compared to other neighborhoods. However, its vacancy rate (0,25) is higher than 0,06 and the reason is that there are vacant houses in the historical part of the neighborhood. It can be stated that the reason of vacancy is originated from low demand.

4.4.13. Yeni Neighborhood

The vacancy rate of Yeni Neighborhood is 0,40. It is located to the north of the city center and is bounded by the ring road. The area near the center is one of the oldest settlements. The buildings near the city center are 3-4 floors. The roads are narrow. As moving towards the ring road, the empty areas are increasing and in recent years there have been new developments with this area. The number of floors close to the ring road is generally 6-7. When looking at the maps (Map 4.33 and Map 4.34), it can be seen that there are housing developments in the regions close to the ring road.

Map 4.33. Yeni Neighborhood in 2006

(Google Earth, August, 2006)

Map 4.34. Yeni Neighborhood in 2018

(Google Earth, April, 2018)

Figure 4.32. Interior Part of Yeni Neighborhood

(Source: Personal Archive, 2019)

Figure 4.33. Yeni Neighborhood Near the ring road

(Source: Personal Archive, 2019)

The number of construction permits from 2009 to 2016 is shown in Figure 4.34. The total number of construction permits in 8 years is 65.

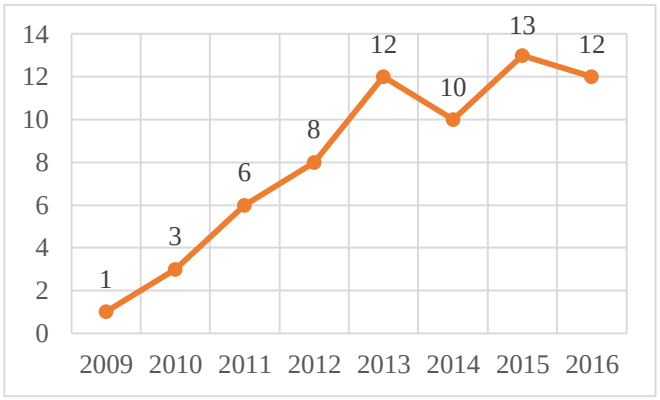


Figure 4.34. The Number of Construction Permits in Osmaniye Neighborhood

(Source: Gemlik Municipality)

Observation in the neighborhood display that there is a lot of vacant houses in the inner part of the neighborhood because the quality of the houses is very low and this decreases their preferability. Addition to the low demand of inner parts, another reason for the high vacancy rate of the Yeni neighborhood is the new development near the ring road. These areas were filled by construction companies with the possibility of vacant lands.

4.5. Evaluation of the Findings and Identification of the Vacancy Pattern

In the light of all the facts and observations above, comparison of some information by neighborhoods are shown in Table 4.5, and 13 neighborhoods tried to be put in order according to their historical development.

Table 4.5. Comparison of Some Information by Neighborhoods

Neighborhood Name	*The Estimated Housing Vacancy Rate*	*Housing Status*	*Total Number of Construction Permits (2009-2016)*	*The Share of Houses Available for Sale and for Rent in the Total Housing Stock (1)*	*Value of Houses for Sale (TL/m2)(2)10*
Balıkpazarı	0,31	Old	4	5,11	1011,0
Demirsubasi	0,39	Old	8	4,20	942,0
Halitpasa	0,35	Old	4	2,30	1233,0
Kayhan	0,37	Old	15	2,96	1029,0
Orhaniye	0,38	Old	2	2,37	1470,0
Ata	0,70	Old + Summer Houses	82	0,71	1684,0
Osmaniye	0,25	Mostly Old + New	45	3,25	1076,0
Dr.Ziya Kaya	0,23	Old + New	256	2,25	1278,0
Esref Dinçer	0,41	Mostly Old + New	207	3,28	1185,0
Hamidiye	0,34	Mostly Old + New	275	2,30	1333,0
Cumhuriyet	0,31	Mostly New + Old	130	4,30	1720,0
Hisar	0,61	New	136	6,75	1889,0
Yeni	0,40	New	65	3,57	1493,0

(Source: (1) calculated by author on the basis of data provided by Hürriyet Emlak and Sahibinden.com; (2) www.endeksa.com)

[10] Endeksa.com produces unit prices of house for sale with a certain deviation rate over house prices for sale in the market.

