

DOKUZ EYLÜL UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES

**EXAMINATION OF PHYSICAL AND
PERCEPTUAL QUALITIES OF
NEIGHBORHOODS AFTER PANDEMIC PERIOD**



by
Begüm SÖZEN

June, 2022
İZMİR

EXAMINATION OF PHYSICAL AND PERCEPTUAL QUALITIES OF NEIGHBORHOODS AFTER PANDEMIC PERIOD

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**by
Begüm SÖZEN**

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İZMİR

M.Sc THESIS EXAMINATION RESULT FORM

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*Oğlum
Marin'e*

EXAMINATION OF PHYSICAL AND PERCEPTUAL QUALITIES OF NEIGHBORHOODS AFTER PANDEMIC PERIOD

ABSTRACT

With the World Health Organization's declaration of the Covid-19 virus as a pandemic in March 2019, the intervention tools that also affected urban life changed the routine order. The measures taken during the fight against the pandemic, restrict the interaction of people with the place. It opens discussion that these acquired habits can appear as a lifestyle after the pandemic. It is thought that the use of space arrangement disciplines, which are required by the new lifestyle, should discuss new problems and solution proposals through spatial order.

This study aims to reveal satisfaction and expectations from residential areas after the pandemic. Narlıdere neighbourhood of İzmir Province, which has housing areas of different qualities, has been determined as the study area. A household survey was conducted to reveal satisfaction and expectations from residential areas after the pandemic. In order to determine the questions of the survey, a pilot survey was conducted with the participants with design-based and health-based specialties. These characteristics provided data for the household survey. A household survey was applied. The results of the survey, which aims to measure people's satisfaction and their future expectations, were compared with the objectively measurable physical environmental qualities. As a result of the study, the criteria that the house and its immediate surroundings should meet for people to live in a healthy housing area in the pandemic process we are experiencing today and similar situations that may be encountered in the future were discussed. As a result of the analyses, there are clues that physical environmental qualities are effective in satisfaction with housing and neighbourhood, according to the pre- and post-pandemic view. Solution suggestions have been made.

Keywords: Covid-19, healthy neighbourhoods, residential satisfaction, perceptual qualities of residential areas, environmental qualities of residential areas

PANDEMİ SONRASINDA KONUT YAKIN ÇEVRELERİNİN FİZİKSEL VE ALGISAL NİTELİKLERİNİN İRDELENMESİ

ÖZ

2019 yılının mart ayında Dünya Sağlık Örgütü'nün Covid-19 virüsünü pandemi olarak ilan etmesi ile kentsel yaşantıyı da etkisi altına alan müdahale araçları rutin düzeni değiştirmiştir. Uygulanan önlemler bu dönemdeki alışkanlıkların pandemi sonrasında bir yaşam tarzı olarak karşımıza çıkabileceğini göstermektedir. Alışagelmişin dışında yeni yaşam tarzının gerektirdiği kullanımların mekânsal düzen üzerinden yeni sorun ve çözüm önerilerini tartışması gerekmektedir.

Bu çalışma pandemi sonrasında konut alanlarından memnuniyet ve beklentileri ortaya koymayı amaçlamaktadır. Bu amaçla farklı niteliklerde konut alanları barındıran İzmir İlinin Narlıdere İlçesi çalışma alanı olarak belirlenmiştir. İlçe içerisinde seçilen mahallelerde pandemi sonrasında konut alanlarından memnuniyet ve beklentileri ortaya koyacak bir hanehalkı anketi uygulanmıştır. Anket sorularının belirlenmesi amacıyla tasarım kökenli ve sağlık kökenli uzmanlıklara sahip katılımcılara bir pilot anket düzenlenerek bu uzmanlıkların bakış açısına göre ve pandemi temelli olacak şekilde konut alanlarından beklenen nitelikler belirlenmiştir. Belirlenen bu nitelikler hanehalkı anketine veri sağlamıştır. Söz konusu anket ile çalışma alanında bulunan mahallelerdeki konut alanlarında yaşayan kişilere, tasarım ve sağlık kökenli uzmanların önerdiği konut alanı niteliklerini ve kişilerin kendi kriterlerini değerlendirebilecekleri anket sorularından oluşan hanehalkı anketi uygulanmış. Kişilerin konut alanlarından memnuniyetlerini ve gelecekteki beklentilerini ölçümlemeyi amaçlayan anket çalışması sonuçları, yaşanan konut alanlarının nesnel olarak ölçülebilir fiziksel çevre nitelikleri ile karşılaştırılmıştır. Çalışma sonucunda, günümüzde yaşadığımız pandemi süreci ve ileride karşılaşılabilecek benzeri durumlarda, kişilerin sağlıklı bir konut alanında yaşayabilmesi için konutun ve yakın çevresinin barındırması gereken kriterler tartışılmış. Analizlerin sonucunda fiziksel çevre niteliklerinin, pandemi öncesi ve sonrası görüşe göre konut ve mahalleden duyulan memnuniyette etkili olduğuna ilişkin ipuçları bulunmaktadır. Çözüm önerilerinde bulunulmuştur.

Anahtar kelimeler: Covid-19, sađlıklı mahalleler, konut memnuniyeti, konut alanlarının algısal nitelikleri, konut alanlarının çevresel nitelikler



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ABBREVIATIONS

DEÜ	: Dokuz Eylül University
WHO	: World Health Organisation
ODPHP	: The Office of Disease Prevention and Health Promotion
UCLA	: University of California
UNICEF	: UN Convention on the Rights of the Child
HES	: Hayat Eve Sığar (Life Fits Home)
ABPRS	: Address-Based Population Registration System
TÜİK	: Türkiye İstatistik Kurumu (Turkish Statistical Institute)
KAKS	: Kat Alan Kat Sayısı (Total Construction Area/ Building Block)
TAKS	: Taban Alanı Kat Sayısı (Building Base Area/ Total Yard)
İMOP	: İnşaat Mühendisleri Odası (Chamber of Civil Engineers)
BP	:Before Pandemic
AP	:After Pandemic
SPSS	: Statistical Package Social Science
BOA	: Başbakanlık Osmanlı Arşivi (Prime Ministry Ottoman Archives)

CHAPTER 1

INTRODUCTION

Shelter is one of the most basic needs of humankind since its existence. Housing, as the basic building type that meets this basic need, is a place where people spend their daily lives, their status in the socio-economic structure and their emotional relations with the environment they live in (Francescato, 1998).

The economic and technological changes that occur with globalization, which has been on the agenda since the 1980s, are rapidly changing the socio-economic and demographic characteristics of families (Preteceille, 1997). Changing living conditions all over the world and in our country also change the expectations of people regarding the residence and neighbourhood (Gülmez, 2007). Changing social structures, rapid population growth and consumer society in the 21st century have led to an increase in the importance given to housing by individuals (Öncü, 1999).

Housing is a place where all the joint and individual activities of users take place, and where morality and culture develop. At the same time, it has an important place in family life because it directs social, psychological, and economic expectations. The fact that the houses are not of sufficient quality and cannot fully meet the needs of individuals, has been one of the important problems in our country's agenda for many years. The lack of studies to determine the housing needs of users also affects the expectations and satisfaction of housing. It has now become a necessity to design and build houses that can address different socio-economic layers of the society, the structure and needs of the family, ensuring the participation of the house users in the design phase, determining, and considering the factors affecting the satisfaction of the house and its surroundings (Gülmez, 2007).

As housing is defined as the physical environment that provides shelter (DPT, 2001), at the same time, the house provides the user with a special place separate from the community they live in and offers the opportunity to stay apart from being in the community (Tekeli, 2010). Furthermore, it can have different meanings for individuals

and society (Francescato, 1993). Housing, which conceptually meets the need for shelter, also meets the physical, psychological, and socio-economic needs. Moreover, it is also expressed as a place where privacy is provided (Lawrence, 1987; Mallett 2004). For this reason, while defining the concept of housing, its social, cultural, and cognitive characteristics should be considered as well as a physical space and shelter (Tognoli, 1987). In this respect, Despres (1991) defines housing as a place where security and control are provided, where the personal thoughts and values of individuals are reflected, which constitutes continuity, where relationships with family and friends are experienced, and which is an indicator of personal status. Therefore, housing is closely related to societies worldview and cultural structures (Gür, 2000). In this context, it can be said that housing is “a heterogeneous property that can meet many needs, contain more than one feature, and whose benefits cannot be measured directly” (Ekşioğlu Çetintahra & Çubukçu, 2011).

In general, the environment can be defined as a collection of external factors that affect individuals via their perceptions (Gür, 1996). At the same time, environment is used as a concrete concept, as space-place-space (Niezabitowski, 1987). The residential environment is a concept that includes both the house and the social environment (Türkoğlu, 1993). Residential surroundings are social structure that covers the neighbourhood, city environment, geographical region, country, starting from the interior design of the house and interior furnishings. The housing environment and the relationships of individuals are in a constant interaction (Tiftik, 1995). It is possible to think of the residential environment in two dimensions as physical and social environment. Physical environment includes various physical opportunities of the neighbourhood or district. On the other hand, the social environment is referring to the similarity of factors that minimize social distance, such as socio-economic status, cultural values, customs and traditions, and lifestyles of society in the current environment. Individuals and the environment affect each other significantly. Housing environments have a strong effect on family life. For this reason, the residential environment should be arranged in accordance with the family structure, needs and characteristics (Cooper, 1975; Tognoli, 1987).

Today, the physical characteristics of the residence and the neighbourhood are accepted as one of the important indicators of the quality of life. A well-arranged house not only increases the quality of life, but also allows users to interact in terms of neighbourly relations and thus provide social integration (Bayraktar & Girgin, 2010).

The concept of environmental quality is also a measurement tool used to evaluate the quality of the artificial environment. According to some research to examine environmental quality, user satisfaction should be measured as the main criterion (Rapoport, 1990). Physical environmental qualities refer to the formation of an ecologically appropriate environment that can meet the needs of the users in the most appropriate way and protect it over time, aesthetic, considering the benefits of the users and the society (Dengiz & İncedayı, 2003). The basis of interest in determining the suitability of the residence and its surroundings for the expectations and needs of the residents and measuring the level of satisfaction stems from the acceptance of this criterion as an element of the overall quality of life (Weidemann & Anderson, 1982).

A housing settlement where personal, social and physical needs are met is also related to healthy housing parameters, which are among the quality of life variables. Thanks to World Health Organisation's (WHO) health concept, space organisation disciplines started to investigate healthy living conditions on built environment and its components on different scales. The discovery of the relationship between the unhealthy conditions, epidemics and deaths related to these, especially with the Industrial Revolution, and the relationship between housing and urban is an important factor.

Health is directly related to the living environment at the regional and global level. It covers healthy lifestyle, work, transportation, access to food, water and air quality, housing quality, infrastructure, and climate. When we look at the urban problems experienced today, we come across the titles of poverty, pollution, difficulties in accessing services and quality in housing areas. Evaluating the values in the city according to the wishes of the users, providing the transportation of the city, creating areas for the users in residential areas and green areas, ensuring social integrity, creating an environment that will allow the development of the society, providing

access to health, supporting the establishment of a safe environment, providing access to food are the working areas of the concept of healthy city (Hansluwka, 1985).

Healthy city is a concept that started with the Public Health Movement in 1980 as a result of urbanization that caused unhealthy situations for individuals and public and emerged with the Healthy Cities Project of the WHO (Rosen, 1993). The aim of the project is to create city-wide development plans with support from all sectors on social issues related to health of people living in Europe. In the following years, based on the slogan of "Health for All", the "Healthy Cities Project", which was started in 1986 with the concept of city and health, focusing on human health and well-being. The Healthy Cities Project is implemented in five-year phases, and in each phase, policies and actions are determined for both health issues from the past and current situations. Today, 6 phases of the Healthy Cities Project have been completed and Phase 7 is ongoing. Housing and neighbourhood are among the topics covered in each phase; however, it is an issue that needs to be addressed in more detail within the scope of the Healthy Cities Project in consequence of the Covid-19 outbreak.

The SARS-CoV-2 virus observed in Wuhan, China in December 2019 is called the new coronavirus and causes the New Coronavirus Disease. After its emergence in China, it has taken the whole world under its influence in a short period of three months (WHO, 2020) and caused rapid deaths. The aim in all countries is to suppress human-to-human contagion, to take all precautions and to restore health to the people. In order to investigate the cause of the epidemic and the method of transmission, the WHO started its studies in January and created a guide on epidemic management. In this guide, some simple precautions such as physical distancing, wearing a mask, well ventilated rooms, avoiding crowds and close contact, cleaning your hands regularly are required to protect from the Covid-19 outbreak (WHO, 2020). In the corona virus epidemic, measures have been taken throughout the country and the world, as well as personal precautions. After the worldwide declaration of the pandemic on March 11, 2020, the implementation of the measures taken has become mandatory (WHO, 2020). With the spread of the Covid-19 virus, it has been seen that the world is related to each other, and countries are unprepared for the pandemic.

The measures taken to combat the Covid-19 pandemic were primarily to reduce the contact of people with urban space and therefore with each other. As in many countries, people in our country have been locked in their homes for a long time due to quarantine rules. Many areas of expertise, from psychology to sociology, from architecture to urban planning, have engaged in discussions on the quantity and quality of the house itself and its surroundings during the period of confinement. While criteria such as the size of the house, the number of rooms (Rogers & Power, 2020), and the adequacy of the wet areas (Sağsöz et. Al., 2021), make the households question whether they live comfortably in their homes (Horne et.al., 2020; Tinson & Clair, 2020), the presence of a balcony/terrace/garden (Cetin & Karafakı, 2021), the distance between the buildings in the residential areas providing sufficient illumination and ventilation (Bayhan, 2020; Rogers & Power, 2020), and the use of open spaces within walking distance from the house (Ahmad et.al., 2020). In terms of criteria such as being a healthy residence, it has formed the basis for liveability discussions. Housing areas, which were determined as priority areas in the process before the pandemic, became even more important with the pandemic and brought the inquiries about healthy housing and housing environment to a critical point. It is also important that this thesis study produces data and contributes to the theoretical and practical field at a stage where these discussions are focused during the pandemic period, while discussions on healthy housing areas are currently being carried out. Considering that the renovation and transformation works carried out within the scope of the urban planning practices carried out in the cities of our country, it will be necessary to approach healthy housing areas from this perspective. Thus, it is necessary to consider the criteria of housing and housing environment, which were discussed before the pandemic but were brought into the focus of the discussion with the pandemic, within the scope of "health".

At this point, for a healthy settlement, it is necessary to identify the points where the rules foreseen by the health experts and the criteria foreseen by the urban design and planning experts coincide and/or contradict. While it is emphasized by health experts to stay indoors in the fight against the pandemic, it is expected that the qualities of indoor spaces (which focus on housing) will provide healthy conditions for households. Issues such as the presence of a garden of the house, the proper

qualifications in terms of cleanliness, contact and hygiene rules of the street where the house is located, the fact that the house can be easily accessed to green areas and urban areas were dealt with more frequently in this period, the existing housing structures and their environments were handled with a new approach. It is expected to contribute to criteria, policy, and legal legislation for the areas to be implemented. At this point, academic studies carried out before the pandemic and progressing on the theme of Healthy Cities, and the theoretical knowledge produced during the pandemic we live in, based on real and objective data in a study area, and a current analysis based on these measurements. Therefore, the results of data to be presented in this thesis will be pioneers for this field.

Within the scope of this thesis, it's also important to examine the extent the housing areas with different qualities meet the qualifications required for a healthy life, and the opinions of the design-based and health-based experts who have a say in the practices on the urban space (including the restrictions as in the pandemic period) and the opinions of the people living in the housing areas. Additionally, it is aimed to determine what kind of expectations people outside of these specialties have from their living spaces, despite a health crisis such as a pandemic. In this study, which also includes the comparison of the household survey and the objective measurements of the housing areas, it is another goal to determine in terms of which criteria the housing area patterns, which can be observed in many cities in our country, should improve to achieve a healthy settlement. At the same time, within the scope of the Healthy Cities Project, which has been initiated by the WHO for the implementation of the "Health for All" policy at the local level since 1986 and many cities from our country such as İzmir are members, it is obtained outputs regarding the regulations that should be implemented in the cities, both in the field of application and in the activities carried out in this area. It is also aimed to provide data to scientific literature.

In the second part of the thesis, the developments during Covid-19 pandemic and the issues highlighted and discussed in the literature are summarized. In this section, housing and neighbourhood concepts, design criteria, health and city relationship, healthy cities project, healthy neighbourhood concept, Covid-19 and related publications, neighbourhoods during pandemic period, environmental quality, quality

satisfaction of the neighbourhood and related studies are discussed to examine the way housing concept was handled before and after pandemic.

In the third chapter, the method of the study is explained. In this context, the content of the survey applied to create the project data, the expert survey applications used in the creation of the survey, the survey application and data collection processes are primarily specified. Then, the necessary data of the maps of the study area to be used in spatial analysis, obtaining the necessary data from the experts and households and the arrangements and additions made on the data are explained. The methods of measurements regarding the residences and neighbourhoods of the participants obtained with the survey data and the techniques used are conveyed.

In the fourth chapter, the findings obtained on descriptive and inferential analysis are discussed. These findings were explained by two different temporal processes as pre-Covid-19 and during pandemic. The changes regard on these temporal processes in the physical and perceptual evaluations of the participants about the house and neighbourhood they live in were conveyed. In addition, in this section, neighbourhood and housing measurements and the findings obtained from the survey were compared. After this comparison, the variables related to the perceptual evaluations of the neighbourhood and house characteristics were interpreted.

In the fifth chapter, a general evaluation was made about the findings, and the original aspects of the study, its contribution to the literature and what data were obtained for the decision makers in the field of application were conveyed. In addition, in this section, the shortcomings of the study and/or suggestions for new approaches with future studies are made.

CHAPTER 2

PHYSICAL AND PERCEPTUAL QUALITIES OF HOUSING AND NEIGHBOURHOODS BEFORE AND AFTER PANDEMIC PERIOD

In research on housing, it is defined as 'home' within the scope of physical and conceptual emotion and sense of belonging, and it is argued that this definition may be related to dwelling but does not always refer to (Dowling, 2008). According to Dowling (2008), the housing is just one of the areas containing physical shelter. On the other hand, the concept of home can be defined as a place handled at different spatial or physical scales. However, since the concept of house will have different connotations for people (Eastope ,2004), it suggested avoiding fixed concepts. Dowling (2008) emphasized that the concept of home should be examined by considering different disciplines. On the subject, Miller (2002) talked about the concept of "accommodating" and in connection with this, "accommodating the home" is the adaptation of people to their homes. In this context, the relationship between home and human requires a two-way harmony. The objective concept of home, which Miller (2002) also mentions, should also be perceived as a process. According to Kılıçkiran (2010), the existence of academic studies focusing on the concept of housing, has shown that research in this field has gained importance and created a field of study that concerns different disciplines such as philosophy, architecture, and geography (Ruonovaara, 2018).

Considering the research and discussions involving the definitions of dwellings, it has been seen that housing has characteristics that determine the social status, including the concept of home, housing, security, socialization, aesthetics, neighbourhood unit, belonging, individualization, accessibility, physical, emotional, cognitive, and cultural values. The concept of housing and neighbourhood includes the building blocks in which the building is located, the social environment such as neighbourhood and the house, and their social and physical relationship with each other (Ünlü, 2006). Neighbourhood is a phenomenon that includes both the house and the user, created to give people a sense of socio-psychological saturation (Kellekci, & Berköz, 2006). Fields such as psychology, geography, architecture, and planning also

contribute to the concept of neighbourhood, which is a multi-disciplinary field of study, and the problems experienced in this environment can affect the satisfaction and well-being of people (Güreman, 2011).

There are some methods used to develop residential neighbourhood. According to Türkoğlu (1993), these methods are relocation, studies for special groups, post-use evaluation, cross-cultural comparison, preferred housing types, and satisfaction. The correct planning of the housing, its environment and neighbourhood also has a positive effect on the satisfaction of the users (Bölen et al., 2006).