Seven residential vacancy patterns with different characteristics were identified. At this point, it is good to repeat that while trying to analyze the housing vacancy patterns, neighborhood boundaries are taken as basis. These residential vacancy patterns can be explained as follows:

4.5.1. The First Residential Vacancy Pattern

The characteristics of the first vacancy pattern:

- Vacancy rate: range between 0,30-0,39
- Low demand due to old housing stock
- Low quality houses
- Limited housing production, low construction permit
- Legal restrictions related to housing – registered buildings
- Low housing value
- Close to the center

First residential vacancy pattern is seen in Balıkpazarı, Demirsubasi, Halitpasa, Kayhan, Orhaniye, Osmaniye and Hamidiye Neighborhoods. According to the estimated vacancy rates, it can be argued that in old residential areas vacancy rates vary between 0,30 and 0,39. Taking into account the limited housing production in these neighborhoods for a number of reasons, it can be stated that the vacancy is caused by low demand. The snapshot information of housing for sale and for rent is less than expected considering estimated vacancy rate. The reason is that the old housing stock in the majority in these neighborhoods and some structures are registered building. Furthermore, there are archaeological sites within the borders of some neighborhoods and it is within the borders of conservation development plan. Apart from these, there are also dwellings which are idle due to their low quality. This situation causes the residences in these areas cannot enter the rental or sale housing cycles. In this context, in some areas of the neighborhood, the formation of decayed areas is inevitable. The values of housing for sale in these neighborhoods have lowest

values compared other neighborhoods. This situation supports the presence of decayed areas in the neighborhoods.

Besides mentioned reasons, high earthquake hazard in Gemlik can be mentioned as the reason affecting the demand. With delegated legislation dated on December 27, 2017[11], it was brought to the agenda to move the houses in the plain of Gemlik district to the neighborhoods on the slopes. It is thought that neighborhoods in the plain are in more danger than the neighborhoods on the slope. So that, households may also show low demand due to the earthquake because these neighborhoods are located on the plain. However, a comprehensive study should be conducted to fully understand the relationship between vacancy and seismicity.

4.5.2. The Second Residential Vacancy Pattern

The characteristics of the second vacancy pattern:

- Vacancy rate: 0,61
- New housing stock, newly developed ares
- Excess housing production
- High quality houses
- Suitable areas for housing production
- High housing value
- Away from the center

The second vacancy pattern is seen in Hisar neighborhood. Hisar neighborhood has the second highest value (0,61) in the estimated vacancy rate ranking. The share of houses available for sale and for rent in the total housing stock indicates that the new housing units which be released to the market are in the majority. Construction permits on parcel basis also support this situation. At this point, it should be noted that although it is a newly developing area and a neighborhood with a high vacancy rate, the reason for the fact that construction permits are less than the neighborhoods close

[11] Resmi Gazete dated 24.12.2017 and No. 30280 Decision No: 696

to the center, while construction is being carried out on small parcels in the central neighborhoods, it is observed that there is a multi-buildings constructions on a single parcel. Therefore, the neighborhood shows different vacancy pattern from the city center and the vacancy rate of Hisar tends to decrease. On the contrary, the vacancies in the center do not tend to decrease, their vacancy could either raise the issue of urban regeneration or these areas in the center could turn into decayed structures.

4.5.3. The Third Residential Vacancy Pattern

The characteristics of the third vacancy pattern:

- Vacancy rate: 0,70
- Summer houses
- Low demand due to unregistered population
- High quality houses
- High housing value

Another vacancy pattern is shown in Ata Neighborhood. The reason for the high vacancy rate in Ata neighborhood is the development of summer residence in the neighborhood. Although it has the highest estimated vacancy rate (0,70), the share of houses available for sale and for rent in the total housing stock is negligible and it is one of the neighborhoods with high the value of houses for sale. In this context, these confirm that the high vacancy rate is due to the number of households in the formula (p. 78). In other words, the residents profile is generally summer house vacationist and they do not use the residences in the Ata Neighborhood as their permanent address. So that, they were not calculated in the number of households.

4.5.4. The Forth Residential Vacancy Pattern

The characteristics of the forth vacancy pattern:

- Vacancy rate: 0,41
- Low demand due to:
    - Low quality houses in the center

    - Distant houses around the ring road
- Excess housing production
- Average housing value compared to the other neighborhoods

The forth vacancy pattern is observed in Eşref Dinçer Neighborhood. It is one of the neighborhoods that have both old and new housing stock. Its vacancy rate is 0,41. Its vacancy rate is similar to the vacancy rate of the central neighborhoods. However, Eşref Dinçer neighborhood had empty suitable areas for housing construction different than 1st pattern, so that housing production activities were generally carried out near the ring road in addition to constructions in the inner parts of the neighborhood. This situation is supported by the high number of construction permits. Moreover, the share of houses available for sale and for rent is also supports this situation in a way. Its vacancy can be either increase very slowly or can be fixed around it. This may be caused by low demand for low-quality homes in the neighborhood close to the city center and low demand for distant homes around the ring road. Despite the newly built houses, the average value of housing supports this situation. Additionally, there may be low demand for this neighborhood located on the plain due to seismicity.

4.5.5. The Fifth Residential Vacancy Pattern

The characteristics of the fifth vacancy pattern:

- Vacancy rate: 0,40
- A mix of first and second pattern
    - Old houses, Registered building
    - New housing areas, Excess housing production
- Low demand due to low quality houses
- High housing values due to newly built housing

The fifth pattern is seen in Yeni Neighborhood. It includes both old housing stock and new housing stock. It shows some similar characteristics with Hisar Neighborhood. The value of house for sale and the share of houses available for sale and for rent are

high relatively compared to other neighborhoods due to new built houses. However, the inner parts of Yeni Neighborhood contains low quality houses and archeological site. In this context, this situation can cause Yeni Neighborhood not to develop like Hisar Neighborhood.

4.5.6. The Sixth Residential Vacancy Pattern

The characteristics vacancy pattern:

- Vacancy rate: 0,23
- High demand due to suitable houses for all income groups
- Average housing value compared to the other neighborhoods

The other pattern is observed in Dr.Ziya Kaya Neighborhood. It has lowest vacancy rate. There are both new housing and old housing stock. The empty parcels in the inner part and the empty areas near the ring road has been filled in recent years. The reason of low vacancy rate in Dr. Ziya Kaya is its high demand. Although the number of construction permits is high compared to the others, the low share of houses available for sale and for rent may be evidence of high demand. The average value of houses increases its preferability because it is suitable neighborhood for middle income families.

4.5.7. The Seventh Residential Vacancy Pattern

The characteristics seventh vacancy pattern:

- Vacancy rate: 0,31
- High demand due to status symbol
- Excess housing production
- High housing value

The last residential vacancy pattern is seen in Cumhuriyet neighborhood. Its low vacancy rate is due to high demand for neighborhood. Residing in Cumhuriyet Neighborhood has been seen as a symbol of status, so that its preferability has

increasing and this effects the housing supply. The number of construction permits and the satellite images (p. 87) can be evidence for high housing supply. In addition to its high demand, the value of houses in Cumhuriyet Neighborhood make different it from the others. Since high demand and luxury lifestyle increase the value of houses.

CHAPTER 5

DISCUSSION AND CONCLUDING REMARKS

5.1. An Overview of the Study

Residential vacancy and its reasons have undeniable significance in creating and maintaining sustainable urban development. However, in Turkey, the issue is not given due consideration, although residential vacancy is highly significant from the urban planning and housing policy perspectives. Housing production in Turkey has increased since the early 2000s by virtue of government policies aimed at increasing the number of housing. The fact that housing is seen as the leading sector for economic growth and the solution of unemployment in the short term has a significant effect on this increase. As a result of this increase, housing vacancy has become an essential problem in terms of economic and urban aspects. This situation was reflected in the housing policies, and both government and large-scale construction firms organized several sales campaigns.