It is emphasized in the scientific literature that the house and neighbourhood, which are in the physical, psychological, and cultural environment, are affected by the environment they are in, while the general health, happiness and comfort of the living people should be ensured. It is emphasized that the house is the centre of life and relates to the past to meet the needs and to provide satisfaction, it is a place where there is privacy, and where people feel free and family relations are experienced (Tognoli, 1978). For this reason, many studies have been carried out to meet the needs of people living in and around the house (Lawrence, 1987).

It is known that one of the basic needs of the people in the society is active social relations (Buber, 1969). Confirmation of their existence not only in the family but also by the people around them, greeting in neighbourly relations and trust based on goodwill, indicates housing needs. In this context, belonging and love/sympathy needs, esteem needs, and self-actualization needs seem to be important. With the Covid-19 epidemic, the expectations of people from the house and its environment have changed, and physiological needs and safety needs have gained importance.

In this section, approaches to housing and neighbourhoods in the context of healthy city criteria, discussions on the Covid-19 process, housing and neighbourhood, environmental quality and satisfaction were discussed. In the last part, the literature discussed within the framework of the thesis subject was summarized.

2.1 Physical and Perceptual Qualities of Housing and Neighbourhood

Housing includes much more than a shelter. Housing provides the user with a separate space from the community they live in, protecting individuals from the effects of the external environment and at the same time keeping them in the society (Tekeli, 2010). It ensures the integrity of the family within itself and the establishment of relations outside the home (İmamoğlu & İmamoğlu, 1996). Apart from being a shelter, it determines the place and status of the user in the society.

Housing is a system that provides the physical, psychological, and socio-economic needs of individuals and communities and has different meanings for each discipline (Arpacı, 2011). The most basic definition of housing is that it is a physical environment that meets the shelter needs of people (DPT, 2001). Hoffman and Kremer (1986) defined the house as spaces and connections that contain many functions so that people can sustain their mistakes. On the other hand, housing has been shaped, changed, and developed according to needs. Housing, which has different meanings for people, meets the physical, psychological, and socio-economic needs of individuals. Apart from being defined as a shelter, it is a place that has a social and cultural function and contains cognitive features (Lawrance, 1987). In this context, the house is a place where security is provided, social relations are experienced, continuity is formed, and it shows individual status (Mallet, 2004).

Housing is a human need. With the urban developments, the expectations from the housing and the qualities that are satisfied with the changing human needs are also changing. In the current situation, it is necessary to examine human needs before the factors affecting the satisfaction with the residence.

Maslow's (1943) hierarchy of needs is one of the theories used to determine the residential satisfaction of the user. According to this theory, human needs are categorized as; (1) physiological needs (breathing, nutrition, sexuality, health, sleep), (2) safety needs (body, work, resources, morals, health, family, property), (3) belonging or love needs (friendship), family, privacy), (4) esteem needs (self-esteem, achievement, respect for others, being respected) and (5) self-actualization needs (to be virtuous, creative, unprejudiced).

Cooper developed Maslow's hierarchy of needs and created a new ranking for people living in and around the house, considering physical needs first. Physiological needs such as shelter, and nutrition are included in this list (Lawrence, 1987). Secondary needs are security, protection from anxiety and turmoil, belonging to the home and its environment, love needs, and esteem needs (Lawrence, 1987). Third-degree needs are self-disclosure, aesthetics, comfort, and socialization (Cooper, 1975). When Maslow and Cooper's hierarchy of needs is examined, it is seen that basic needs are universal for everyone, and their importance and realization levels differ from culture to culture.

From this point of view, the formation of the concept of a house from a shelter in line with human needs should be considered not only in terms of its own qualities, but also in the context of its relationship with the environment in which it is located. In this context, it is important to examine the neighbourhood as well. From this perspective Rapaport (1977) offers that, it is possible to examine the house and its environment as a physical and psychological neighbourhood unit. Thus, it is possible to examine the neighbourhood as a social and physical neighbourhood unit. According to Lawrence (1987), the social environment includes the social and economic status, cultural values, and lifestyles of the living. In terms of the physical environment characteristics, it includes features such as green and open spaces, sports fields, playgrounds, the conditions of streets or avenues, lighting, pedestrian opportunities, parking lots and environmental spaciousness (Lawrence, 1987). When viewed physically, it supports access to facilities such as sports facilities, hospitals, shopping centres on foot (Fuller, 1995; Fernandez et al., 2003), while psycho-social neighbourhood includes the communication between people (Amerigo, 2002).

Neighbourhoods cover people's daily living space and contain people's interactions with each other. Housing environments that are physically, socially, and psychologically suitable affect people positively, while unsuitable conditions affect them negatively. For this reason, it's stated that the neighbourhood should be organized according to the social structure and needs of the people (Meeks & Firebaugh, 1974; Cooper, 1975). According to Jacobs and Appleyard (1987), considering the housing and neighbourhood needs of families, they preferred places

where people could feel safe, raise their children, have areas that support personal development, have less environmental pollution and noise, and have privacy (Jacobs & Appleyard, 1987).

It has been emphasized that housing and neighbourhood are important to develop not only physically, but also socially and psychologically (Dağgölü & Lomlu, 1991). Due to the rapid urbanization that started in Europe and America in the 19th century, research on the relationship between health and city has increased rapidly. It has been observed that diseases are more common in inadequate and unhealthy housing and neighbourhoods where it was stated that there is a positive effect on health in neighbourhoods with green areas and parks (Vries et al., 2003).

Marans (1979) stated the neighbourhood needs as follows; avoiding stress in the city, living in nature, feeling safe, feeling of belonging, being able to do physical activity, social status, and privacy (Marans, 1979). Well-arranged housing and neighbourhoods both increase the quality of life and provide social cohesion (Bayraktar & Girgin, 2010).

The neighbourhood basically refers to a structure that meets the need for shelter and is sheltered against external factors. At the same time, it is defined as the place where people have emotional relationships, where daily life continues, which contains many psychological and social features that symbolize the socioeconomic status of people (Francescato, 1998). The residential environment (neighbourhood) is a concept that includes the house itself, the social environment, and the neighbourhood (Cooper, 1975).

Well-arranged neighbourhoods are the most important factors that control the physical environment and determine urban health, and today the concept of health is not only associated with medicine, but also with many disciplines. While the physical environment is formed in planning, the social environment begins to take shape around it. Unhealthy conditions and overcrowded lifestyle during the industrialization period that started with the 19th century, it paved the way for scientific research of the concept of “health” in dwelling, neighbourhoods, and cities.

When the studies on neighbourhood satisfaction are examined, it is possible to classify the design criteria at the neighbourhood level under 6 main headings: (1) Accessibility (for green areas, educational units, religious units, commercial areas, health areas, sports areas, official institutions, socio-cultural areas, public transport), (2) safety, (3) environmental perception, (4) aesthetics, (5) infrastructure opportunities and, (6) upkeep of environment (Table 2.1).

Table 2.1 The criteria of neighbourhood

The Criteria of Neighbourhood	Accessibility	To Green Areas
		Religious Areas
		To Commercial Areas
		To Health Opportunities
		To Sport Area
		To Official Institutions
		To Socio-cultural Fields
		To Public Transportation
	Safety	
	Environmental Perception	
	Aesthetic Quality	
	Infrastructure Opportunities	
	Unkeep Environment	

Accessibility of a space is one of the most important factors affecting the quality of space, and successful urban areas should consist of areas that are connected outside and within themselves, are physically and visually integrated, have no boundaries and have a circulation network (Rapaport, 1977; Amerigo, 2002; Özgür, 2009). For this reason, it is expected to create pedestrian and human-oriented areas that are easy to access. Indicators related to accessibility are related to the adequate availability of stores, educational institutions, shopping malls, clinics, public institutions, parks, hospitals, and other services and associated with well-being depending on their location (Leby & Hashim, 2010). These factors were reduced to “walking distance” and associated with accessibility, and an ideal walking time was evaluated as the distance travelled in 10-15 minutes (James, 2008; Loo, 1986).

Safety is one of the most important needs in society and the security level of the neighbourhood is the indicator that measures the safety dimension (Leby & Hashim, 2010). Physically, the safety level of the neighbourhood can be examined as the frequency of different types of crime, traffic, and health (Rapaport, 1977; Tognoli, 1987). Neighbourhood safety is not seen as the elimination of criminal elements and ensuring safety but includes all the rights of individuals to live in a safe environment (Kellekci & Berköz, 2006; Braubach, 2007). From this point of view, a safe neighbourhood environment refers to areas that have the right to information, culture and expression, the right to a different and equal identity and have tools created in this direction.

Perceptual variables are related to the feeling (emotions) created by the physical environment in humans. The satisfaction that people receive from the environment includes evaluations of the colour, smell, sounds and texture of the environment, such as the vitality, attractiveness, relaxation, and pleasantness/beauty of the environment. The perceptual assessment of the environment changes the level of satisfaction people feel from the places they live in (Ekşioğlu, 2010). Since the 1960s, the subject of "perceiving the environment" has been associated with the concepts of space perception and experience (Carmona, 2010). In particular, the concepts of identity, form, meaning, transparency, harmony, and legibility have become important elements in public open space designs and in neighbourhoods (Özdemir & Ocakçı, 2017).

Aesthetic quality is related to the extent to which the building or space is perceived as beautiful, encouraging, or original, and to what extent it reflects the culture (Erdönmez & Çelik, 2016). Aesthetic quality includes some parameters such as visual quality, order and low complexity, presentation method, historical and cultural values (Kellekci & Berköz, 2006) and the parameters grouped as perceptual, formal, and symbolic variables (Ekşioğlu, 2010). The aesthetics of a space increases the use intensity of that space and increases user satisfaction. In this direction, it is possible to examine the natural environment and built environments within the aesthetic elements (Rapaport & Hardie, 1991).

Infrastructure facilities are all the opportunities offered to facilitate the lifestyle of the people living in the country or cities and to provide all kinds of services they need (Galster, 1987). In ancient times, infrastructure included roads, drinking water and sewerage, but today it covers services such as healthy drinking water supply and distribution, wastewater and sewage, waste collection, recycling, transportation, energy distribution and communication (Kancıoğlu, 2005).

Upkeep of the environment is a concept related to the physical aging level of the place and whether it has been repaired or not (Ekşioğlu, 2010). A well-maintained and orderly environment where the buildings are in good condition and well-maintained, the parks and streets are clean, the natural vegetation is preserved, are among the environmental elements preferred by the users (Kancıoğlu, 2005).

In summary, among the basic features of a liveable neighbourhood; It is expected to have attractive public spaces, walkable streets, various land uses, green areas and parks, infrastructure and transportation opportunities, vitality, and human-scale experiences (Kılıçkiran, 2010).

It cannot be denied that there have been some changes in people's perspectives on housing with the Covid-19 pandemic. This situation has emerged as people remain closed in their homes as part of the measures taken due to the pandemic. Therefore, it is necessary to reconsider the definitions made for housing in the scientific literature within the framework of the current process via the relation between health, city, neighbourhood, and housing.

2.2 Health and City

Cities are born, grow and continue to develop in the process. As health is crucial in every field, the concept of urban health and the health status of people living in the cities are also important, and these two concepts are interrelated as expected.

One of the important factors affecting the health of people living in the city is urbanization and the health problems brought about by urbanization. The rapid urbanization with the industrial revolution and the search for solutions for the

epidemics are a process that should be examined in terms of urban development and epidemics in recent history. In such processes since the end of the 19th century, there have been important developments in reducing mortality rates in many European countries (Rapoport & Hardie, 1991).

Epidemics emerged because of unhealthy environments caused by lifestyle, natural disasters, deterioration of the environment, famines, and many reasons, and it resulted as a major event that resulted in death until its cure was discovered (Kılıç 2004). It has shown that public health is also the main support of the power of the state in the method of combating epidemics throughout history of the world. For the continuity of the state, firstly, human health and then public health should be improved (Gümüştü, 2003). The state's interest in public health emerged due to the great epidemics in 19th century Europe and public health has become one of the basic building blocks of the state.

Epidemics, famine, or long wars in the medieval period negatively affected European cities and people had to struggle with epidemics caused by infectious diseases (Özden et al., 2014). It is observed in the scientific literature that at the end of the 19th century, epidemics such as plague, cholera, and later smallpox, typhus, and tuberculosis, especially in Europe, caused the death of quite large population groups. It is also seen that the epidemic diseases in question arise due to rapid and irregular urbanization.

With the agricultural revolution, problems such as transition to settled life, access to clean water, and adaptation to the new environment have emerged. This situation has become more critical with population clusters being made in limited areas. Unproductive lands have been cultivated due to insufficient agricultural lands. This has also created difficulties in accessing food. When the medieval city structure and living conditions are examined, it is seen that the streets were very narrow, there were no toilets in the houses, access to food and drinks was limited, not everyone has plates and spoons, the ceilings of the houses were flat, and animals live together with people (Özden et al., 2014). It was stated that food scraps were spilled on the floor to feed the animals, and everything was thrown into the street because there was no sewer and garbage system (Roberts, 2012). The Plague Epidemic has emerged due to the disorder

and unhealthy living conditions in the cities. Europeans called the plague “The Wrath of God” (Roberts, 2012). Measures such as creating a clean and protected environment and applying quarantine have been taken. In addition, with the support of the local government and the church, measures such as cleaning the market areas, brushing the places where fish and meat are placed, banning garbage disposal, opening the baths, disinfecting the houses of the deceased with sulphur were taken to control the epidemic with the support of the local government and the church (Güreman, 2011). In 1350, pigs roaming the streets and trade were banned in Paris, and the first sewerage work was carried out in 1556 (Tanilli, 1986). The first quarantine application was implemented in the city of Ragusa in 1377, and the measures taken in Europe slowed down the progress of the epidemic, although it did not destroy it (Nikiforuk, 1991). Europe's complete recovery from the plague epidemic; It has been shown as changing architectural construction techniques and materials (using solid timber instead of dried timber and straw), re-planning of houses, cleaning streets and rivers, and not allowing suspicious people to cities (Huberman, 2010).

Another epidemic affecting the world is cholera which is transmitted by people who live in crowded environments in an unhealthy way, by drinking water directly or by eating food that encounters water (Ministry of Health, 2021). Poverty in the cities, which is also the cause of other epidemic diseases, and the stuffy, dark, dirty and dampness of the houses have caused the spread of the disease (Yıldırım, 2006). According to Ayar (2007), the reason for the spread of the disease in Europe is due to the polluted waters and the intake of food into the body. When those years are reviewed, it is known that the laundry was washed in the rivers, the sewage or other waste waters flowed into the same rivers and the ship bilges were poured into the same rivers (Yıldırım, 2006). In 1854, it's declared in the Journal of Public Health and Sanitary that the cause of cholera is sewage contamination of drinking water (Snow, 1856). With this explanation, sand filters are installed to purify drinking water. Since cholera is transmitted and spread by water, it is forbidden to consume seafood, vegetables, and fruits (Yıldırım, 2006). The first measures for public health started to be taken in Istanbul in 1831 (Plague, Cholera and Epidemics, 1804-1895) and sweeping and washing the streets to reduce the risk of contagion in the common areas of the epidemic in the Ottoman Empire Measures were taken such as regular collection

of garbage by the public (Sarıyıldız, 1998), not spilling butcher waste on the streets, repair, and cleaning of water channels. Particular attention was paid to cleanliness, and disinfection was applied in the preventive stations (disinfection stations).

Smallpox is one of the oldest infectious diseases in human history (Duggan et.al., 2016) and the disease has no season (Frank Fenner et al., 1988). The flowering method was a traditional method used until the modern vaccine was invented. In this method, the body is scratched, and putty is applied to the arms, so that the patients get through the epidemic slightly. The fight against the epidemic, which started with traditional methods, changed direction with the discovery of the vaccine made in Europe. The importance given to public health services has increased by training many vaccines (Ayar, 2007).

Typhus is a disease known as the disease of poverty since ancient times, which can become an epidemic during times of poverty and famine, become an epidemic during times of war and migration, and can be transmitted between people through lice (Berke, 1974). The fight against typhus was also prevented in Istanbul, the obligation to have a health check-up before using trains and sea vehicles, the cleaning of personal belongings, keeping the newly arrived soldiers under observation for 14 days, selling second-hand goods without cleaning them, instead of velvet fabric in public transportation vehicles and theatres. Precautions such as using cleaned linoleum, providing free public service to the public and giving medicines for lice were taken. In addition to these, fumigation was carried out to remove lice in the neighbourhoods where the disease was observed, whitewashing of the houses, and brushing the wooden floors with boiling water were requested. All parts of these public areas used by many people such as schools, prisons, military, ablution rooms were cleaned of dust and the furniture was thoroughly cleaned (Berke, 1974).

Tuberculosis, which emerged with the increase in population in the world (Barış, 2003). Long working hours, damp and dark houses, unhealthy and irregular nutrition have made people's bodies fit for the disease. In the 19th and 20th centuries, sanatoriums were built in the mountains to isolate tuberculosis patients who used fresh air, good nutrition, and light exercise as a treatment method (Barış, 2010).

With the Industrial Revolution, insufficient hygiene conditions in crowded cities, steamships as a result of industry, communities' mobility, and the development of railways showed that urbanism should be reconsidered. The terms unhygienic and unsanitary were used to refer to overcrowded housing conditions and high morbidity and mortality of residents (Chadwick, 1842). Overall, these contributions have shown that poor residents' health is due to unhealthy housing conditions with a relatively large number of people per room (Lawrence, 1983).

After the cholera epidemic, the Public Health Act was enacted in England due to unhealthy housing for the working class. For improving sanitation, the Public Health Law includes the construction of sewers and water channels, the supply of clean drinking water, the cleanliness of the streets, the cleaning of rivers, the collection of solid waste, the establishment of slaughterhouses and the construction of gardens for the public (Benevolo, 1971). Public health improvement studies in France were initiated by Haussmann in 1852 (Lawrence, 1983). With this law, it is aimed to make the clean water supply and sewerage system healthy and to solve the traffic problems (Yücel, 2021).

Being healthy is not only the absence of unwanted factors (Hansluwka, 1985; Kickbusch, 1991) but also a state of holistic physical, mental, and social well-being (WHO, 2016). Health is an issue that concerns all sectors, and it needs to be sustainable. At the beginning of the twentieth century, concepts such as the protection and development of individual and public health were added instead of the concept of disease only (Noack, 1986), and the concept of health began to be discussed with the society. The environment in which people live is also related to the concept of health. Unless adverse environmental conditions are improved, it is not possible to protect human health. For example, it is impossible to prevent infectious diseases in an area where contaminated water is used (Bolger, K., & Doyon, A., 2019). On the other hand, the limited health services are also related to the lack of improvement in environmental conditions.

The subjects of a healthy lifestyle, social cohesion, housing quality, work, accessibility, food, safety, air quality, water and sanitation measures, soil and solid

waste, and climate stability (Davies & Kelly, 2014). Issues such as housing quality, work, food, accessibility, safety, water, solid waste are indispensable for a healthy lifestyle (Bolger, K., & Doyon, A., 2019). Urban poverty is one of the most important issues affecting urban health. According to Adak (2002), in developed or developing countries, the health conditions of the so-called lower socio-economical classes are quite bad (Adak, 2002). Therefore, everyone should benefit from health services equally.

It is seen that causes of epidemics from the past to the present and the fight against epidemics are related to urban settlements, built environment and lifestyle. With the rapid growth of cities and industrialization, various problems have emerged in health, social and physical areas. Researching these health problems has enabled the concept of health and the city to be used together and has become an idea that matures the concept of healthy city.

2.2.1 Concept of Healthy Cities Project

A healthy city is a concept that includes many disciplines. While economists arguing that a healthy city is “renewing important values in the city and creating new spaces”, urban planners refer that a healthy city is a concept on “creating new and good physical characteristics in urban transportation, residential areas and green areas”. According to sociologist’s healthy city has to be “creating and developing social integration”. Health protection planners suggest that a healthy city’s aim is “to provide a high level of accessibility to hospitals and health services”, ordinary people approach the subject as, “to provide the opportunity to live, to protect his family, to meet his friends, to provide food and drink, to be safe, to and to live freely” (Davies & Kelly, 2014). According to Health Promotion Glossary (1998), a healthy city is a tool that continuously creates and improves physical and social environments, enables people to mutually support each other in fulfilling all the functions of life and develops their maximum potential, and expands the community resources (Health Promotion Glossary, 1998). As health is crucial in every field, the concept of urban health and the health status of people living in the cities should be related to each other.