The concepts of housing bubble and vacancy, which came up especially with the housing crisis, have been on the agenda of foreign countries and have taken place in the literature which is related to housing stock vacancy. The growing interest of both the media and the government in housing vacancy is a most apparent indicator of the need to improve the understanding of housing and housing vacancy. Yet, Turkish literature about the residential vacancy is scarce not only due to data limitations but also the perception of housing problem as a problem of increasing the number of housing units supplied.

High residential vacancy rates is a problematic situation from the urban planning point of view. First of all, it is an indicator of inefficient resource allocation. Secondly, in areas where high vacancy rates go hand in hand with low demand, property

abandonment and urban decline are inevitable. This also leads to social and environmental problems. Thirdly, areas where high vacancy rates are due to excess housing production, are examples of unjustified urban spatial expansion. Urban spatial expansion means high technical and social infrastructure costs as well as the loss of open green land or agricultural land in the periphery of the cities. And last but not least, as Vakili-Zad and Hoekstra (2011) note, high vacancy rates create a risk for the functioning of the housing market. In other words, it creates problems in terms of property values, management and maintenance, affordability, and preferability.

Due to the above mentioned significance of the issue from the urban planning point of view, examining the residential vacancy patterns in Turkey become a current necessity considering the high housing output created in the country since the early 2000s, and policies need to be developed in order to manage residential vacancy. Moreover, literature review of this study displays that different reasons could cause housing vacancy. Considering the importance of the locality when making decisions about housing, it can be said that the reasons of housing vacancy rates are specific to area. In this context, the concept of residential vacancy pattern become the main topic of this study.

This thesis aims to examine residential vacancy from a broader perspective to understand whether it differs within the urban housing market and if so, whether these variations originate from different reasons. In other words, this thesis aims to identify different residential vacancy patterns. This requires to find answers to the following questions: Does the spatial distribution of vacancy rates display a homogenous pattern? Is it possible to identify different residential vacancy patterns in the housing market? With these questions in mind, this study examines the residential vacancy patterns with respect to high/low demand and excess housing supply.

5.2. Residential Vacancy Patterns Identified in Gemlik Case

This study identifies seven different patterns of vacancy in Gemlik Case. Vacancy patterns that could be observed in other Turkish cities are not limited to the ones

defined in this study. Also, not all the patterns identified in Gemlik Case may be valid for different cases. The identified residential vacancy patterns and their general characteristics are summarized in Table 5.1.

Table 5.1. The Summary of Identified Residential Vacancy Patterns and Their General Characteristics

Patterns	***General Characteristics***
1st Pattern	• Vacancy rate: range between 0,30-0,39 • Low demand due to old housing stock • Low quality houses • Limited housing production, low construction permit • Legal restrictions related to housing – registered buildings • Low housing value • Close to the center
2nd Pattern	• Vacancy rate: 0,61 • New housing stock, newly developed area • Excess housing production • High quality houses • Suitable areas for housing production • High housing value • Away from the center
3rd Pattern	• Vacancy rate: 0,70 • Summer houses • Low demand due to unregistered population • High quality houses • High housing value
4th Pattern	• Vacancy rate: 0,41 • Low demand due to: ▪ Low quality houses in the center ▪ Distant houses around the ring road • Excess housing production • Average housing value compared to the other neighborhoods
5th Pattern	• Vacancy rate: 0,40 • A mix of first and second pattern ▪ Old houses, Registered building ▪ New housing areas, Excess housing production • Low demand due to low quality houses • High housing value due to newly built housing
6th Pattern	• Vacancy rate: 0,23 • High demand, suitable houses for all income groups • Average housing value compared to the other neighborhoods
7th Pattern	• Vacancy rate: 0,31 • High demand due to status symbol • Excess housing production • High housing value

The studies related to residential vacancy in the literature mainly discusses the high vacancy issue due to excess housing production, which is a result of misleading

housing policies or uneven economic condition. In the case study of Gemlik, examples of this are clearly seen. Moreover, as the literature highlights, the areas which are characterized by high vacancy rates due to excess production also face with high housing prices. Such neighborhoods in Gemlik also show similar features. In other words, excess housing production leads to high housing prices in these neighborhoods. Another handled vacancy in the literature is vacancies due to low demand. Based on the literature review, this study stated that the reasons of low demand can be historical urban areas, low quality houses, changing housing expectations or economic inability to afford a house. In some of the neighborhoods in Gemlik, the residential vacancy is originated from low demand. Similar to the world examples, historical buildings and low quality housing can be the cause of this vacancy. Another investigated vacancy pattern in the literature is vacancy in shrinking cities. It is stated that the rate of this vacancy pattern is influenced by decreased population, location, dwelling form, tenure, price, and policies. This type of vacancy is not observed in Gemlik. Gemlik's population is increasing; yet some household groups are mobile and relocating as new residential projects are completed. In Gemlik, in the older part of the housing stock in the city center, owner occupied houses are observed to remain less vacant than rental housing stock. In other words, owners of the houses in the old neighborhoods are less mobile than tenants. It was stated that there is a relationship between the location of housing and vacancy in the literature. In Gemlik, it can be argued that residential vacancy increases towards the city periphery.

In the light of the significance of the vacancy concept from the urban planning point of view, and residential vacancy patterns identified in this study, it is necessary to consider different policy options to remedy problems related to vacancy. At this point, localness of plans gains importance because each vacancy pattern has to be managed by intervening in the existing or potential housing stock in that particular neighborhood. In this context, the next section will describe policy recommendations for residential vacancy patterns.

5.3. Policy Options to Manage Residential Vacancy

As discussed above, managing residential vacancy is a significant issue from the urban planning point of view and calls for area-specific policy development. The area in which the benefits of the proposals are spread can be observed due to specific local policies. In this way, the existing potential of local can be used and the demand for suggestions can be observed in a more healthy way and its continuity can be ensured.

In the Gemlik field study, different residential vacancy rates were estimated for each neighborhood. These neighborhoods were examined within the framework of some questions (p.80). When observations from the field study and estimated rates are taken together, seven residential vacancy patterns with different characteristics were identified. Each of these patterns have different implications for urban life, thus they require distinct types of intervention. Suggestions for these seven patterns are indicated below.

1st Vacancy Pattern

There are two main reasons why housing stock categorized in this pattern is vacant. The first is that the registered historical buildings need restoration but necessary intervention cannot be done due to high repair-maintenance expenses. In other words, sometimes due to disrepair buildings are not suitable to occupy. The second is that most of the stock is composed of old housing, and this old housing stock does not meet a number of contemporary needs, therefore preferability of the stock decreases (low demand phenomenon).

The most appropriate intervention to the neighborhoods where this vacancy pattern is seen is urban rehabilitation and housing renovation. A fund for improvement can be pooled for registered buildings or fund can be found by the municipality form international organizations that protect the historic fabric. Moreover, new types of housing loans can be introduced for homeowners who want to renovate their home according to the contemporary needs of daily life (i.e. loans for replacement of kitchen, bathroom and etc.).

In the rental part of the stock that remains in this pattern, with the condition of renting as a social housing, rental stock owners could be financially supported, either by local or central authorities, for maintenance and repair of their housing units. Therefore, low-income households who have affordability problems can reside in these rental social units which are established in the private rented sector.

2nd Vacancy Pattern

In the Hisar neighborhood, where second pattern is seen, high residential vacancy rate was estimated because it is a newly developed area. Its vacancy rate tends to decrease as newly built units are occupied by their users. In current situation, due to economic disruption, housing sales have slowed down. Hisar is located away from the center and dependent to private car for transportation. This situation can be solved by transportation policies in order to increase Hisar's preferability. However, it must be noted that, these types of residential location decisions which cause urban spatial expansion lead to highly expensive public investments for transportation and other types of infrastructure facilities. On the other hand, in neighborhoods displaying a similar pattern with Hisar neighborhood, new construction should not be permitted without monitoring the vacancy rate trends in the neighborhood.