A healthy city is not a city with a certain level of health services. As a matter of fact, a healthy city does not only take care of people's health, but also supports the creation and development of social and physical environments. The purpose of a healthy city is to create an environment that positively supports health, to improve the quality of life, to provide cleaning and hygiene needs, to provide access to health (WHO, 2019).

Evaluating the values in the city according to the wishes of the citizens, providing the transportation of the city, creating areas for the users in residential and green areas, ensuring social integrity, creating an environment that will allow the development of the society, providing access to health, supporting the establishment of a safe environment, providing access to food are the research areas of healthy city concept (Hansluwka, 1985; Badura, Kickbusch, 1991). In this respect, it can be said that a healthy city is a liveable city.

Healthy city concept started with the Public Health Movement in 1980 and emerged with the Healthy Cities Project of the WHO (Rosen, 1993). The aim of the movement and the project is to create city-wide development plans with support from all sectors on social issues related to health of people living in Europe. In the following years, based on the slogan of "Health for All", WHO implemented the "Healthy Cities Project", which was started in 1986 with the concept of city and health, focusing on human health and well-being. Healthy cities are not just a medical model of health. It has become an urban health model based on the principles of equality, cooperation, and participation, covering all sectors such as education, planning, transportation, infrastructure, industry, and security. After testing this view with the conference held in Lisbon by the WHO, the first 5 phases of the project started in 1986 (WHO, 2019).

In 1912, a conference on "Environment and Development" was held in Rio de Janeiro. By emphasizing environmental and social problems, unity between countries was ensured, and it was emphasized that the environment and health should be prioritized. For this reason, the topics of "Health for All" and "Agenda 21" were put forward, and the project was started with 11 cities selected in Europe to test these

concepts. To solve the health problems in the cities, they tried to bring the concept of health closer to everyone's interest (Aktaran & Işık, 2006).

With the World Health Meetings started in 1977 in the European Regional Office, the first steps were taken for "Health for All" and the role of governments was mentioned (Başaran, 2006). In 1984, 38 targets were set for Health for All. 5 important features that emphasize physical, psychological, and environmental well-being for individuals living in the city and associate them with the city are as: (1) Reducing inequalities in health for all countries, (2) to take measures for the attainment of full well-being and to promote health, (3) targeting Health for All, (4) making health accessible to all, (5) collaboration on health problems.

The future goal of the Healthy Cities Project is to improve the health of people in European cities. The principles of health for all were emphasized in the Ottawa Health Promotion Charter signed in 1986 which aimed to implement the project at the local level. An important threshold is the Ottawa Convention's aim to expand the project through public health control and improvement efforts. The Ottawa Charter includes 5 key factors as (1) promoting a healthy society, (2) creating a supportive environment, (3) ensuring the participation of the society, (4) directing health services in the necessary direction, and (5) developing personal abilities.

The objectives of the Healthy Cities Project include the formation, monitoring, and evaluation of health policies. The project progresses in five-year phases. The first three phases were held between 1987 and 1992 and ended with the participation of 35 cities in Europe. In its first phase, no participation network was provided, and attention was paid to the healthy society policy. The second phase continued between 1993-1992 and resulted in the regulation of public health policies and urban planning. With the Athens Conference held in June 2000, the third phase started. The main objective of the third phase is to increase the capacity for the maintenance and development of health activities in the city. 50 cities participated, and issues of equality, sustainable development and social development were discussed. The main purpose of the applications carried out in Sandnes (Norway) within the scope of the 3rd phase is to reduce the use of vehicles for commuting and sightseeing. In this way, it is aimed to

make people do their daily exercises, to reduce the risk of traffic accidents and to prevent air pollution. With this aim, bicycle lanes and pedestrian paths in and around the city centers were built. In order to ensure the physical activity and development of children, daily playgrounds, green areas, roads and parks have been created in the areas where they live, and they have ensured that they grow up in more reliable environments (Başaran, 2007). Despite the low crime rate in the Swedish city of Gothenburg, it was determined that the public was not satisfied, and a council meeting was held in 2001. At this meeting, they illuminated the cities and removed the graffiti to make the City of Gothenburg attractive for visitors and to create safe and clean spaces. In order to improve the environment, they added seating areas, lighting and basketball hoops to the parks, and took care of the plants such as pruning. A safe walking guide was created and information about maintenance, building structures, and city planning before and after was collected from the people living in the surrounding area (Leeuw, 1999).

In the 4th phase, which lasted between 2003 and 2008, policies were developed on the themes of Health Impact Assessment, Healthy Aging, Healthy City Planning and Physical activity. In the Health Impact Assessment, the determinants of health (individual, socio-economic, environment, lifestyle, and accessibility to services) are revealed. The aim of the Healthy Aging theme is to carry out international and regional studies to improve the quality of life of elderly people. For healthy aging, it is necessary to create health-enhancing environments and provide opportunities for elderly people to live independently in the city. In Healthy City Planning theme, issues such as healthy lifestyle, social unity, quality of accommodation, job opportunities, accessibility, nutrition, security, equality, air and water quality, soil and solid wastes, and climate balance are discussed. In this context, creating more attractive environments, providing transportation on foot or by bicycle, planning suitable places for social use, providing regional job opportunities, creating different modes of transportation, taking measures related to traffic, supporting food production on a local scale, providing a safe environment, and reducing pollution.

In the 5th phase covering the years 2009-2013, 3 main themes were determined as: Caring and Supportive Environments, Healthy Living and Healthy Urban

Environment and Design. Children, the elderly, immigrants, service areas and health awareness are covered under the Caring and Supportive Environments title. The topics of prevention of non-communicable diseases, prevention of alcohol and drug use, healthy nutrition, healthy environments, well-being, and happiness were examined. In Healthy Urban Environment and Design, issues related to housing and transformation, transportation, safety, planning, liveability, and public health emergencies are covered. Within the scope of the 5th phase, 47 buildings were restored, the quality of housing was increased, and the cultural revitalization of the city was ensured by applying urban transformation in the old housing areas with the urban centre revitalization policy implemented in a 13-decare residential area in the Distillery area in Toronto (Canada). In Horsens (Denmark), a social, physical, and environmental renewal project is being implemented in the districts. They aimed to improve environmental conditions to make the Vestergade area more attractive to users and to ensure equal use for all. New promenades, recreation areas, exercise areas, green areas and parks have been created in the region to ensure easy access for people (Leeuw, 1999).

The 6th phase lasted between 2014-2018. Topics covered are Improving Health for All and Reducing Health Inequalities and developing Leadership and Participatory Governance for Health. In this context, it is aimed to strengthen the life course approach and people, to regulate physical activity, nutrition and reduce the obesity rate in the European Region, to create a human-centered health system and to create resilient communities. Within the scope of the 6th phase, it was determined that the city of Milan (Italy), had problems such as traffic, pollution, housing, poor quality of the environment and poverty (Barton et al., 2003). In Molise-Calvairate (Milan), which is one of the 3 regions chosen for these problems, it is aimed to reclaim the area by transforming an old cemetery, which is used by immigrants and poses a danger to public health, into a green area.

Today, we are in the 7th phase of the Healthy Cities Projects, with almost 1400 members/ cities. Its goals are to promote health for all, to ensure equal access to health for all, to lead at the national and regional level, and to support the WHO. They focused on non-communicable diseases that could put health at risk in urban environments, poverty in children, obesity in children, and traffic injuries. It has been emphasized

that housing quality, neighbourhood design, land use, accessibility to green areas, bicycle paths and air quality affect public health (WHO, 2019). In this context, it is aimed to carry out the ongoing urbanization by keeping health in the foreground. In the 7th phase, a health-based planning is expected from the cities. With the support of local governments, it will be ensured that people's well-being, creation of safe environments for children, and support of a healthy and active life will be ensured. Inclusive studies are carried out to organize bicycle paths, create smoke-free areas, re-plan neighbourhoods, make arrangements for the disabled, ensure proximity to services and accessibility for all (WHO, 2019).

In the 7th phase, to create a clean environment, the 'An Izmir Like a Flower' project was launched on 3 August 2019 in Izmir. In this context, the municipality's vacuum road sweeping vehicles, banner removal and road washing vehicles will provide support for cleaning, while cleaning the roads and pavements will be ensured. In Japan, smokers were asked to bring portable ashtrays to use in crowded environments such as festivals.

As can be seen from the examples, the practices carried out within the scope of the Healthy Cities Project are generally at the urban scale. Neighbourhoods are an issue that needs to be addressed in more detail within the scope of the Healthy Cities Project. This situation becomes important in the face of a situation where people are closed to their homes and therefore to their neighbourhoods, such as the Covid-19 pandemic.

2.2.2 Healthy Neighborhood and Housing

Healthy neighbourhoods are structures that can be constantly creative, develop their physical and social environment, include all functions of life, and provide mutual support of people (ODPHP, 2010).

Studies to estimate the effects of neighbourhood characteristics on health began to appear in the health literature in the late 1980s and early 1990s. Most of the early studies were correlated with the census data of the neighbourhoods based on the residential addresses reported in the region where the study was conducted. One of the earliest examples was the study of whether living in a poverty zone is associated with

mortality (ODPHP, 2007). In this study it is found that those living in poor areas had a 50% higher risk of death compared to those living in non-poor areas. In another study, measurements of the socioeconomic status of the neighbourhood were made, and the results of poverty and health were evaluated (ODPHP, 2008). Although a holistic conclusion could not be reached in these studies conducted in areas defined for the census, several holistic analyses have also been published that neighbourhood census characteristics relate to mortality, disease events, or changes in health.

While making inferences about the causal effects of neighbourhoods on health, the use of neighbourhood census studies method has been a subject to be reconsidered and has led to the conclusion that socioeconomic characteristics at the individual level should be addressed (ODPHP, 2010). This situation formed the basis for determining the experimental or quasi-experimental studies for the neighbourhood unit.

Manski (1995) analysed the results of observational studies on neighbourhoods and health in 3 types of groups: (1) individual-level effects of group-level results, (2) group-level effects, (3) environmental effects (Manski, 1995). In the first group, he assessed the prevalence of an infectious disease by infecting a particular member of the group. In this observational study, he tried to determine whether there was a general social impact. In the second group, the effect of an infectious disease on the residents of the neighbourhood was evaluated. The third group examines the effects of the built environment, such as the existence of certain institutions and neighbourhood. Manski (1995) examined physical and social environmental characteristics in neighbourhood research, and studies of neighbourhood health effects are key to these environmental Studies on healthy neighbourhood impacts have identified two broad areas of neighbourhood quality that may be health-related: (1) physical environmental characteristics of the neighbourhood and (2) social environmental characteristics of the neighbourhood (Rapoport & Hardie, 1991). The physical environment includes not only traditional environmental exposures such as air pollution, but also aspects of the built environment, including land use and transportation, street design, other features of urban design and public spaces, and access to resources such as healthy foods and resources. The social environment includes the degree and nature of social connections between neighbours, the existence of social norms, levels of security and violence, and

various features of the social organization of places. The physical and social characteristics of neighbourhoods influence health through restrictions or improvements on health-related behaviours or through mechanisms that include the experience of stress and the buffering effects of social support and social connections (Rapoport & Hardie, 1991).

Emerging research on the relationship between the physical and social environments of the neighbourhood and various chronic diseases and mental health outcomes, it is examined under two main headings: (1) the physical environments and health of the neighbourhood (2) and the social environments and health of the neighbourhood. In the title of physical environments and health of the neighbourhood, the built environment characteristics of the neighbourhood such as land use patterns, density and access to destinations, street connection and transportation systems, access to healthy food, diet and physical activity were examined. Most of these studies focused on physical activity, diet, and health outcomes such as obesity and hypertension. (Çentintahra & Çubukçu, 2011) In the title of social environments and health of the neighbourhood, basic features such as social relations, social cohesion, socioeconomic infrastructure, crime rates were examined. Much of the work on neighbourhood social environments and health has focused on mental health outcomes (Rao & Thompson, 2017).

When examining neighbourhood physical environmental characteristics and health, there is overall evidence that better access to physical activity resources and healthy food is directly related to more physical activity and better diets (Kail, 2002). Nutrition is also accepted as an indicator of rights and welfare in international human rights documents. A healthy and strong life of society and individuals, supporting social and economic development and increasing the level of welfare are the basic conditions of adequate and balanced nutrition. Physical activity helps to prevent obesity, which is one of the most important health problems faced by modern societies, and to provide weight control (Prince et al., 2017). Regular physical activities reduce the risk of hypertension, regulate cholesterol, increase muscle mass, strengthen bone structure, fight depression and anxiety, and support the psycho-social development of individuals (Turkiye Physical Activity Guide, 2014). Likewise, it is possible to say

that physical activity and psychiatric diseases are also related. Performing physical activity regularly for six months, while reducing sleep pattern problems, also significantly alleviated disorders such as anxiety and depression (Ekşioğlu-Çetintahra & Çubukçu, 2011).

As seen, studies show that physical environmental characteristics of the neighbourhood are directly related to the health of individuals and society. In this thesis, the physical environmental characteristics of the neighbourhoods are included among the variables examined.

In WHO's health definition, it has been adopted as "a state of complete physical, mental and social well-being" and "a resource for daily life". From this perspective, being healthy for individuals and public is an important resource for social, economic and personal development. In this way, factors such as income, education level, occupation, social hierarchy, and housing, which are the determinants of health, most of these factors occur in cities, towns, neighbourhoods or regions where people live, learn and work. 60% of health outcomes was associated with the place where people live and socio-economic factors (Canada Senate Report, 2009).

While examining the healthy neighbourhood design criteria, "Urban Land Institute" (ULI, 2020), "Designing the Health Neighborhood" (University of Virginia, 2014), "Center for Disease Control and Prevention" (CDC, 2021), "PlanH (PLANH, 2021)" and "Healthy Cities Association" were examined (Table 3). In this direction, it has been observed that 6 main headings are common for these different approaches: (1) Accessibility, (2) Security, (3) Perception of the environment, (4) Aesthetics, (5) Infrastructure opportunities, (6) Environmental care (Table 2.2).

Table 2.2 Healthy neighbourhood criteria

Healthy Neighbourhood Criteria				
Urban Land Institute	Designing the Healthy Neighbourhood	Centers for disease Control and Prevention	PlanH	Healthy Cities Association
Accessibility	Accessibility	Accessibility	Accessibility	Accessibility
Security	Security	Security	Security	Security
Perceiving the Environment	Perceiving the Environment	Perceiving the Environment	Perceiving the Environment	Perceiving the Environment
Infrastructure Facilities	Infrastructure Facilities	Infrastructure Facilities	Infrastructure Facilities	Infrastructure Facilities
Well-Maintained Environment	Well-Maintained Environment	Well-Maintained Environment	Well-Maintained Environment	Well-Maintained Environment
Access to Clean Water	Access to Healthy Food	Pedestrian and Bicycle Friendly	Pedestrian and Bicycle Friendly	Pedestrian and Bicycle Friendly
Access to Healthy Food	Closeness to Nature	Age Friendly	Age Friendly	Age Friendly
Closeness to Nature	Circulation Alternatives	Active Life	Access to Clean Water	Healthy Transportation
Pedestrian and Bicycle Friendly	The Diversity of Land Use	Health Awareness	Access to Healthy Food	Access to Healthy Food
The Diversity of Land Use	Adequate Lighting	Smoke Free Environments	Active Life	Adequacy of Accommodation Facilities
Human Scale Streets	Active Life		Health Awareness	Active Life
Animal Friendly	Health Awareness			Health Awareness
Neighborliness	Smoke Free Environments			Smoke Free Environments
Air Quality				
Adequate Lighting				
Active Life				
Health Awareness				
Smoke Free Environments				

In the Healthy Neighbourhood criteria, it is stated that access to various activity areas (shopping centres, recreation areas, city centre and workplaces of individuals, etc.) is an important factor for health issues (Braubach, 2007). Accessibility is the ability of individuals to access various services, activities, and places to go in their environment (Özgür, 2009). At the same time accessibility affects the satisfaction of

the family members with the environmental quality of the house they live in (Fuller, 1995). In terms of accessibility to facilities, public transportation points are also among the factors that have an impact on measuring the satisfaction of the residence and its environment (Michelson, 1977; Loo, 1986).

In housing research, security is among the criteria for a healthy neighbourhood (Powell, 1987). Precautions taken against various crimes, night lighting conditions of the residential area and neighbourhood, fire, earthquake, traffic accidents and measures taken against various crimes are examined within the scope of healthy neighbourhood criteria (Loo, 1986; Amerigo & Aragonés, 1997).

It has been observed that the opportunities in the healthy neighbourhood criteria and the perception of the neighbourhood as beautiful in terms of environmental aesthetics affect housing satisfaction (James, 2008; Ekşioğlu Çetintahra & Çubukçu, 2011). In the formation of this perception, the cultural values, customs and traditions of the families, world views, lifestyles, needs, and wishes are effective (Tognoli, 1987).

Pedestrian roads, infrastructure systems, open spaces around the residence, parking facilities, maintenance of green areas, public transportation facilities have been examined within the scope of the infrastructure features of the neighbourhood (James, 2008; Tognoli, 1987; Loo, 1986).

Clean and safe drinking water is of vital importance for human health. Measuring water quality is crucial on preventing the spread of water-borne diseases and protecting people from chemical contamination. Water pollution causes serious health problems such as stomach and intestinal diseases, reproductive problems, neurological disorders, and death. In this context, access to clean water for communities ensures the long-term well-being and sustainability of the people (PlanH, 2013).

Healthy nutrition contributes to the overall health of individuals, families, and communities by promoting social, physical, and mental health at all stages of life and at all ages. Therefore, increased access to healthy food corresponds to the possibility of healthier diets, healthier weights, and lower diabetes rates (UCLA, 2008).

Healthy communities are active communities where everyone can access to parks and recreation areas that support physical activity. Well-planned multi-purpose facilities, safe and accessible open spaces, and roads support active living while at the same time bringing together groups of people of all ages and backgrounds, thus making a positive contribution to the social fabric.

Active transportation includes all human-powered travel such as walking, cycling, skating, and skateboarding. Active transport allows more people to be active in their daily lives and improve their health. Provision of active transport infrastructure results in less vehicle travel and at the same time improved air quality and efficient transport are emerging. For people to prefer active transportation, it is necessary to have roads that connect to each other, to have circulation alternatives, to provide safe infrastructures such as safe passages on the streets, pedestrian, and bicycle-friendly roads (PlanH, 2013).

Reducing the cigarette, and alcohol use has positive health, social, environmental, and financial consequences. One of the most effective ways to protect children and young people from starting to smoke and drink alcohol is to provide smoke-free and alcohol-free environments in the areas where they live, play, and go to school.

Aged and child-friendly communities are communities that provide the programs, resources, and infrastructure needed for the development of seniors, children, and youth. Such communities consider the needs of these residents in their community planning and policy work. According to the WHO (2019), an age-friendly city promotes active aging by creating opportunities for health, participation, and safety to improve quality of life as people age. An age-friendly community is good for mental and physical health as it allows seniors to stay active and connect with others, while reducing depression and heart disease and increasing life expectancy (PlanH, 2013).

According to UNICEF (2010), a child-friendly city is a form of government committed to fulfilling children's rights, including safety and health, urban development, play, social activities, and equal opportunity. A child-friendly society paves the way for a good start in life, enabling mental, social, and physical development as well as healthy lifestyle habits. These opportunities, provided in the

early stages of life, allow children and young people to develop the confidence, knowledge, and skills they need to thrive (PlanH, 2013).

From this perspective, the neighbourhood design criteria stated in are grouped under 6 main headings: (1) Access to clean water, (2) Access to healthy food, (3) Proximity to nature/open spaces, (4) Active transportation and life formation, (5) reduction of tobacco and alcohol use, (6) age friendly. It is still unclear how the variables mentioned above and discussed in both theoretical and practical studies have changed with the Covid-19 pandemic. This thesis aims to fill this gap in the field.

2.3 Covid-19

Pandemic is the general name given to epidemic diseases that spread and affect a wide area in many countries or continents in the world. According to the definition of the World Health Organization (WHO), three criteria are sought in general terms for a disease to be a pandemic. These are; (1) it is a new virus, (2) it can easily pass to humans, (3) it is constantly transmitted from person to person (Ciotti et.al., 2020).

On 31 December 2019, WHO announced that a virus emerged in China. Originally expressed as 2019-nCoV, this disease was later named Covid-19. After its emergence in China, it has taken the whole world under its influence within three months (WHO, 2019). The Covid-19 pandemic has disrupted the usual balance of social and economic life in all countries where it has spread and has pushed governments to take various measures. With the first death cases seen at the beginning of January and the detection of cases in countries outside of China, various interventions were implemented in order to control the epidemic and protect public health, such as closing schools with social isolation and restrictions, banning travel, and providing flexible or remote working opportunities. The first cases began to appear in Europe at the end of January, and on 30 January 2020, the WHO Director-General declared a "public health emergency". The WHO Director-General has established a Crisis Management Team to coordinate countries' preparations and receivables against Covid-19. While these practices have had an impact on people's daily life and working life, they have faced severe economic conditions as well as social consequences. While this situation confronts many countries, including the world's largest economies, with economic recession and crisis,

unlike the previous economic crises, it affects both developing and developed economies.

The Covid-19 virus has three common symptoms are fever, dry cough, and fatigue. Less common symptoms may also include loss of taste and smell, nasal congestion, headache, nausea, or vomiting, diarrhea, muscle or joint pain. Symptoms of severe Covid-19 disease are shortness of breath, loss of appetite, high fever, persistent pain or pressure in the chest, and confusion (WHO, 2019). There is also a possibility that the mentioned symptoms may not be observed.

With the detection of the virus being transmitted by droplets (Bayhan, 2020), the precautions that all individuals should take have been implemented and WHO has published a guideline for combating the epidemic. In this guide, some simple precautions should be taken to avoid the Covid-19 outbreak, such as physical distancing, wearing a mask, ventilating rooms well, avoiding crowds and close contact, cleaning your hands regularly, and coughing into a bent elbow or tissue. In addition to these, the WHO also takes measures such as identifying all cases, conducting tests, isolating sick people, quarantining of contacts, and ensuring public health (Rothan & Byraredddy, 2020).

However, the fact that the time taken to identify the sick people was considerably higher than the rate of transmission of the disease required arrangements to keep people away from crowded environments in order to control the epidemic. When the onset of Covid-19 is examined chronologically by country, one of the first measures taken from the moment the cases were seen in China is the ban on going out without a mask. In risky areas such as closed areas, the transition areas are limited, and controlled access is allowed from a single door. The doors of people with suspected disease were sealed and volunteers met the needs of the people. Temperatures were taken every day in the streets and in the workplaces. With the increase in the number of deaths (mortality) due to Covid-19, a nationwide curfew was imposed. In South Korea, the first case was detected on January 20. Thanks to the wide-ranging test application, virus carriers were detected and contact with them was prevented and people were quarantined. There was no curfew in the country. Instead, simultaneous

warning information messages were sent to people's phones via application. A travel ban was imposed on people who went to China within 14 days after the first virus was detected in the United States on January 21. The World Health Organization warned the public not to gather in public areas on February 17, even if the social distance rules are followed. When Europe is examined, it is seen that Italy is the most affected country. First, the Lombardy region was quarantined, then quarantine conditions covering the whole country began. All non-essential travel has been cancelled and children under the age of 14 are prohibited from going out. Among the main measures taken in Germany on March 16 are the closure of schools, travel bans, curfews, and the obligation to wear masks. Like Germany, France closed schools and universities, continued the social distance rules, and sitting in closed areas such as restaurants. Museums was determined according to the risk situation. Considering the measures taken in Norway, the person limit in public places is limited to 20. Social distance is regulated to be at least two meters. Social meeting areas such as sports halls, cinemas and theatres have been closed (Table 2.3).

Table 2. 3 The spread chart of Covid-19

Date	Event
31.12.2019	The Wuhan Municipal Health Commission in Wuhan City, Hubei province, China, reported link to Wuhan's Huanan Seafood Wholesale Market
9.01.2020	The market was closed down. According to the Wuhan Municipal Health Commission, samples from the market tested positive for a novel coronavirus.
10.01.2020	The first novel coronavirus genome sequence was made publicly available
20.01.2020	There were reports of confirmed cases from three countries outside China: Thailand, Japan and South Korea
23.01.2020	Wuhan City was locked down with all travel in and out of Wuhan prohibited
24.01.2020	The first European case was reported in France.
30.01.2020	The World Health Organization (WHO) declared this first outbreak of novel coronavirus a 'public health emergency of international concern'
11.03.2020	The Director General of the WHO declared COVID-19 a 'global pandemic'
3.04.2020	The number of confirmed COVID-19 cases reported worldwide surpassed one million
8.04.2020	ECDC provided its expert opinion on the use of face masks in public by individuals
23.04.2020	The number of confirmed cases of COVID-19 in the EU/EEA and the United Kingdom (UK) surpassed one million.
12.08.2020	The number of confirmed COVID-19 cases worldwide surpassed 20 million.
28.08.2020	ECDC launched a tutorial on 'how to wear a face mask properly'
18.09.2020	The number of confirmed COVID-19 cases worldwide surpassed 30 million.
24.09.2020	ECDC published Guidelines for the implementation of non-pharmaceutical interventions against COVID-19
29.09.2020	The number of COVID-19 deaths worldwide surpassed 1 million.
19.10.2020	ECDC published the first update of the guidance COVID-19 infection prevention and control measures for primary care, including general practitioner practices, dental clinics and pharmacy settings.
9.11.2020	The number of confirmed COVID-19 cases worldwide surpassed 50 million.
11.11.2020	ECDC published guidance on Heating, ventilation and air-conditioning systems in the context of COVID-19: first update.
19.11.2020	ECDC published guidance on the use of rapid antigen tests for COVID-19 in the EU/EEA and the UK
26.11.2020	The number of confirmed COVID-19 cases worldwide surpassed 60 million
2.12.2020	ECDC published an overview of COVID-19 vaccination strategies and vaccine deployment plans in the EU/EEA and the UK.
12.12.2020	The number of confirmed COVID-19 cases worldwide surpassed 70 million
22.12.2020	ECDC published a new overview of COVID-19 vaccination and prioritisation strategies in the EU/EEA.
1.02.2021	ECDC published a report on: Integrated COVID-19 response in the vaccination era.
4.02.2021	The number of confirmed COVID-19 cases worldwide surpassed 100 million.
29.03.2021	The number of coronavirus infections in the world have reached 150 million, while the death toll stands at 3.16 million
17.07.2021	New York City introduced a "vaccine passport" for non-essential activities
16.08.2021	Pfizer has signed a deal with the United Nations-backed Medicines Patent Pool allowing Paxlovid to be manufactured and sold under license in 95 developing countries with "the goal of facilitating greater access to the global population."
2.11.2021	British Prime Minister Boris Johnson has declared an "Omicron emergency" and offered booster jabs to everyone above the age of 18 years in response to rising Omicron variant cases
7.01.2022	Health Ministry has eliminated its "red list" of countries with high-infection rates on the grounds that travel bans have failed to stop the spread of the SARS-CoV-2 Omicron variant domestically.
17.01.2022	PCR Test Application in Airplane Travels has ended.
20.02.2022	Tourists entering will be required to undergo polymerase chain reaction (PCR) testing prior to and after
4.03.2022	Germany surpasses 25 million, Japan surpasses 8 million COVID-19 cases.
12.03.2022	North Korea reports an unspecified number of cases, its first official cases.
15.03.2022	The United States of America surpasses 84 million cases. The United States has reported one million deaths over the course of the pandemic

In short, to reduce the rate of spread of the disease, closed areas, and public spaces where the society came together were closed and people remained indoors for long periods of time. Although there are partial flexibilities and completely cancellation in

quarantine rules for most countries, the residence has turned into an area where more times is spent during the process.

2.3.1 Covid-19 Process and Measures Taken in Türkiye

Covid-19, which affected the whole world, was announced as the first case in Türkiye by the Ministry of Health on March 11, 2020. The first death due to the virus in the country occurred on March 15, so the first period of the fight against the pandemic began. Before the first case appeared, on January 10, a Scientific Committee was established to struggle the Covid-19 pandemic (Yener, 2020). International flights were stoppe. The measures taken like around the world, infrared scans, disinfection, and free mask distribution were made at the airport. On March 8, disinfection procedures started in some provinces, public places, and public transportation vehicles (Agenccies, 2020). Since the number of cases was 1,872 on March 24, it was announced on March 25 that schools were closed until April 30 (Sözcü, 2020). In the second phase of the fight against the epidemic, there is a closure of approximately 2 months across the country. Due to the rapid increase in the number of cases and death rates in May, it was announced that a 7+4-day curfew should be declared with the Scientific Committee Decision. In addition to the curfews on March 11, restrictions were imposed on parking areas and public spaces. Non-essential businesses such as cinemas, coffee shops and gyms have been temporarily closed. On May 4, 2020, President of Türkiye stated that the daily increase in patients has decreased to thousands and announced the regulations regarding the gradual stretching of the restrictions within the scope of May, June, and July. In this statement, there are articles such as limiting the 65-year-old curfew, launching barbers and hairdressers, and opening a shopping mall.

Within the scope of this second term, which Turkish Minister of Health called "Controlled Social Life", the aim was determined as preventing the epidemic and reorganizing life. With the "Life Fits Home (HES)" application, the risky situation in the environment where people are and, in the places, they want to go will be detected and the violation of social distance during the day will be detected. On August, flexible, and remote working in public institutions and organizations was allowed

(T.C. Resmi Gazete, 2020). In this context, the opportunity for children and parents to stay in their homes was provided. On January 13, 2021, the vaccine produced by Sinovac started to be implemented in Türkiye. In March, it was announced that people will be divided into "low, medium, high and very high" risks according to their risk status, and that the curfew will be lifted, and schools will be opened in low and medium risk provinces. The curfew, which was eliminated with the increasing number of cases, came to the agenda again and was implemented for 2 weeks.

The third stage of gradual normalization in Türkiye has been passed as of July 2021 (Haberler, 2021). The curfew, which has been going on for 15 months, is completely over, and many restrictions for eating and drinking places have been lifted. With the decision taken in August, it was determined that full-time education will be started on September 6, 2021, and people who are not vaccinated should have PCR tests at least 2 times a week. All businesses such as shopping malls, restaurants and barbers have been opened, and restrictions on parks and beach bands have been lifted.

Although the disease-causing feature of the Omicron variant is low, the number of daily cases increased to 94 thousand 783 in January 2022 and to 111 thousand 157 on 4 February due to its high contagiousness. This figure is the highest number of daily cases recorded since the beginning of the epidemic. The number of cases, which reached its peak in the first week of February, started to decrease again as of this date. The Minister of Health stated that the cases of Covid-19 had decreased on March 2 and announced the new decisions taken regarding measures such as the mask rule, HES code and PCR test applied in the fight against the epidemic (T.C. Resmi Gazete, 2022). In this context, the obligation to wear masks in the open air has been abolished in the new period, and it has started to be applied in closed environments according to the ventilation and distance rule. In addition, the implementation of the HES code at the entrance to institutions and organizations, PCR tests are requested from those who do not have symptoms, and the closure of classes in which two cases are seen in schools has been stopped. By March 2022, due to the decrease in the effect of the pandemic, the spread of vaccination and less impact on social life, the measures taken were loosened in Türkiye as well as in the world. Existing measures and rules regarding mask use, HES code and PCR test request have been rearranged. While the

obligation to use masks in closed places and public transportation vehicles where social distance cannot be maintained continues, HES code and PCR test applications have been abolished (T.R. Ministry of Interior, 2022).

In summary, the measures taken within the scope of fighting the pandemic have restricted use of urban space. The normalization process, which started with the decrease in the number of cases, came to the agenda again with the increase in the number of cases. The bans during the fight against the pandemic shows that space and restrictions may come to the fore again.

2.3.2 COvid-19, Housing and Neighbourhood Studies

When the scientific literature is examined, it is possible to see the publications related to the pandemic and the neighbourhoods (Table 2.4). In the reviewed publications, there are social effects of the Covid-19 epidemic, its effects on urban planning, regulations that can be applied in the built environment, and suggestions for staying healthy. In the publication “The impact of Covid-19 on Public Space” (Roses et.al.,2020), predictions about the effects of the pandemic in public spaces and how social relations will be affected are presented. In a similar publication “The nature of cities and the Covid-19 pandemic” (Lai &Lebster, 2020), there are comments about social distance, staying at home, being healthy in the urban environment. In the study conducted in Türkiye (Ahsan,2020), there are suggestions for new normal and built environments. The importance of green spaces and the measures to be taken to protect the physical and mental health of the people during the pandemic process are included (Slater et.al, 2020).). In a study conducted in Turkey (Ekşioğlu Çetintahra, 2021), it has been revealed that a perception of health safety has occurred for the neighborhoods due to the pandemic and this situation has changed the expectations from the neighborhood with Covid-19.As a result of the studies scanned in the literature, it was emphasized that the public plays an important role both at the national and local level, access to green areas is important, and it is necessary to redesign the built environment to create healthy and resilient cities, spatially the housing and neighbourhoods.

Table 2. 4 Literature review about Covid-19

Name	Aim	Method	Results
The Impact of COVID-19 on Public Space: A Review of the Emerging Questions.. (Roses et.al., 2020)	The effects of Covid-19 in public spaces and how social relations will be affected are discussed.	Estimates for the Covid-19 process were developed by scanning the literature.	It shows that the public health and socioeconomic crisis will change the design, perceptions, use and management of public space in a variety of ways across and within cities.
The nature of cities and the Covid-19 pandemic (Lai & Webster, 2020)	During the covid-19 process, there are comments to stay healthy with steps such as social distance and staying at home in urban environments.	Estimates for the Covid-19 process were developed by scanning the literature.	It is necessary to plan and design the built environment to create the healthy and resilient cities of tomorrow, with built-in capabilities to meet the challenges posed by current and future pandemics.
Strategic decisions on urban built environment to pandemics in Turkey: Lessons from COVID-19 (Ahsan, 2020)	There are suggestions for the new normals regarding the built environment in Türkiye.	Other sources such as reports, articles, national, public institutions and national newspapers are also included in this study.	Citizens play an important role in the urban built environment, and continued participation from both the national and local levels has been shown to play an important role.
Cities under Siege: Urban Planning and the Threat of Infectious Disease (Matthew & McDonald, 2006)	In urban planning, information was given about the precautions and preparations that should be made to the cities affected by epidemic diseases.	Inferences about epidemic diseases were made by scanning the literature.	Identified the component of emergency preparedness and response required for satisfactory urban defense.
2019 Novel Coronavirus (COVID-19) Pandemic: Built Environment Considerations To Reduce Transmission (Dietz et.al, 2019)	It is a guide for people and the environment to minimize contamination in the built environment.	This microbiology of the BE research and what is known about SARS-CoV-2 were used.	It is useful for corporate and public managers and individuals responsible for design and operation when making decisions about the degree and duration of social distancing measures during viral outbreaks and pandemics.
Recommendations for Keeping Parks and Green Space Accessible for Mental and Physical Health During COVID-19 and Other Pandemics (Slater et.al, 2020)	In order to protect the physical and mental health of the public during pandemics, the measures to be taken for parks and green spaces that are closed are included.	By scanning the literature, long and short-term predictions for the Covid-19 process have been developed.	Some short- and long-term solutions have been proposed that could provide access to green space while allowing physical distancing.
Antivirus-built environment: Lessons learned from Covid-19 pandemic (Ghoneim, 2020)	There are suggestions for redesigning cities against the Covid-19 epidemic.	Academic publications were used.	Multidisciplinary studies are needed in the future due to the many challenges that require a better understanding of COVID-19 and its socioeconomic impacts on society.
Epidemic preparedness in urban settings: new challenges and opportunities (Lee et.al, 2020)	It talks about the challenges and opportunities for the preservation of urban environments in urban areas.	Estimates for the Covid-19 process were developed by scanning the literature.	Preparedness is a crucial investment because the cost is small compared to the unrelenting impact of a merger in health.
Health Safety Perception for Urban Space of Children and Their Parents who Cannot Leave Their Homes in the Process of Combating the Covid-19 Outbreak and Possible Effects of Children's Physical Activity Levels in the Normalization Process (Çetintahra, 2021)	The effects of Covid-19 in children's physical activity levels during the normalization process will be affected are discussed.	By scanning the literature, long and short-term predictions for the Covid-19 process have been developed.	It shows that the perception of health safety towards the neighborhood has changed due to the pandemic.

Forsyth offers 3 different models according to healthy city areas of expertise: Classical Model (Healthy Structural Environments), Population-Based Models, and Technology-Based Models (Forsyth et al. 2017). In the classical healthy city model, the purpose of design and planning areas is to create a liveable and healthy environment. The product that emerged as a result of these studies is mostly spatial and physical. Cities that make up this model have found various solutions during the pandemic period. In this context, the importance of open spaces and green spaces is supported. In line with these recommendations and determinations, Harvard University closed areas on March 13, 2020. In order to provide an active and healthy life in green areas, taking into account the social distance rules, cycling and building stairs are used as a sports area (Eşbah 2020). The fact that public parks and green spaces are used during the pandemic period shows that this model has been applied. On the other hand, it has been said that cities that prohibit the use of sports fields and parking areas cannot implement the healthy city model and serve the public under adverse conditions.

The population-based model (Forsyth et al. 2017), on the other hand, works towards disadvantaged groups (children, disabled, elderly people) in the society. In this context, it is aimed to make cities child-friendly, disabled-friendly, and elderly-friendly based on accommodation, health, and activity. They aimed not to separate the more fragile part of the society from the society during the pandemic period (Eşbah, 2020).

In technology-based models, it was expected that all health-related information could be accessed and contributed to the city. It is aimed to create smart cities, make technological follow-ups about health, and collect data. It has been seen as very advantageous during the pandemic period in terms of technology-based creation and use of data (Forsyth et.al., 2017).

In a study conducted in 58 cities in China, it was stated that it is important to apply social distance rules such as curfews, working from home, and leaving the house alternately in order to prevent the pandemic (Du et al. 2020). It has been observed that the rate of transmission spreads in areas with high urban density (Fan et al., 2020). The

negative effects of the pandemic process on mental health were also mentioned (Dong and Bouey, 2020). In this context, in a study conducted in Japan, it was emphasized that poorly ventilated areas and closed spaces should be avoided (Furuse et al., 2020). With the long closing processes, the importance of gaps and open spaces in residential areas has been seen more clearly during the pandemic process. In addition to the importance of green areas, housing and housing environment regulations have also become important in pandemic conditions. It is important that the arrangements in the immediate vicinity of the building are designed together in an order, rather than how they are alone. Arrangement of building blocks may require building more units, typically in the same area, as with multi-story buildings, depending on densities of people. Density is often confused with related issues such as crowding (persons per room) and building space coverage and volume (related to design rather than density). Many people fear that higher-density housing will be cramped, lack open space and parking, and even be of lower structural quality. These are all important issues but not directly related to density. For example, adjacent units may be spacious with gardens or balconies and ample parking (or alternative transportation). Within the scope of the work 'Revitalizing Places: Improving Housing and Neighbourhoods from Block to Metropolis' (Downs, 2010) there are types of density measures as: (1) Site/parcel density, (2) building block density, (3) Net neighbourhood density, (4) Net neighbourhood housing density, (5) Net neighbourhood residential density, and (6) Gross neighbourhood density (Forsyth, 2003).

It is usually a measure of housing units or housing population per site/plot area. Block density measures the housing units or housing population per area of a city or neighbourhood block. Net neighbourhood density measures the number of residential units or residents divided by neighbourhood space, excluding citywide uses such as parks or large commercial spaces. Net neighbourhood housing density measures the number of people or housing units divided by the total residential land area. The net neighbourhood residential type density is similar to the previous one, but only counts residential buildings of a certain type and the associated land area (such as single-family home density or townhouse density). Gross neighbourhood density measures the number of residential units or residents divided by the total area of the neighbourhood. City or municipality density measures the number of housing units or

residents divided by the total area of the city or municipality. Similarly, metropolitan density measures the number of residential units or residents divided by metropolitan area (Forsyth, 2003).