3rd Vacancy Pattern

The housing stock of this area consists of detached houses and summer houses. It is crucial to state that this vacancy pattern is not an appropriate example of the vacancy rate defined in context of this thesis. However, it can be said that such neighborhoods have security problems when they are empty and bring extra burden to municipalities when they are full. This means that the municipalities have to provide infrastructure and services to a population that is not registered within their borders, and this is actually an expense that is not meaningful to meet. In this context, summer houses should be examined as a different housing problem in detail. Thus, within the scope of this thesis, it is not appropriate to offer policy or solution to vacancy due to summer houses.

4th Vacancy Pattern

The vacancy in the Eşref Dinçer neighborhood where forth pattern is seen can be the result of low demand and excess production. The reasons of low demand in the pattern are low housing quality in inner parts and distance to the center in peripheral parts. First of all, the municipality should not allow dwellings to deteriorate and depreciate. In this context, for private rental stock, the policy suggestion about renting as a social housing which is mentioned above can be feasible for the vacant dwellings in inner parts. Financial and physical measures should focused on bringing vacant dwellings back to the market. Secondly, it can be said that new construction should be limited because the vacancy duration of the neighborhood is unknown. Firstly, the vacancy trends of the pattern should be monitored, and then new construction permits should be given in a controlled manner after the vacancy rate falls below a certain level.

5th Vacancy Pattern

Yeni Neighborhood, where this pattern is observed, includes both old housing stock and new housing stock. The pattern is a mix of vacancy due to (i) new construction and (ii) low demand for aged stock. In other words, there are two different vacancy pattern in the neighborhood. For this reason, above mentioned suggestions for old stock and new construction can also be appropriate for this vacancy pattern. Apart from these, while implementing policies, avoiding spatial segregation should be taken into consideration.

6th Vacancy Pattern

For this pattern, continuity of urban services should be ensured. No further production should be allowed. Social and technical infrastructure arrangements can be made in terms of housing quality and demand continuity, which is of average value in the city.

7th Vacancy Pattern

The reasons for this vacancy pattern are high demand and excess production. Residing in this neighborhood is demanded since it is seen as a status indicator, and housing

supply responses to this high demand. Housing production in this area should be kept under control because it can lead to urban sprawl. The vacancy rate trends should be monitored in order to analyze duration of the vacancy and dwelling types which remain vacant.

Considering whole Gemlik, in order to show spatial distribution of residential vacancy and make prediction for sustainable vacancy management across the city, GIS-based urban land use change model (similar to the one mentioned in literature review, p. 22) which was developed by Lee and Newman (2017) can be remodeled according to residential vacancy.

5.4. Recommendations for Further Studies

This research has attempted to identify different residential vacancy patterns and to understand the possible reasons which led to these patterns in different neighborhoods. This research could be considered as an initial step to identify residential vacancy patterns. A further research can be conducted after eliminating the data limitation of the research. The main limitation is that the NAD data do not reflect the real number of housing stock on the basis of neighborhoods. Additionally, it is time consuming to observe the housing on a neighborhood basis one by one, and it is a process that cannot be pursued for years in terms of continuity. Thus, TURKSAT should create a database in order to track the number of housing based on neighborhood level. The database should also include some other information about the housing stock, and these are housing type, age, size, use case (vacant or occupied), vacancy duration, incidence, how many housing for rent or for sale including both vacant and occupied housing, the value of for sale and for rent. Moreover, these database should also be on the basis of spatial information. Since to establish an effective policy is dependent on the availability of reliable housing databases. If this database is created, the following studies can be performed:

- To analyze duration and incidence of housing vacancy in terms of housing types

- To analyze vacancy rates by housing types in terms of for rent and for sale
- To examine the relation between the vacancy rate and prices of housing for rent or for sale
- To investigate the relation between the vacancy rate and households
- To investigate the current effects of vacancy on neighborhood
- To interpret future effects of vacancy according to vacancy trends in order to take due precautions

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