Open spaces in these different forms of construction vary according to their preference (Figure 2.1). It has been observed that with the curfews, the outdoor activities of people intensified in the building and its surroundings without being crowded (Honey-Roses et al., 2020).

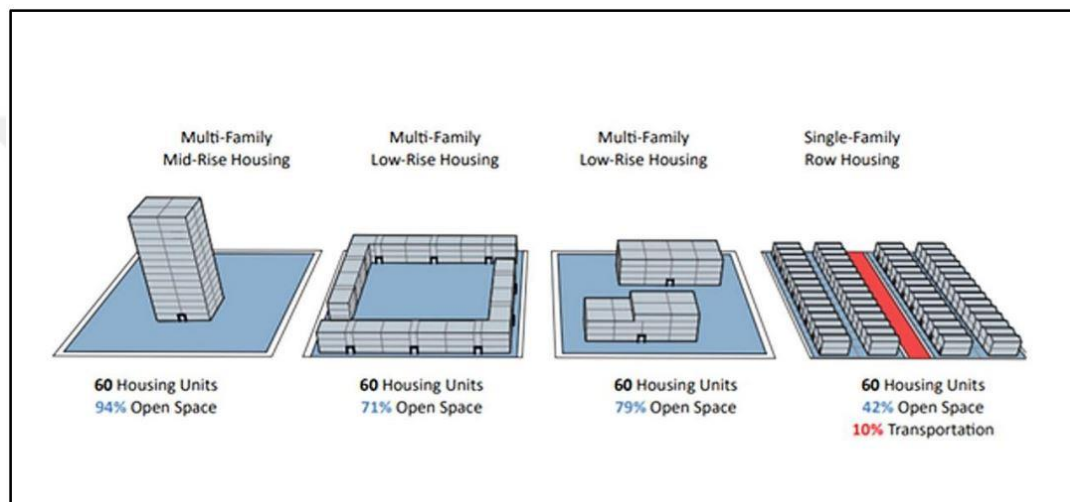


Figure 2.1 Improving Housing and Neighbourhoods from Block to Metropolis (Southworth & Owens, 1993)

It is argued that every individual needs an area away from noise, in other words, sports fields, green areas and parks (Honey-Roses et al., 2020). In order to meet the needs in crowded residential areas, it is recommended to make applications that will include playgrounds and green areas in building block. In an example given to increase the amount of green space, it is suggested to use building roofs (Honey-Roses et al., 2020).

During the epidemic, housing is used as the most basic human need in order to meet the needs of the bar. It has become an embarrassing situation for the house to have a garden or to be in a site. From an architectural point of view, multi-storey buildings without windows and ventilation areas are unhealthy and dangerous (Alter, 2020).

One of the important topics learned during the pandemic period has been bicycles and walkable streets. In the scientific literature before the pandemic, it is supported by the facts that walking, which is the primary mode of transportation and physical activity, is both environmentally friendly and beneficial for the physical and mental health of the residents (Dreessen, 2020; Zhou et al., 2019). Streets may need to be redesigned to meet the needs of multimodal transport, which succeeds in making the streets healthier, safer, greener and more liveable (Honey Roses et al., 2020). It is foreseen that pavement widths should be increased in order to ensure social distance in the streets where pedestrian use is high in the residence and around the residence (Alter, 2020). It is emphasized that these regulations should cover not only pedestrians but also motor vehicles and parking areas (Honey-Roses, 2020). In the cities of Vienna and Boston, short-term measures such as temporary road closures have been taken to encourage pedestrians and cycling, promote healthy living and create clean environments (Laker, 2020).

During the pandemic period, with the increase in the time spent at home, people were disconnected from nature and lived in both social and physical isolation in apartments. In a study conducted in China (Dong & Bouey, 2020), it was mentioned that the mental health is adversely affected in pandemic situations and that precautions should be taken. The occurrence of behaviours such as traumatic situations, phobias, depression, panic, and aggression during the epidemic showed that people were negatively affected from the epidemic. The behaviours such as introversion and social exclusion increase in major epidemics affecting the world (Honey-Roses et al., 2020).

For residential environments, the main headings of (1) density and (2) quality were examined (Honey-Roses et al., 2020). Densities are listed as (1) building density, (2) population density, (3) open and green area density. For qualifications, (1) housing quality, (2) open space quality, (3) green space quality can be listed. For the analyses to be made within the scope of the thesis, the main topics of density and quality will be discussed, while security, neighbourhood, physical appearance, and accessibility will be examined.

The global pandemic has highlighted the limits of how we manage our built environment in terms of how we should design, build, and operate our built environment. It is possible to improve these built environments and ensure user satisfaction.

2.4 Environmental Quality and Satisfaction

Quality is the degree to which the features of a product or service meet the determined needs (Kalite Yönetim Sistemleri, 2002). It has a pragmatic interpretation, which is defined as not inferior or superior to goods or services and is also defined as fitness for purpose (Nanda, 2016). Quality has a perceptual, conditional, and subjective quality (Gitlow, 2000).

The definition of environmental quality has two meanings. The first definition concerns the physical environment. It refers to the material aspects of the environment, which consists of factors such as air, water, and pollution that influence people. The second definition expresses the material and spiritual quality that determines the socio-cultural structure, traditions, and behaviours of the people in a certain place and accordingly creates dissatisfaction or satisfaction with the physical settlement (Rapoport & Hardie, 1991). Physical environmental quality: It refers to a formation that can meet the needs of users and ensure its continuity, has aesthetic purposes, considers the benefit of society and is ecologically suitable for the environment (Dengiz & İncedayı, 2003).

It is possible to evaluate the quality of the residential environment by evaluating the users' satisfaction levels. However, it is not possible to determine the quality and satisfaction of a place or environment with a single measurement or on one parameter, thus many qualities need to be measured. The most important indicator of environmental quality is that the residential environment responds to the lifestyles, expectations and needs of the users (Şekeroğlu, 2016).

Although the residential environment differs according to individual differences and communities, the increase in the density of buildings in the cities, the decrease in green and open spaces, the increase in pollution, and the changes in social life have

increased the needs of families for well-arranged areas. On the other hand, access to social opportunities and services also affects environmental quality (Marans, 2003). For this reason, environmental quality criteria should be considered in the decisions and implementation of urban planning and the expectations of users regarding the residential environment should be fulfilled (Häußermann & Siebel, 2000).

The main reason for the interest in determining the neighbourhood, the expectations and needs of the people living in the house is due to the acceptance of this criterion as an element of the general quality of life (Weidemann & Anderson, 1982). Therefore, satisfaction with the neighbourhood can also be questioned through satisfaction with the house.

Housing satisfaction is the measurement of the differences between the house they live in and the house they want to live in (Amerigo & Aragonés, 1997). Housing satisfaction is a subjective concept and is a person's response to the housing environment (Ge & Hokao, 2006). In addition, it is the evaluation of the feelings of individuals and shows how related and intertwined they are with the environment (Francescato, 1998).

Today, housing is a concept that is handled with its surroundings. For this reason, in housing satisfaction studies, the house and its environment are considered as the basic units. Studies on measuring residential environment satisfaction began in the 1960s with the development of various models. Galster et al., in 1981, stated two factors that affect satisfaction with the house and its environment: (1) the physical characteristics of the house and the features of the environment in which the house is located, (2) the characteristics of the household, social status and lifestyle of the people (Galster et al., 1981). Foote et al. (1960) examined the basic elements of satisfaction with the residence and its environment under 5 headings: (1) house ownership, (2) the location of the residence and the quality of the dwelling, (3) neighbourhood, (4) gender, (5) having children. In the model developed by Francescato et al. (1974), the variables affecting satisfaction are grouped into three groups: (1) personal characteristics, (2) objective physical characteristics, (3) users' expectations of the residential environment. Galster (1987), on the other hand, examined housing

satisfaction under 3 headings: (1) personal characteristics of users, (2) qualitative characteristics of housing, (3) quality of housing-infrastructure features.

When the satisfaction studies conducted in recent years are examined, it is seen that the satisfaction levels are determined by considering the personal characteristics of individuals and families (in general the users' characteristics), the physical characteristics of the residence and the characteristics of the environment in which the residence is located (Gülaydın, 2004; Gür, 2009; Erdal, 2010).

When the studies carried out abroad on the subject are examined, it is seen that the basic demographic and individual characteristics of families are determinative in the formation of housing satisfaction. These are age, gender (Varady & Preiser, 1998; 2001; Baker, 2003), marital status (Baker, 2003), family size, number of children and age of children (Lawrence, 1987), socioeconomic status (income, education, occupation, etc.) (Lawrence, 1987; Baker, 2003), residence time (Theodori, 2001), home ownership (Lu, 1999), family structure and life period (Baker, 2003; Lu, 1999).

Housing is an environment that meets the need for family members to live together and provides their social and psychological development. Therefore, the physical characteristics of the house should be such that it allows the family to carry out various activities (Weidemann & Anderson, 1982). Factors affecting satisfaction with the physical features of the house; adequacy and usefulness of housing areas (Loo, 1986; Lu, 1999; Türkoğlu, 1997), housing size and number of rooms (Clark & Onaka, 1983, Özgür, 2009; Türkoğlu, 1997), housing type (Tognoli, 1987), lighting and ventilation, insulation, and heating (Hasan et al., 2005). In addition to these, the kitchen storage areas, the suitability of the working areas in the kitchen, and the dimensions of the cabinets are also important housing features for families (Hazer-Bilgin, 1995). On the other hand, housing satisfaction is associated with the way people perceive the house and its environment. In the formation of this perception, the cultural values, customs and traditions of the families, world views, lifestyles, needs, and wishes are effective (Şekeroğlu, 2016).

It is stated that access to various activity areas (shopping centers, recreation areas, city centre and workplaces of individuals, etc.) is an important factor in the satisfaction

of users with their housing and its environment (Braubach, 2007). Accessibility is the ability of individuals to access various services, activities, and places to go in their environment (Özgür, 2009). Accessibility to facilities, and public transportation points is among the factors that have an impact on measuring the satisfaction of the residence and its environment (Michelson, 1977; Loo, 1986; Bender et al., 1997).

It also increases satisfaction by ensuring that the residence and its surroundings are safe, the residence provides the privacy of individuals, and the residents are peaceful (Baker, 2003). In addition, it is stated that the adequacy of the social equipment and the social relations that can be established between the people who benefit from them, the provision of social integration, the neighbourhood and neighbourhood ties around the residence can be effective in the satisfaction of the residence (Amerigo & Aragonés, 1990).

Since housing is one of the basic needs of life, it is the focus of many researches. The examination of housing in terms of the health dates to the end of the 19th century. Its economic analysis began in the 1930s (Kellekci, 2005). In studies conducted abroad on the determination of housing satisfaction; it has been seen that the qualitative characteristics of the house are emphasized in more detail, and the subjective and psychological factors affecting the housing satisfaction are also examined.

In studies conducted in Türkiye, it is seen that neighbourhood satisfaction surveys are mostly carried out in mass housing areas with low and middle socio-economic level users (Kellekci, 1998; Polat, 2010; Harman, 2013; Oral, 2014). However, in slum areas rehabilitated by urban transformation (Bodur, 2012), for middle and upper socio-economic level users, the satisfaction levels of the residents living in sheltered sites (Berköz, 2008) and qualified residences (Sönmez, 2010) regarding the residence and its environment were examined.

Considering the studies conducted abroad on the subject, the country-wide study conducted in Ireland by Davis and Fine-Davis (1981) draws attention. It was carried out to find the satisfaction of the general features of the house and the neighbourhood, the subjective physical variables and the factors affecting the satisfaction of the house.

It has been determined that the satisfaction of the kitchen, the heating system and the various features of the bathroom affects the satisfaction of the house in general.

Buys and Miller (2012) conducted a study to determine the factors affecting housing satisfaction with 636 respondents in urban areas with high population density in Brisbane \ Australia. In their research, they determined that the size of the rooms, the heating status of the house, the characteristics of the environment, the location of the house, its safety, the noise situation, the social relations around the house and the age of the participants affect the house satisfaction.

Ibem and Aduwo (2013) examined the housing satisfaction assessment in mass housing in Nigeria, considering the socio-economic status differences. In this study, which was applied to 452 residents, it was found that the participants were generally satisfied with the housing conditions, but the comfort of the housing, bedrooms and living areas, facilities and services of the housing environment, housing management, satisfaction with the housing could be affected.

In the studies that deal with the physical features of the house, the characteristics of the environment where the house is located, and the house design elements together and where the occupant profile of the house consists only of families are not sufficient (Roses et.al.,2020; Ahsan, 2020; Slater et.al., 2020; Megahed & Ghoneim, 2020).

In the domestic research conducted by Kellekci (1998), the satisfaction of the residential users living in the Istanbul\Bahçeşehir Mass Housing Area with their neighbourhoods was investigated and according to the results of the research; It has been determined that those living in the mass housing area are generally satisfied with the housing they live in and the social facilities around the housing, infrastructure services, social relations, accessibility to the city center and the safety of the housing environment.

The variables affecting the housing and environmental satisfaction of individuals living in settlements formed by modern and traditional building systems in Istanbul were investigated by Özbek (1998) in two different mass housing areas. The questionnaire prepared according to five main factor groups (housing, neighbourhood,

social facilities, economy, housing environment) was applied to 120 people in Ataşehir mass housing area (Istanbul), which was taken as a modern settlement, and 150 people in Kuzguncuk mass housing (Istanbul), which was taken as a traditional settlement. In the study, satisfaction with the residence and its environment is associated with the lifestyles, socio-economic status, and life expectancy of individuals. According to the results of the research, it has been determined that the satisfaction of individuals with their housing and its environment is directly related to socio-economic status.

In a study conducted by Akarsu (1999) with the participation of 250 university students in order to examine the housing preferences of university students in Ankara (Türkiye), the main factors affecting housing satisfaction are the fact that the houses receive sunlight, and the size of the house is large in square meters. Other features that university students' families are satisfied with are that the house is quiet, the number of rooms is sufficient, and the kitchen is spacious.

In the study conducted by Oral (2014) in Gölcük (Kocaeli) it is aimed to determine the user satisfaction of 281 individuals living in TOKİ (Turkish Housing Development Administration) residences. When the satisfaction levels of the users living in TOKİ residences from the social facilities are examined; the participants are satisfied with the training and parking facilities, parks, infrastructure, transportation, and municipal services. On the other hand, it is seen that they are not satisfied due to the inadequacy of sports, health, and cultural facilities.

2.5 Literature Summarize

In this section, within the framework of the literature discussed above, the variables considered in the thesis related to housing and neighbourhood are summarized.

The concept of housing includes features that determine social status such as security, socialization, aesthetics, neighbourhood unit, belonging, individualization, accessibility, physical, emotional, cognitive, and cultural values. The concept of neighbourhood includes the social environment such as home and their social and physical relations with each other.

When the housing criteria are examined; physiological needs such as shelter and nutrition, security, belonging to the home and the environment, aesthetics, socialization have emerged. When the neighbourhood criteria were examined, the concepts of accessibility, safety, environmental perception, aesthetic quality, infrastructure opportunities and upkeep environment appeared before us. Accessibility is described as within 10-15 minutes walking distance to services, while security is described as crime and traffic safety. The environmental perception title includes the experiences of people. Aesthetic quality was examined as beautiful, encouraging. Infrastructure facilities covers such as healthy drinking water supply and distribution.

In the process we live in, it has been observed that there have been some changes in people's perspectives on housing with the Covid-19 pandemic. It has been revealed that the definitions made for housing within the scope of the measures taken due to the pandemic should be reconsidered over the relationship between health, city, neighbourhood and housing within the framework of the current process.

With the rapid growth of cities and industrialization, various problems in health, social and physical fields have been the cause of epidemics from the past to the present, and it is seen that the fight against epidemics is related to urban settlements, built environment and lifestyle. The investigation of these health problems enabled the use of the concept of health and the city together. In this context, the Healthy Cities Association was established, and they applied their work to improve cities. Since the practices carried out within the scope of the Healthy Cities Project are generally on an urban scale, it has become a subject that needs to be addressed in more detail within the scope of the neighbourhood.

It is known that the physical environment characteristics of a healthy neighbourhood are directly related to the health of individuals and society. From this perspective, the neighbourhood design criteria stated in are grouped under 6 main headings: (1) Access to clean water, (2) Access to healthy food, (3) Proximity to nature/open spaces, (4) Active transportation and life formation, (5) reduction of tobacco and alcohol use, (6) age friendly. It is not yet clear how the variables mentioned and discussed in the studies have changed with the Covid-19 pandemic.

With the first case seen on 11 December 2019, the world entered a process that it was not prepared for. The measures taken within the scope of fighting the pandemic have restricted use of urban space. The normalization process, which started with the decrease in the number of cases, came to the agenda again with the increase in the number of cases. The bans during the fight against the pandemic shows that space and restrictions may come to the fore again. The global pandemic has highlighted the limits of how we manage our built environment in terms of how we should design, build, and operate our built environment. It has been seen that it is possible to make measurements to improve these built environments and ensure user satisfaction.

In summary, in the context of the characteristics of housing and neighbourhood, which are noted in the literature, the characteristics of the house (house ownership, adequacy and usefulness, size and number of rooms, type of the house, lighting and ventilation, insulation and heating), the characteristics of the neighbourhood (access to various activity, access to public transportation, safety, privacy, social relations) and the socio-demographic characteristics of the residential users and their perceptual evaluations of the house and neighbourhood they live in were taken into account. Unlike previous studies, in this study, perceptual assessments were examined by considering a pandemic-based temporal process. In addition, the comparison of the views of residential users, healthcare professionals and experts in space disciplines makes this thesis study different from previous studies.

CHAPTER 3

METHODOLOGY

In this study, it is aimed to examine the differences in the qualitative and quantitative evaluations of the housing and neighbourhoods before and after the pandemic, in terms of perceptual and physical qualities, wherein a study area that includes different structuring features of the city of Izmir. For this purpose, a method is described on the construction of different measurements together. The basis of the construction of such a method is that the measures developed within the scope of combating the pandemic affect the spatial order and urban life. The decisions taken during the fight against the pandemic and the measures implemented in line with the opinions of health experts restrict the interaction of people with the place. On the other hand, it also opens discussions that acquired habits may appear as a lifestyle after the pandemic. For this reason, it is thought that the use of space arrangement disciplines, which are required by the new lifestyle, should discuss new problems and solution proposals through spatial order. In the process of carrying out the thesis, the importance of people's homes and neighbourhoods have increased with the Covid-19 pandemic and the restrictions on activities such as education, business, trade and social life. For this reason, thanks to the aim of the thesis, it was possible to make a measurement, and it was thought that people's views on the physical and perceptual qualities of their homes and neighbourhoods could be obtained. While staying indoors is emphasized in the fight against the Covid-19 process, the qualities of indoor spaces are also expected to provide healthy conditions for the household. In this period, issues such as the presence of a garden of the house, the proper qualifications of the street where the house is located in terms of cleaning, contact and hygiene rules, and the easy access of the house to green areas and urban areas were discussed more frequently in this period. For this, first of all, an online survey was conducted with the experts living in Izmir or another city in order to determine and compare the parameters that are important for a healthy neighbourhood between the health experts who developed the methods of combating the pandemic and the experts who organized the urban space that changed due to the methods of struggle.

A household survey was then conducted. In the creation of the questionnaire, questions were prepared both on the parameters obtained from the experts and on the qualifications considered within the framework of the concept of healthy neighbourhood. The household survey was conducted face-to-face with 244 people living in 4 different neighbourhoods with different urban arrays in the Narlıdere district of İzmir. As a result of the survey applications, the parameters deemed necessary for a healthy neighbourhood were obtained through the opinions of health and space organization experts and the thoughts of those living in a settled area. Finally, data related to the study area were collected to be analysed within the scope of the study. The data in question includes measurements on the map and is based on measurements on building and parcel relations and healthy city parameters from the literature. At last, the results of the household surveys, expert opinions, and the characteristics of the area where the participants' residence is located were compared with statistical methods according to the views before and after the pandemic. In summary, in this section, the study area and sample selection, the content and process of the survey study, the characteristics of the participants, the parameters that were taken into consideration during the evaluation were explained (Figure 3.1).



Figure 3.1 Work Scheme

3.1 Study Area

Narlıdere District of İzmir Province was chosen as the study area. It is possible to say that people from different socio-economic backgrounds live in Narlıdere, which is located on the western development axis of İzmir. It has various urban textures such as gated community, detached buildings with gardens and slum areas. The sample of the study consists of people who have lived in Sahilevleri, Yenikale, Çamtepe and 2. İnönü neighbourhoods in İzmir Narlıdere district for at least 1 year and have resided during the pandemic period.

The province of İzmir is located in the west of Türkiye. The city is surrounded by the Aegean Sea in the west, Balıkesir in the north, Manisa in the east and Aydın in the south. Its total surface area is 11,891 km² and there are 30 districts connected to İzmir province. According to the results of the 2020 TUIK Address-Based Population Registration System (ABPRS), the population size is in the third place after Istanbul and Ankara, with a total of 4,394,694 people. İzmir became a member of the European Healthy Cities Association in 2007.

Narlıdere District is located in the south of İzmir. There are Balçova in the east of the district, Karabağlar in the south, Güzelbahçe in the west and İzmir Bay in the north. Narlıdere is located on the south coast of İzmir Bay in the Western Aegean Region, has an area of 63 km². There are 11 Districts and 529 Streets with a length of 155,922,40 meters within the borders of Narlıdere district. Narlıdere District has an advantageous position in terms of main transportation routes. E-881 İzmir-Çeşme Highway, one of the most important roads of İzmir, passes through the north of the district. It is located close to Adnan Menderes Airport (Figure 3.2, 3.3). Narlıdere Neighborhood became a member of Turkish Healthy Cities Association in 2016.



Figure 3.2 Top View of Narlıdere

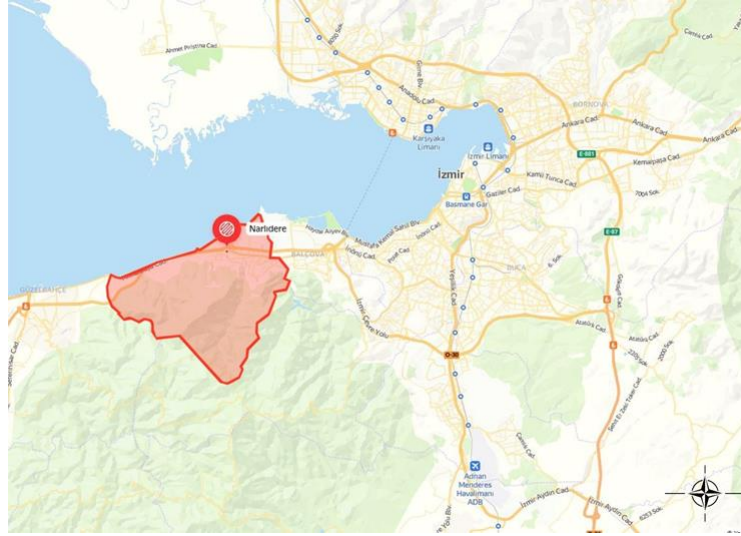


Figure 3.3 The location of Narlıdere, İzmir

Narlıdere district is 64.03 km² and consist of 20% residential area, 10% agricultural land, 70% nursery, bush, and forest area (TUIK, 2016). Although the district does not have an important stream, small streams such as Ilıca and Ali Onbaşı flow into İzmir Bay. According to the results of the 2020 TUIK Address-Based Population Registration System (ABPRS), a total of 63.438 people live in Narlıdere. It has a total of 11 neighbourhoods as; 2. İnönü District, Altınevler District, Atatürk District, Çamtepe District, Çatalkaya District, Huzur District, Ilıca District, Limanreis District, Narlı District, Sahilevleri District and Yenikale District (Figure 3.4).

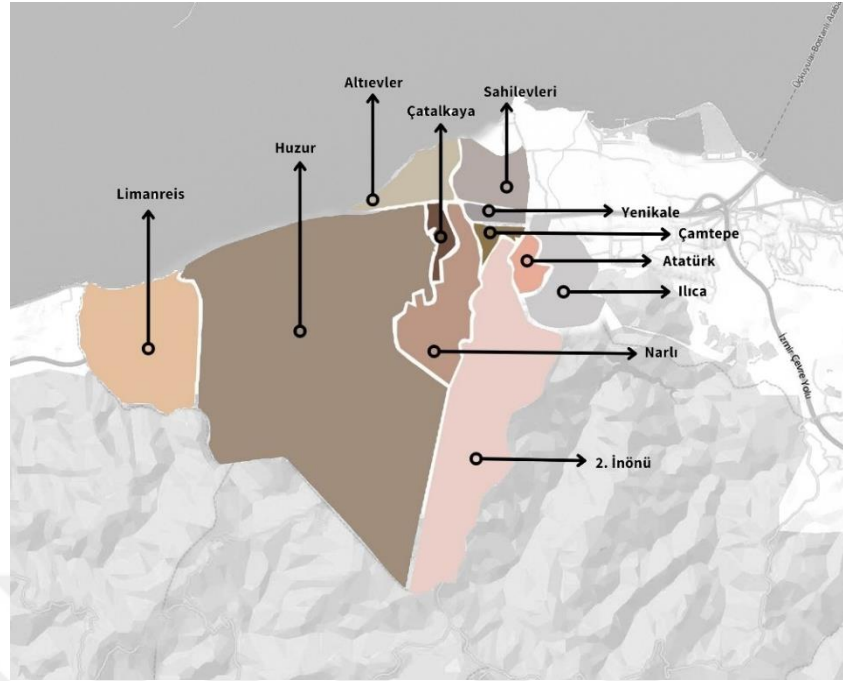


Figure 3.4 Neighbourhoods of Narlıdere, İzmir

According to the Narlıdere Municipality 1/1000 scaled implementation development plan, the land uses are as follows; (1) residential settlement areas, (2) commercial areas, (3) tourism areas, (3) social reinforcement areas, (4) open and green areas, (5) public institutions, (6) transportation and infrastructure (Table 3.1). Considering the land use of Narlıdere District, total residential areas cover 22.8% and commercial areas cover 31.62%. Tourism area, social areas, public association, and open-green areas cover less than 6% of the area.

Table 3.1 The land uses of Narlıdere Neighbourhood (Narlıdere Belediyesi, 2020)

Type of Use	Total Area(ha)	%	M ² /Person
Residential Areas			
Urban Housing Settlement Areas	75.12	8.55%	11.34
Residential Areas of Development	125.67	14.31%	18.96
Commercial Areas			
Central Business Area	0.30	0.30%	0.05
Commercial Areas	11.93	1.36%	1.80
Agricultural Areas	263.99	30.06%	39.84
Tourism Areas			
Tourism Preferential Use Areas	12.86	1.46%	1.94
Social Areas			
Educational Facilities	16.99	1.93%	2.56
Healthy Facilities	3.67	0.42%	0.55
Socio-Cultural Facilities	12.87	1.47%	1.94
Sport Area	4.17	0.47%	0.63
Open-Green Areas			
Active Green Space	34.96	3.98%	5.28
Recreational Area	5.82	0.66%	0.88
Coastline	7.59	0.86%	1.15
Forestry Space	5.04	0.57%	0.76
Public Association			
Official Facilities and Municipal Service Area	10.87	1.24%	1.64
Transportation and Infrastructure Areas			
Parking	0.74	0.08%	0.11
Subway	8.62	0.98%	1.30
Roads	143.06	16.29%	21.59

There are 11 Districts and 529 Streets with a length of 155,922,40 meters within the borders of Narlıdere district (TUİK, 2016). Narlıdere District has an advantageous position in terms of main transportation routes. E-881 İzmir-Çeşme Highway, one of the most important roads of İzmir, passes through the north of the district. It is located close to Adnan Menderes Airport.



Figure 3.5 Top View of Study Area: Sahilevleri, Yenikale, Çamtepe, 2. İnönü Neighborhood (Reference of satellite image: 589412)

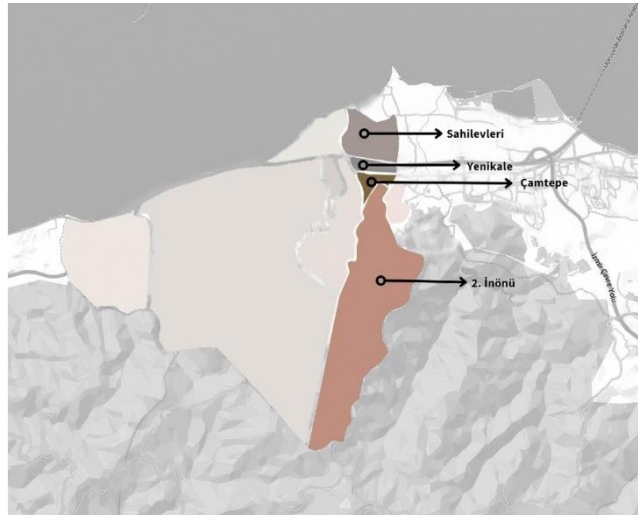


Figure 3.6 Study Area: Sahilevleri, Yenikale, Çamtepe, 2. İnönü Neighborhood

In this thesis, Sahilevleri, Yenikale, Çamtepe and 2. İnönü neighbourhoods were chosen as the study area (Figure 3.5, Figure 3.6). The districts are positioned to follow each other in the north-south direction. According to the Turkish Statistical Institute

(TUIK) Address Based Population Registration System (ADNKS) 2020 data, 21,493 people live in these neighbourhoods.

Yenikale Neighbourhood is the region with the first settlement of Narlıdere in history. When Yenikale Neighborhood is analyzed based on topography, it is seen that it was built on a flat area (Figure 3.7). Today according to the 2021 census data, 5.466 people reside, and it is the smallest neighbourhood of Narlıdere. It has an area of 0.377 km and 0.06 m2 area per person. Yenikale is a residential area preferred by high- and middle- income groups economically. There are 2 main streets and 33 branch streets in the neighbourhood, where commercial activities are intense. The construction is predominantly in the form of high-rise apartments and in-site apartments. It has a richer infrastructure in terms of number of parks and area (Figure 3.7, 3.8), (Narlıdere Belediyesi, 2020; Google Earth, 2022).



Figure 3.7 Top View of Narlıdere Neighbourhood (Reference of satellite image: 8412412)

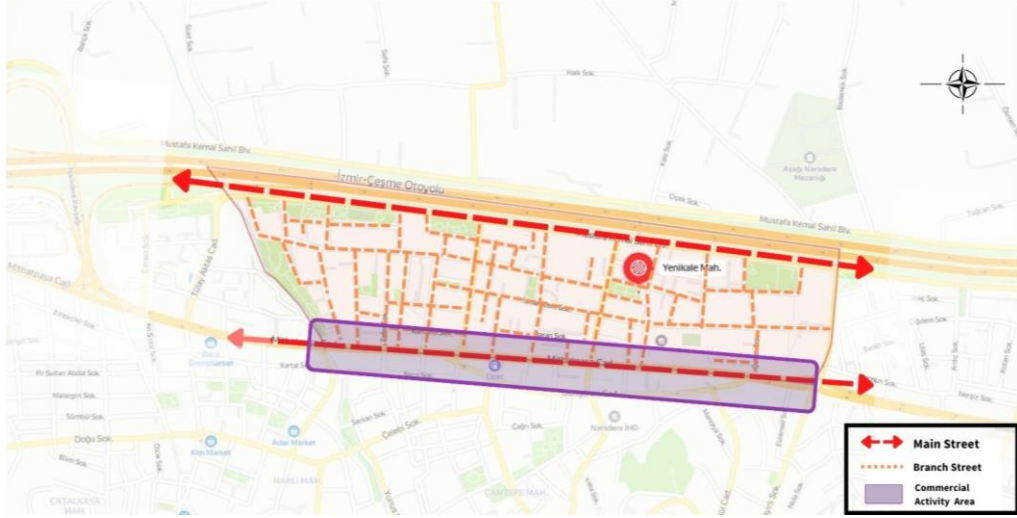


Figure 3.8 Yenikale Neighbourhood

Çamtepe District is also known as "Middle District", its first inhabitants in history were Greeks. When Çamtepe Neighborhood is analyzed based on topography, it is seen that it was built on a flat area (Figure 3.9). It has an area of 0.367 km and 0.05 m² area per person. Today according to the 2021 census data, 6.169 people reside and it is a residential area preferred by middle-income groups. There are 39 branch streets and 4 main streets in total in the neighbourhood. It is known that trade is intense on the street bordering Yenikale Mahallesi. The predominant construction in the region is in the form of high-rise apartments (Figure 3.9, Figure 3.10), (Narlidere Belediyesi, 2020).



Figure 3.9 Top View of Çamtepe Neighbourhood (Reference of satellite image: 894231078)

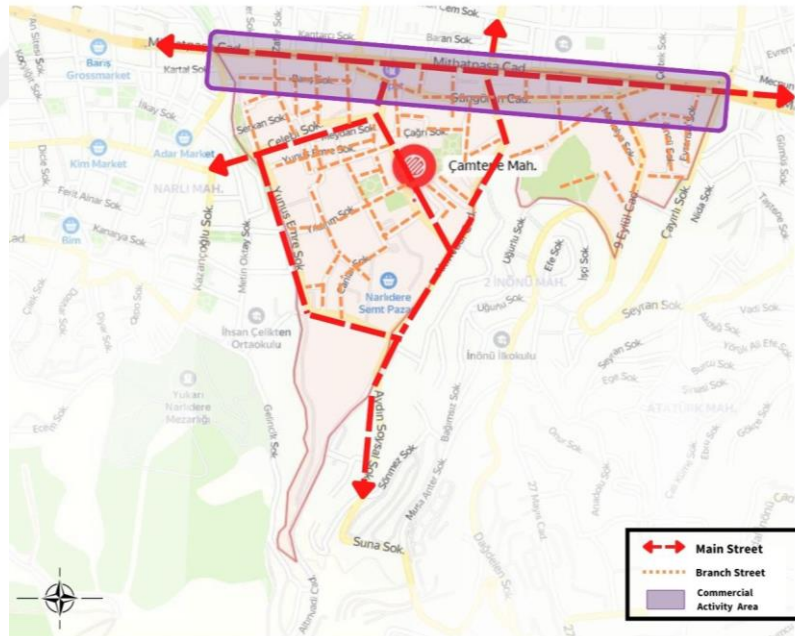


Figure 3.10 Çamtepe Neighbourhood

2. İnönü Neighbourhood is the region with the largest surface area of Narlıdere District. When examined based on topography, 2. İnönü Neighbourhood was established on a mountainous and uneven area (Figure 3.11). It has a surface area of 7,776 km and has an area of 0.86 m2 per person. According to the 2021 census data,

8.976 people reside and it is the most crowded neighbourhood of Narlıdere. In the lower part (on the north direction) of the neighbourhood, there is a slum-type settlement (Narlıdere Municipality 2020-2024 Strategic Plan), while in the upper part (on the south direction) of the neighbourhood, high-rise buildings, and densely populated housing estate. From this point of view, it is possible to say that in this neighbourhood there are households from all economic classes. There are 27 branch street and 5 main streets in total in the neighbourhood (Figure 3.10, Figure 3.11).

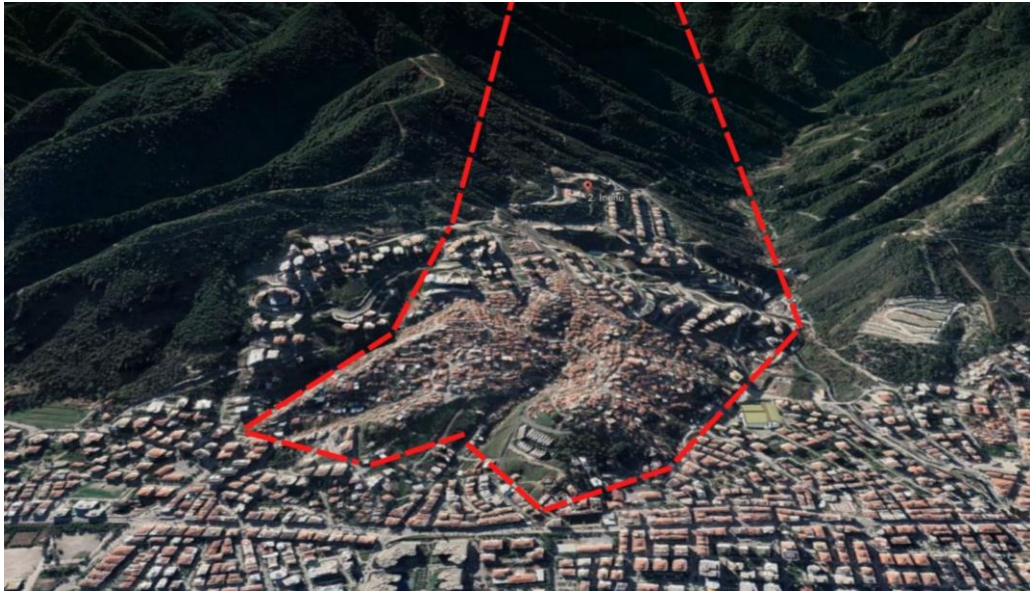


Figure 3.11 Top View of 2. İnönü Neighbourhood (Reference of satellite image: 58742107)

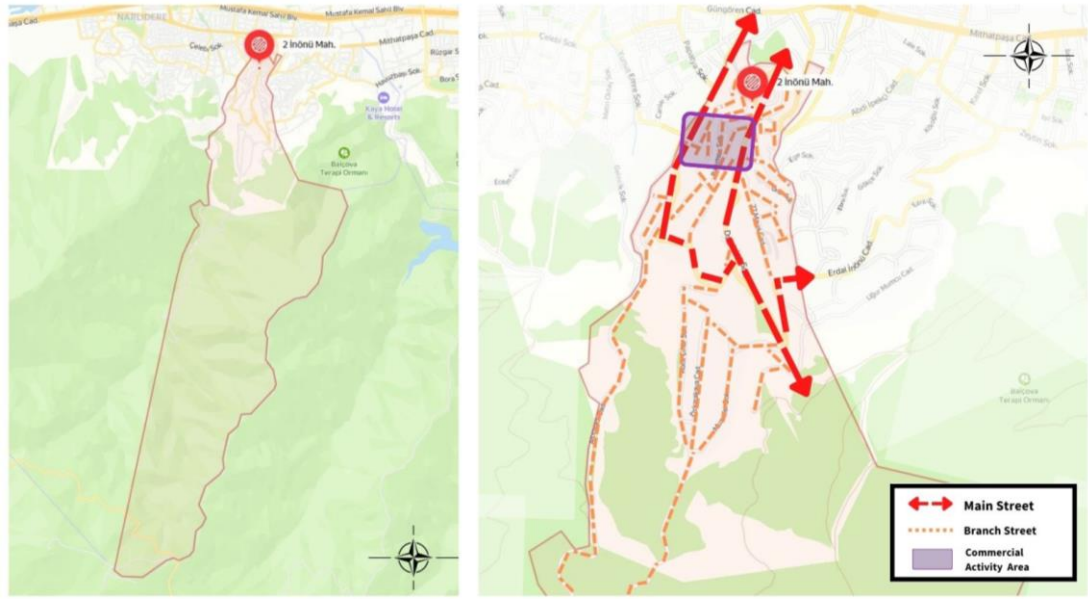


Figure 3.12 2. İnönü Neighbourhood

Sahilevleri Neighbourhood is mostly a summer resort area (Narlıdere Municipality 2020-2024 Strategic Plan). The construction has been formed in the form of detached low-rise buildings and low-rise buildings in the complex. When Sahilevleri Neighbourhood is analysed based on topography, it is seen that it was built on a flat area and closest to sea. It has the second largest surface area with 2,394 km and has an area of 2.00 m² per capita. According to the 2021 census data, a total of 1,934 people reside, and it is the region with the lowest population rate of Narlıdere District. There are 54 branch streets and 2 main streets in total. Settlements close to the coastline are economically preferred by high-income groups (Narlıdere Municipality 2020-2024 Strategic Plan). It is seen that agricultural areas are dense in the inner parts of the neighbourhood. It has a richer infrastructure in terms of number of parks and area (Figure 3.13, Figure 3.14).



Figure 3.13 Top View of Sahilevleri Neighbourhood (Reference of satellite image: 7891046)



Figure 3.14 Sahilevleri Neighbourhood

Table 3.2 Information about Narlıdere (Narlıdere Belediyesi, 2020).

Neighbourhood Name	Area (km2)	Street	Avenue	Total Population	Female Population	Male Population
2. İnönü	7,776	27	5	8.976	4.478	4.498
Çamtepe	0,367	39	4	6.169	3.196	2.973
Yenikale	0,377	33	2	5.466	2.921	2.545
Sahilevleri	2,394	54	2	1.934	1.025	909

3.2 Expert Survey Process

In this thesis, it is important to determine the expectations of health and space organization experts from a healthy housing and neighbourhood. In addition, it is aimed to compare these expectations with the opinions of the people living in the residence and the neighbourhood. For this reason, it was necessary to conduct an expert survey and to prepare a household survey based on the parameters obtained from the expert survey. Expert survey was applied to 55 people in total, 22 from design background and 23 from health background. It is aimed to make arrangements in order to evaluate the opinions obtained in the study and to create the final survey in this direction. Particularly, within the scope of the pilot expert survey, feedback was provided about the questions that they thought they had difficulty in understanding, how many minutes they completed the survey, the length of the survey, and the determination of the criteria related to housing and neighbourhood. With these feedbacks, additions and corrections were made to the questionnaire which was titled as Expert Survey (Annex-4), and the final questionnaire was created and carried out online. Expert survey consists of 3 parts and 12 questions:

1. There are questions about personal characteristics and contact information to determine the participant profile (Personal traits and lifestyle data).
2. According to participants' opinions before and after the pandemic, their opinions were requested about the qualities that should be in a healthy housing environment (healthy housing perception data).

3. There are the qualifications determined by the participants about the qualifications that should be in a healthy residence according to the pre- and post-pandemic conditions (healthy neighbourhood perception data).

In the questionnaire, there are two-choice and open-ended questions that allow them to express their opinions more freely apart from the given options. In the next section, the questions determined to measure the opinions of the participants are explained.

The answers obtained from the survey results and the answers given by design-based and health-based experts regarding housing and neighbourhood before and during the pandemic were grouped as being related to each other.

Housing criteria and grouping of responses are given in Table 3.3. The housing criteria created are gathered under 6 main headings: (1) robustness, insulation, earthquake resistance, infrastructure, (2) security and privacy, (3) Size, number of rooms, number of bathrooms, number of balconies, storage facilities, (4) presence of elevator, (5) use of garden and green space, (6) Bright and useful. These headings were compiled for the household surveys and were used directly in the 4th part of the survey (between questions 39 and 44). In the other sections, questions to be considered under these 6 main headings were prepared.

Table 3.3 Expert Survey Results- Housing Criteria

Housing Criteria		
1	Robustness, insulation, earthquake resistance, infrastructure	Without moisture, durable, heat insulated, earthquake resistance, electricity, internet, quality construction material, solid ground, new building, infrastructure, sound insulation
2	Security and privacy	Safety, silence, security, low density
3	Size, number of rooms, number of bathrooms, number of balconies, storage facilities	Separate room for each individual, at least two toilets and bathrooms, having a balcony or a garden, large kitchen, enough storage, size,
4	Presence of elevator	Elevator, ground floor, low-rise,
5	Use of garden and green space	Garden or a large balcony, wide green areas,
6	Bright and useful	Good ventilation, ergonomic, functional, useful, bright, sunny, comfortable, comfy,

The neighbourhood criteria and the grouping of the answers are given in Table 3.4. The housing criteria created are grouped under 6 main headings: (1) wide streets, wide sidewalks, distances between buildings, (2) access to services, (3) proximity to green spaces and parks, (4) beautiful, well-kept, and clean, (5) social and neighbourly relations, (6) security. These titles were compiled for the household surveys and were used directly in the 4th part of the survey (between the 45th and 50th questions). In the other sections, questions to be considered under these 6 main headings were prepared.

Table 3.4 Expert Survey Results- Neighbourhood Criteria

Neighbourhood Criteria		
1	Wide streets, wide sidewalks, distances between buildings,	wide streets, sidewalks, the suitability of the pavements, no parking problem, distance between buildings, no crowded,
2	Access to services,	near to the market, AVM, center, school, central, recreastional areas, easy to access, near to transportation,
3	Proximity to green spaces and parks,	green space, walking, sports fields, near to the sea, excess of garden/green space,parks, bike paths, near to recreational spaces, proximity to hospitals, large-scale parks, social areas within walking distance
4	Beautiful, well-kept, and clean,	clean air, cleanliness, well-maintained, regular removal of batons, aesthetic, beautiful, clean, landscaped
5	Social and neighbourly relations,	good neighborhood, social relations, good neighbors
6	Security	safe, absence of stray animals, creation of buffer zones, security

3.2.1 Obtaining Personal Traits and Lifestyle Data via Expert Survey

Within the scope of the expert survey, questions were asked about the personal characteristics and lifestyles of the participants in order to determine their profiles. The questions and scales regarding personal characteristics are given in Table 3.5. Accordingly, data such as the person's contact information, expertise, job title, institution, the year of birth, residence were obtained.

Table 3.5 Personal information

Questions	Evaluation
E-mail	Open-ended Question
Phone number	Open-ended Question
Profession	Multiple-choice Question (Design-Based (Architect, Interior Architect, Planner, etc./ Health Origin (Doctor, Nurse, Dentist etc.)
Where you work	Open-ended Question
Gender	Multiple-choice Question (Female/Male)
Year of birth	Open-ended Question
What city do you live in	Open-ended Question
Which district/neighbourhood do you live in	Open-ended Question

3.2.2 Healthy Housing and Neighborhood Perception via Expert Survey

The questions asked to determine the opinions of the participants about the housing are shown in Table 3.6. With these questions, it was tried to obtain data on people's daily lives and the way they use space before Covid-19.

Table 3.6 Healthy housing perception questions

Questions	Evaluation
The qualities that a healthy housing should have (Before pandemic)	Open-ended Question (Specify at least 3 different criteria)
The qualities that a healthy housing should have (After pandemic)	Open-ended Question (Specify at least 3 different criteria)

The questions asked to determine the opinions of the participants about the neighbourhood before and after the pandemic are given in Table 3.7. Thanks to these questions, users were expected to reveal their needs and expectations.

Table 3.7 Healthy neighborhood perception questions

Questions	Evaluation
The qualities that a healthy neighbourhood should have (Before pandemic)	Open-ended Question (Specify at least 3 different criteria)
The qualities that a healthy neighbourhood should have (After pandemic)	Open-ended Question (Specify at least 3 different criteria)

Age data was obtained by subtracting the year of birth asked in the survey from the year (2021) in which the survey was conducted. With the question of the city they live in, the information was obtained whether the participants resided in Izmir or not. In the question about the expertise of the people, the opinions of people from health background and design background were taken. In order to measure without restricting people's thoughts, most of the questions asked were arranged in such a way that they could be answered open-ended.

It was seen that the participants completed the survey in approximately 5 minutes. The fact that the phone number information directed to the participants in the expert survey was mostly blank created a feeling of insecurity in the people. For this reason, telephone number information was not requested in the final questionnaire.

The residence information in the pilot survey was given in more detail in the final survey form (number of children, residence status, people living with, people living together) and it was determined as a prerequisite for the participants to reside in the study area. The question type, which was reduced to living place in the pilot survey, was further elaborated in the expert survey as; type of house, floor where the house is located, presence of elevator, total area of the house, number of rooms, number of balconies/terraces, number of bathrooms.

In the expert study, the question in which the characteristics of the residence and its surroundings before and after Covid-19 were specified was arranged in such a way as to give an open-ended answer. The data obtained from the pilot survey and answers

were arranged as multiple choice or ranking in the final survey. In this way, the answerability of the questions is facilitated.

The survey aims to measure the extent to which participants' residences and surroundings affect people's expectations before and after the Covid-19 pandemic. It is thought that a change will take place regarding the ongoing habits that have entered our lives with the pandemic process. For this reason, in the final survey, the titles of housing and its surroundings were combined in the section with pre- and post-pandemic evaluations, and the question type was asked in the form of a 5-point Likert scale.

In general, with the open-ended questions included in the pilot survey, it was ensured that the pre- and post-pandemic evaluations were made and what their expectations were. In the final survey, these question types were arranged as multiple choice and ranking questions.

3.3 “Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period” Survey

In the thesis, a face-to-face survey which was titled as “Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period” (Annex-2) was prepared to determine the perceptions of the housing and neighbourhoods' qualities for before and after pandemic period. Participants consists of people reside in Sahilevleri, 2. İnönü, Çamtepe and Yenikale Neighbourhoods. With the aforementioned survey, it was aimed to collect data under five main headings on 52 different questions as (1) personal characteristics and lifestyle information, (2) dwelling characteristics, (3) neighbourhood satisfaction before and after pandemic, (4) evaluating the pre- and post-pandemic period for housing and neighbourhood, (5) future expectations.

In the questionnaire, there are closed-ended questions such as two-choice, multiple-choice, ranking questions, and open-ended questions, apart from the options given in the survey, where they can express their opinions more freely. In the next section,

questions regarding the determination of neighbourhood's characteristics before and after the pandemic are explained.

3.3.1 Obtaining Personal Characteristics and Lifestyle Data via “Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period” Survey

To determine the profiles of the participants within the scope of the Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period Questionnaire, questions were asked about the participants' personal characteristics and lifestyles. In addition to these, there are questions about the number of people living in the house and the state of owning the house. These data are given in Table 3.6. Accordingly, data on the participants' age, gender, profession, address, how many years they've lived in the same house, education level, monthly income, number of children and housing could be obtained.

Table 3.8 Personal characteristics and lifestyle

Questions	Evaluation
Gender	Multiple-choice Question (Female/Male)
Year of birth	Open-ended Question
Profession	Open-ended Question
Address	Open-ended Question (Street number/ Building number/Apartment number)
How long have you been living	Multiple-choice Question (Before pandemic (before March 2020)/ After pandemic (after March 2020))
Educational Background	Multiple-choice Question (Primary school graduate/Secondary school graduate/High school graduate/Graduated from a University/Master's Degree)
Monthly Income	Multiple-choice Question (Below minimum wage/Minimum wage/ Minimum wagex2/ Minimum wagex3/ Above and minimum wagex4)
Number of children	Multiple-choice Question (none/ 1/ 2/ 3 and above)
Owning a home	Multiple-choice Question (Owner/ Hirer/ Other)
How Many People Live	Multiple-choice Question (1/ 2/ 3/ 4 / 5 and above)
Who Do You Live with	Multiple-choice Question (Only with spouse/ Only with kids/ with spouse and children/ with another family member)

Age data was obtained by subtracting the year of birth asked in the questionnaire from the year 2022 in which the questionnaire was conducted. With the address information, it was learned what type of residence (gated community house, apartment, or detached house) the participants lived in. The knowledge of how many years they have lived in the same house is an important criterion for people to evaluate the house and its environment according to before and after the pandemic periods. It was preferred that the survey participants lived in the same residence for at least 1 year before the pandemic. Educational status and monthly income status data were obtained but not included in the analysis data directly. Instead, the data on education and employment status were converted into SES variable by using the Socio-Economic Status table of the Turkish Statistical Institute (TUIK). Questions such as the people living together in the house, and the number of children were asked to obtain information about the housing and family relationship.

3.3.2 Obtaining Data on Satisfaction Levels via “Examination of Physical and Perceptual Qualities of Neighborhoods After Pandemic Period” Survey

In the questionnaire to determine the home and neighbourhoods’ characteristics of the participants, questions were asked to be evaluated the satisfaction of the participants regarding their current usage areas before and after the pandemic with Likert Scale. By asking questions about the characteristics of the house, the data about the healthy house were collected in Table 3.7. All the sentences are expressed as positive phrases.

Table 3.9 Satisfaction Levels of the house and data about the healthy house

Questions	Evaluation	
	Before Pandemic	After Pandemic
I am happy with the neighborhood I live in.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I am satisfied with the size of the house.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I am satisfied with the number of rooms.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The number of bathrooms/toilets is sufficient.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The number of balconies/terraces is sufficient.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
Storage areas are sufficient.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I am satisfied with services such as electricity, water, gas and internet.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I am satisfied with the garden of my residence.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)

With these questions, satisfaction with the neighbourhood, the size of the house, the number of rooms, the number of bathrooms / toilets, the number of balconies / terraces, the storage areas, isolation, infrastructure, and the use of the garden, if any, were tried to be measured.

3.3.3 Obtaining Data Sufficiency Levels via “Examination of Physical and Perceptual Qualities of Neighborhoods After Pandemic Period” Survey

In the questionnaire to determine the sufficiency levels of home and neighbourhoods’ characteristics of the participants, questions were asked to be evaluated regarding their current usage areas before and after the pandemic with Likert Scale. By asking questions about the characteristics of the house, the data about the healthy house were collected in Table 3.8. All the sentences are expressed as positive phrases.

Table 3.8 Competency Levels of the house and data about the healthy house

Questions	Evaluation	
	Before Pandemic	After Pandemic
Storage areas are sufficient.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
My house is strong/resistant against earthquakes.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The house I live in is useful/comfortable/ergonomic.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I use the elevator in the building where my residence is located (if it is an apartment)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
My neighbourhoods is safe from crime.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The traffic around my residence is suitable for pedestrians.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The green areas and parks near my residence are in good condition/maintained.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
I often go to the shopping malls/shops around the residence.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The density of people in the area where the residence is located is very high.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)
The buildings around my residence are very close to each other/congested.	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)	6-point Likert Scale (1 lowest, 5 highest, 6=No idea)

With these questions, competency levels with the neighbourhood, storage, resistance, ergonomic/usefulness/ comfortably, presence of elevator, security/safety, traffic safety, pollution, accessibility of parks and green spaces were tried to be measured.

3.3.4 Obtaining Housing Data in Pre- and Post-Pandemic via “Examination of Physical and Perceptual Qualities of Neighborhoods After Pandemic Period” Survey

In the Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period Questionnaire, there are grouping headings made with the information obtained from the expert questionnaire. Participants were expected to rank 3 qualities related to housing before and after the pandemic in order of importance. Thus, questions to compare expectations about housing and neighbourhood before and after the pandemic were discussed (Table 3.10).

Table 3.10 Expectations about housing

Questions		Evaluation	
		Before Pandemic	After Pandemic
Residence	Robustness, insulation, earthquake resistance, infrastructure	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Security and privacy	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Size, number of rooms, number of bathrooms, number of balconies, storage facilities	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Presence of elevator and floor	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Use of garden and green space	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Bright and useful	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)

With these questions, expectation levels with the house (Robustness/ insulation/ earthquake resistance/ infrastructure, security and privacy, size/ number of rooms/ number of bathrooms/ number of balconies/ storage facilities), were tried to be measured.

3.3.5 Obtaining Neighbourhood Data in Pre- and Post-Pandemic via “Examination of Physical and Perceptual Qualities of Neighborhoods After Pandemic Period” Survey

In the Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period Questionnaire, there are grouping headings made with the information obtained from the pilot questionnaire. Participants were expected to rank 3 qualities related to housing before and after the pandemic in order of importance. Thus, questions to compare expectations about housing and neighbourhood before and after the pandemic were discussed (Table 3.11).

Table 3.11 Expectations about neighbourhood

Questions		Evaluation	
		Before Pandemic	After Pandemic
Negihbourhood	Wide streets, wide sidewalks, distances between buildings	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Access to services (work, school, shopping, education, public institutions, etc.)	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Proximity to green spaces and parks	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Beautiful, well-kept and clean	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Social and neighbourly relations	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)
	Security	Ranking (1 most important, 3 least important)	Ranking (1 most important, 3 least important)

3.3.6 Obtaining Housing and Neighborhood Future Views

In the last part of the questionnaire, open-ended questions were asked in order to benefit from the independent opinions of the individuals (Table 3.12). After saying yes or no in the answers given, clarification was expected. Thus, people's willingness to move to another neighbourhood is a type of question to examine their satisfaction level. The question asked about the expectations of people for a healthier life in the

neighbourhoods is important for the future development of the residential environment.

Table 3.12 Housing and neighbourhood Future Views

Questions	Evaluation
I would like to move to another neighbourhood	Open-ended Question (Yes why/ No why)
What do you think should be done for a healthy life in the environment where your residence is located?	Open-ended Question

3.4 Sample Selection and Survey Application Process

Due to the high rate of transmission of the Covid-19 pandemic, the expert survey was held online. In this direction, “Expert Survey” was created in 25.10.2021. With the online survey platform, an automatic link was created to enter the survey form. The survey form can be opened from mobile devices and/or computer via the link and the survey can be filled. To distribute the pilot survey to participants, 45 people were interviewed. The survey link address was communicated to health-based professions and design-based professions that conveyed with a snowball sample. Survey entries were finalized in 14.10.2021. Although 45 participants entered the survey throughout the process, all of them could be used in the analysis. The data of the study is based on the answers given to the survey questions applied within the scope of the “Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period Questionnaire”.

The aim of the thesis study can be summarized as trying to determine how the physical qualities of a neighbourhood are perceived by the people living in that neighbourhood in relation to the pandemic. In other words, the perceptual evaluations of those who experienced the neighbourhood before and during the pandemic are as important as the physical characteristics of the neighbourhood. Therefore, the household survey participants were selected from people residing in the study area. In this context, one of the questions asked to the participants in the household survey was to determine how long they lived in the house before the pandemics (before March 2019).

According to the Turkish Statistical Institute (TUIK) Address Based Population Registration System (ABPRS) 2020 data, 21,493 people live in these four neighbourhoods. The sample size planned to be surveyed within the scope of the study was calculated as follows:

In determining the sample number, the calculation was made in line with the parameters of population size (the number of populations in four neighbourhoods), margin of error and confidence interval. Accordingly, $Z = 1.96$ (95% confidence interval), $p = 50$ (distribution of participants' answers) parameters were accepted. The margin of error was accepted as $E = 4$ (0.04), and the sample size calculated in the light of these parameters was found to be at least 600 people. For the distribution of the sample according to the neighbourhoods, the coefficients for the neighbourhoods were determined by dividing the number of populations in the neighbourhoods to the population of the four neighbourhoods. Accordingly, it was envisaged to conduct a survey with 54 people (total population is 1948) in Sahilevleri neighbourhood, 222 people (total population is 7946) in 2. İnönü neighbourhood, 202 people (total population is 7234) in Çamtepe neighbourhood and 122 people (total population is 4365) in Yenikale neighbourhood. However, due to the size of the study area, the limited duration of the thesis study and the similarity of the settlement patterns in the neighbourhoods, the number of samples determined based on households in the neighbourhoods.

According to TUIK 2020 data, the household size for Izmir is 2.91. When this data is compared with the number of surveys to be made in the neighbourhoods, it is seen that it will be sufficient to conduct a survey with 19 households in Sahilevleri, 76 households in 2. İnönü, 69 households in Çamtepe and 42 households in Yenikale. Therefore, it is planned to conduct a survey with 206 households in total. These survey distributions will be made equally in regions with similar characteristics when the neighbourhoods are examined spatially. According to the spatial arrangement of the neighbourhood, 2 regions in the Sahilevleri neighbourhood (gated communities consisting of low-rise buildings and detached houses consisting of low-rise buildings), a single region in Çamtepe neighbourhood, 2 regions in Yenikale neighbourhood (multi-storey closed sites and apartment-type construction) and 2. In the İnönü

neighbourhood, 2 regions (multi-storey gated complexes and slums) were identified. The number of surveys planned to be made in each neighbourhood will be distributed equally to the regions in the neighbourhood. In this direction, building types were determined with the ARCGIS program. Buildings such as the headman's office, market, and greengrocer were excluded from these groups and a random assignment was made with the program. Accordingly, the household numbers to be surveyed were determined as follows: Sahilevleri Neighbourhood 19, 2. İnönü Neighbourhood 76, Çamtepe neighbourhood 69, Yenikale Neighbourhood 42.

A survey company was interviewed for the implementation of the survey. In order for the study to be carried out correctly by the survey company, a preliminary interview was held, and information was given about the survey questions. After the houses to be surveyed were determined, they were sent online to the company in a file in the form of their open addresses, building numbers and flat numbers. Participants were required to reside at the address, be over the age of 18 and be a family member. In case it's presumed as there are no persons at the specified addresses. Then it is preferred to search for other flats in the same apartment. If no one is reached in the apartment, it is preferred to follow the buildings on the same block and reach the appropriate participants. If there are detached houses in the area to be surveyed, suitable participants were reached by following the buildings on the right-side.

After the approval of the ethics committee, the surveys started to be conducted on 22.02.2022. Before starting the survey, the interviewer was informed about the study and the participants who accepted the study filled the "DEU Ethics Committee Informed Voluntary Consent Form" (Annex-1). Then, the "Examination of Physical and Perceptual Qualities of Neighbourhoods After Pandemic Period Questionnaire", which was prepared within the scope of this thesis and answered in approximately 5-12 minutes, was conducted. Questions such as address, gender, type of house that the interviewer could answer were not asked to the participant. In order to answer all of the survey questions, the interviewer directed the questions and marked them on the paper. For easily answering the comparison questions in the last section, cards were printed, and the participants were asked to select and pick 3 cards. In these cards, 6 properties related to housing were given and they were asked to choose 3 items: (1)

robustness, insulation, earthquake resistance, infrastructure, (2) security and privacy, (3) size, number of rooms, number of bathrooms, number of balconies, storage facilities, (4) presence of elevator, (5) use of garden and green space, (6) bright and useful. On the other floors, 6 features related to the neighbourhood were given and they were asked to make 3 choices: (1) wide streets, wide sidewalks, distances between buildings, (2) security and privacy, (3) access to services, (4) proximity to green areas and parks, (5) well-kept and clean, (6) social and neighbourly relations.

To ensure the reliability of the questionnaires, the field workers were supervised by the supervisor and the studies in the same field were carried out with at least two people. The survey outputs were randomly selected and searched by the company and their accuracy was confirmed.

After the survey results were obtained, it was determined that the survey was conducted with 244 participants (Female: 87, Male:157). As can be seen, the number of male participants among the volunteers participating in the survey is more than the female participants. This should be considered when evaluating the results. When the neighbourhoods were examined, the participants were as follows; Sahilevleri neighbourhood 33, 2. İnönü neighbourhood 112, Çamtepe neighbourhood 58, Yenikale neighbourhood 41. The survey numbers planned to be conducted in each neighbourhood are in line with the survey results.

3.5 Obtaining Numerical Data Related to the Study Area and Calculations at the Neighbourhood Level

Within the scope of the thesis, as a result of the negotiations with the Izmir Metropolitan Municipality, Narlıdere Municipality Geographic Information Systems Unit, GIS-based baseline plans for the Sahilevleri District, 2. İnönü District, Çamtepe District and Yenikale District of the Narlıdere district were obtained. This information includes the following data: (1) neighbourhood boundaries (neighbourhood layer, areal data, graphical data with .shp extension), (2) All structures (building layer, areal data, graphical data with .shp extension) and ground and upper floors of buildings number of all buildings, neighbourhood, street, door number, numbering type (building main entrance / independent main entrance), independent section number

and independent section nature (residence, private workplace, public workplace, construction, other).

Autocad 2020 program was used for base map analysis. Yandex Maps and Google Maps scanning engine were used to check the up-to-dateness of the data received from the Metropolitan Municipality.

Within the scope of the study, it was aimed to obtain data on physical and perceptual qualities of neighbourhood before and after pandemic period. This data includes (1) the total block size, (2) the total construction area in the block, (3) the total construction area/building block, (4) the garden area where the block sits, (5) the floor area/garden size of the building, (6) distance to the nearest building, (7) building pull distance.

Calculating (1) total block size, (2) total construction area and (3) total construction area/building block are given in Figure 3.15. Building block is surrounded by natural or artificial factors is the name given to the group of parcels used to describe all the formations of points such as street, square, avenue, stream, or railway. The calculation of this entire area is the total building block. The total construction area is calculated by multiplying the floor areas of all buildings on the block by the storey heights of the buildings. The calculation in the third picture is “Floor Area Floor Number (KAKS)”. KAKS is calculated by dividing total construction area by building block.

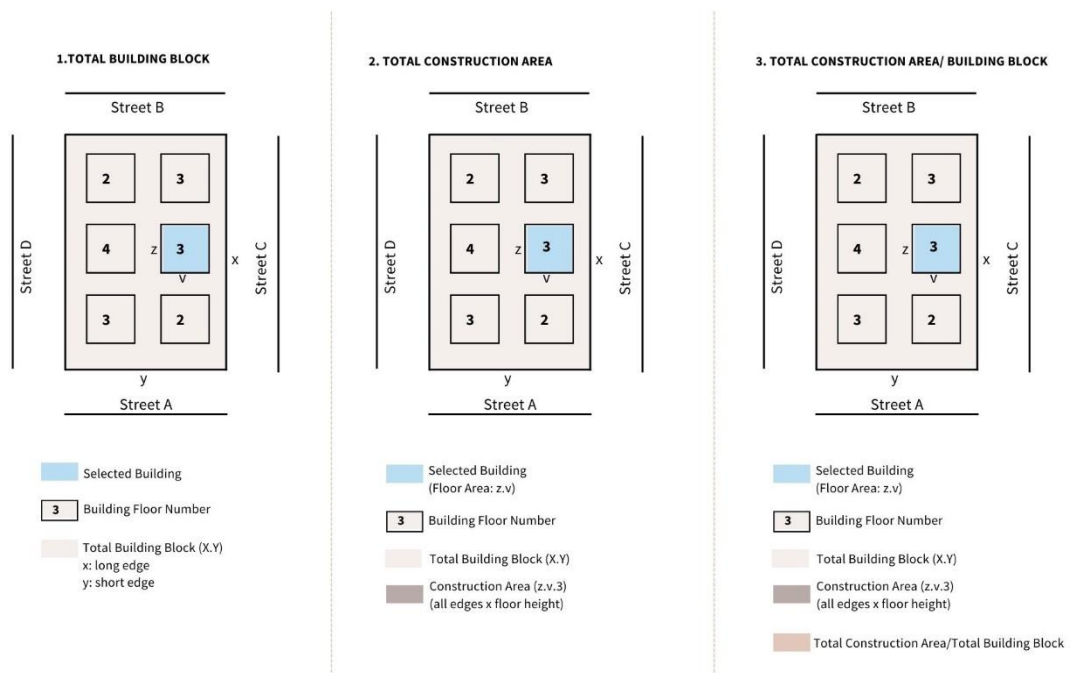


Figure 3.15 Total block, construction area, total construction area/ building block

Calculating (4) total yard and (5) setback distance are given in Figure 3.16. Total yard is calculated by total area of building from building itself. While calculating for the sites, the entire site is considered as a parcel. Total yard is calculated by subtracting the building floor areas from the plot. In the 5th diagram, the distance between the road and the building entrance was calculated.



Figure 3.16 Total yard and setback distance

Building Base Area/Total Yard and Distance to Nearest Building calculations are given in Figure 3.17. Calculation was made in diagram 6 by dividing building base area by total yard. In 7th diagram, the distance to the nearest building was calculated.



Figure 3.17 Building Base Area/Total Yard and Distance to nearest house

The above-mentioned 7 measurements (Total block, construction area, total construction area/ building block, total yard, setback distance, building Base Area/Total Yard and Distance to nearest house) were collected so that 4 analyses could be made. “Building Base Area/Total Yard” ratio was calculated as TAKS value in planning. The TAKS value shows how much of the floor area of a building can occupy at most within the building plot. The ratio of “Total construction area/ building block” appears as the KAKS value. KAKS, which means the floor area coefficient as the word expansion, has the same meaning as the precedent. KAKS is the number obtained from the ratio of the total floor area of the building to the parcel area. The maximum net square meter construction area that can be built on that plot (if the total area of the flats) can be calculated by multiplying the area of a plot with the value on the zoning plan. Front, back and side garden distances are the distances that the building can get closest to its parcel boundaries on the ground. In the zoning plans, the distance of the buildings to be built on the parcel to the border of the adjacent parcel on the front and side is also shown. These are called garden distance or setback distance. The front yard is the parcel sections between the front of the building and the front of the parcel. The backyard is the part of the parcel between the back of the building, which does not have a neighbour to the front garden, and the border of the parcel adjacent to the rear. All these ratios calculated on the map were obtained in order to analyse the occupancy-space ratios and building densities in the study area.

3.6 Summary of Method and Application

In summary, two different questionnaire forms were prepared for the thesis study. The first is the expert survey and was conducted online. The second one is the household survey, and it was conducted with the help of a survey firm through face-to-face interviews in the field. To apply the questionnaire within the scope of the thesis, permission was requested to conduct the questionnaire in İzmir Narlıdere district through the The Graduate School of Natural and Applied Science, with the ethics committee approval (Annex-1) obtained from the DEU Science and Engineering Research and Publication Ethics Committee. A request was made for the application of the survey in the 2. İnönü District, Çamtepe District, Yenikale District, Sahilevleri District, which are the neighbourhoods of Narlıdere. The company was interviewed

for the application of the questionnaire. In order to carry out the questionnaire, the District Governorship was contacted, and it was stated that no permission request was required. After the ethics committee approval, the field study of the questionnaire started. The data collection process is discussed in detail in Table 3.13.

Table 3.13 The data collection process

Period	Date	Method	The number of participants
Arrangement of pilot survey questions	25.10.2021	Online	
Beginning of Expert Survey	14.10.2021	Online / Snowball Sample	Sharing the questionnaire with their own means
Preparing information for the Ethics Committee	20.10.2021	Online / Face to face	
End of Expert Survey	25.10.2021	Online	45 (F: 32/ M: 13)
Questionnaire Ethics Committee Permission Application	3.11.2021	Inscribed	
Meeting with the Survey Company at DEU	8.01.2022	Face to face	
Ethics committee approval	11.01.2022	Inscribed	
Compilation of information for conducting the survey	16.01.2022	Online Meeting	Sharing the questionnaire with Company
Correction of Ethics Committee approval	21.02.2022	Sending a letter through the Institute	
Beginning of the survey	22.02.2022	Face to face	Sharing the questionnaire with Company
Negotiation for District Governor's Permit	28.02.2022	Face to face	
End of the Survey	4.03.2022	Meeting	244 (F:87 /M:157)
Receipt of survey documents from the company	9.03.2022	Face to face	
Online submission of survey results	11.03.2022	Online Meeting	

3.7 Participants

In this section, the findings related to the socio-economic and demographic information of the participants, and the characteristics of their current residences are given.

3.7.1 Participants' Demographic Information

The distribution of the participants living in the Narlıdere district of İzmir, Sahilevleri neighbourhood, 2. İnönü neighbourhood, Çamtepe neighbourhood and Yenikale neighbourhood and forming the sample group, according to their socio-economic and demographic characteristics was examined. In this section, information about the participants' gender, age, having a child, life period of the families, education and income status, and ownership of the house were given.

In Table 3.14, the numerical distribution of the participants according to the 4 Neighbourhoods is given. A total of 244 people, including 112 people in İnönü neighbourhood, 58 people in Çamtepe neighbourhood, 41 people in Yenikale neighbourhood, and 33 people in Sahilevleri Neighbourhood, participated to the survey.

Table 3.14 numerical distribution of the participants

		Frequency	Percent
Valid	2.İNÖNÜ	112	45.9%
	ÇAMTEPE	58	23.8%
	SAHİLEVLERİ	33	13.5%
	YENİKALE	41	16.8%
	Total	244	100.0%

The gender distribution of the participants according to the neighbourhoods is given in Table 3.15. It is seen that the participants in the specified neighbourhoods are predominantly male. Of the total 244 participants, 87 are women and 157 are men. The unequal situation in the gender distribution needs to be taken into account when evaluating the results. In the 2. İnönü Neighbourhood, where the number of

participants is the highest, 30 of the 112 participants are female and 82 are male. 23 women and 35 men participated in Çamtepe Neighbourhood. While 18 of the participants were male and 23 were female in Yenikale Neighbourhood, 22 of the participants were male and 11 females in Sahilevleri Neighbourhood.

Table 3.15 Gender distribution of the participants

		Gender		Total
		Male	Female	
Neighborhood	2.İNÖNÜ	82	30	112
	ÇAMTEPE	35	23	58
	SAHİLEVLERİ	22	11	33
	YENİKALE	18	23	41
Total		157	87	244

When the neighbourhoods are examined, the average age of all participants is 40.5 (Table 3.15). The average age of male participants is 41.7 (Min=19, Max=69, SD=43.5). The average age of female participants is 40.4 (Min=18, Max=65, SD=44.1). In 2. İnönü Neighbourhoods, the average age of men is 40.5 (Min=19, Max=65, SD=45.6), and the average age of women is 39.7 (Min=19, Max=65, SD=47.5). In Çamtepe neighbourhoods, the average age for men is 39.5 (Min=19, Max=69, SD=43.5), and the average age for women is 40.9 (Min=18, Max=65, SD=44.1). In Sahilevleri neighbourhoods, the average age for men is 50.9 (Min=19, Max=65, SD=45.6) and the average age for women is 41.8 (Min=18, Max=65, SD=44.1). In Yenikale neighbourhoods, the average age of men is 41.7 (Min=19, Max=65, SD=45.6), and the average age of women is 40.4 (Min=19, Max=60, SD=41.1). In short, it is seen that the participants from each neighbourhood (regardless of gender) are adults.

Table 3.16 Gender distribution of the participants 2

		Gender		Total
		Male	Female	
Neighbourhood	2.İNÖNÜ	82 (Mean=40.5)	30 (Mean=39.7)	112 (Mean=40.3)
	ÇAMTEPE	35 (Mean=39.5)	23 (Mean=40.9)	58 (Mean=40.0)
	SAHİLEVLERİ	22 (Mean=50.9)	11 (Mean=41.8)	33 (Mean=47.8)
	YENİKALE	18 (Mean=40.7)	23 (Mean=40.3)	41 (Mean=35.9)
Total		157 (Mean=41.7)	87 (Mean=40.4)	244 (Mean=40.5)

It is seen that 158 of the families included in the research have children and 86 of them have not. In 2. İnönü neighbourhood, while the participants mostly have 2 children, there is no one with more than 3 children. In Çamtepe neighbourhood, 10 of the participants have one child and 23 people have 2 children. Most of the participants in Sahilevleri Neighbourhood have 2 children. While 27 participants had children in Yenikale Neighbourhood, 14 participants had no children. In short, it is seen that the participants mostly have children. This situation has been evaluated as an important and essentially a necessary quality in the evaluation of the characteristics of the residence and the neighbourhood.

Table 3.17 Number of children

		Number of Children					Total
		1	2	3	Above 3	None	
Neighbourhood	2.İNÖNÜ	25	51	1	0	35	112
	ÇAMTEPE	10	23	0	0	25	58
	SAHİLEVLERİ	2	15	2	2	12	33
	YENİKALE	6	17	2	2	14	41
Total		43	106	5	4	86	244

The residence time of the families before and after the pandemic period is given in Table 3.18 and Table 3.19. The respondents were expected to have resided for at least 1 year prior to the pandemic. Thus, they were able to make more accurate assessments than before and after the pandemic. It is seen that they have experienced the surveyed residence and neighbourhood for an average of 6.49 years before the pandemic and an average of 0.12 years after the pandemic. This is an important issue within the scope of the thesis work.

Table 3.18 The residence time of families before pandemic

Before Pandemic			
Neighbourhood	Mean (Year)	N	Std. Deviation
2.İNÖNÜ	5,40	112	3.494
ÇAMTEPE	10,62	58	6.494
SAHİLEVLERİ	14,45	33	8.209
YENİKALE	9,39	41	4.128
Total	8,54	244	6.131

Table 3.19 The residence time of families after pandemic

After Pandemic			
Neighbourhood	Mean (Year)	N	Std. Deviation
2.İNÖNÜ	1,99	112	.094
ÇAMTEPE	1,95	58	.223
SAHİLEVLERİ	2,00	33	.000
YENİKALE	2,00	41	.000
Total	1,98	244	.127

Educational status of the participants is given in Table 3.20. The total number of primary school graduates is 9, the total number of secondary school graduates is 13, the total number of high school graduates is 88, the total number of university graduates is 119, and the number of postgraduate graduates is 15.

Table 3.20 Educational status

		Demography					Total
		Primary School	Secondary School	High School	Postgraduate	University	
Neighbourhood	2.İNÖNÜ	0	3	34	3	72	112
	ÇAMTEPE	5	3	20	7	22	57
	ÇAMTEPE	0	0	1	0	0	1
	SAHİLEVLERİ	4	4	12	1	12	33
	YENİKALE	0	3	21	4	13	41
Total		9	13	88	15	119	244

Participants' monthly income information is given in Table 3.21. In 2021, the minimum wage is 2 thousand 943 liras gross (2,943 TL) and 2 thousand 324 liras 70 cents net (2,324.70 TL). While the total number of people earning minimum wage is

38, the number of people earning less than minimum wage is 2. The number of people receiving twice the minimum wage is 123, the number of people receiving three times the minimum wage is 40, and the number of people receiving four times the minimum wage and above is 38. According to these values, it is seen that the people with the highest income are mostly in the 2. İnönü and Çamtepe neighbourhoods, while the people with the lowest income are in the 2. İnönü and Yenikale neighbourhoods. In both cases, the fact that the 2. İnönü neighbourhood was determined is since the neighbourhood contains different constructions such as gated community and slum areas.

Table 3.21 Monthly Income

		Monthly Income					Total
		Minimum Wage	Below Minimum Wage	Minimum Wages2	Minimum Wages3	Minimum Wages4 and Above	
Neighbourhood	2.İNÖNÜ	n=13	n=1	n=55	n=27	n=16	n=112
	ÇAMTEPE	n=6	n=1	n=32	n=	n=12	n=58
	SAHİLEVLERİ	n=7	n=0	n=13	n=2	n=8	n=33
	YENİKALE	n=12	n=0	n=23	n=4	n=2	n=41
Total		n=38	n=2	n=123	n=40	n=38	n=244

The status of the participants' ownership of the house they live in is given in Table 3.22. According to this table, while 97 of the participants in the 2nd İnönü Neighbourhood are homeowners, 12 are renters. While 36 of the participants are homeowners in Çamtepe Neighbourhood, 19 are tenants. In Sahilevleri Neighbourhood, 30 of the participants are owners, while only 1 is a tenant. While 39 of the participants are homeowners in Yenikale Neighbourhood, 2 of them are tenants. When examined in general, only 5 of the participants gave the answer other, 202 answered the owner, and 34 answered the tenant. It is seen that approximately 82.7% of the participants are homeowners.

Table 3.22 Home Ownership

		Home Ownership				Total
			Other	Owner	Renter	
Neighborhood	2.İNÖNÜ	n=2	n=97	n=12	n=112	
	ÇAMTEPE	n=1	n=36	n=19	n=58	
	SAHİLEVLERİ	n=2	n=30	n=1	n=33	
	YENİKALE	n=0	n=39	n=2	n=41	
Total		n=5	n=202	n=34	n=244	

The number of people living in the house is given in Table 3.23. A total of 13 people live alone, 32 people live with 2 people, 83 people live with 3 people, 103 people live with 4 people, 10 people live with 5 people and 3 people live with more than 5 people. Therefore, the majority of the participants live in houses with 4 people and 3 people, which will provide important findings especially in the evaluation of housing qualities.

Table 3.23 Number of People Living in the House

		Number of People Living in the House						Total
		1	2	3	4	5	Above 5	
Neighbourhood	2.İNÖNÜ	n=7	n=16	n=43	n=45	n=1	n=0	n=112
	ÇAMTEPE	n=5	n=2	n=24	n=20	n=7	n=0	n=58
	SAHİL EVLERİ	n=0	n=13	n=6	n=11	n=0	n=3	n=33
	YENİKALE	n=1	n=1	n=10	n=27	n=2	n=0	n=41
Total		n=13	n=32	n=83	n=103	n=10	n=3	n=244

The persons with whom the participants live together in the house are given in Table 3.24 A total of 75 people live with another family member, 77 people with their partner and children, 52 people with only their children, 28 people with only their partner and 12 people alone. It is seen that approximately 30% of the participants do not live with another family member or with their partner and child.

Table 3.24 Living people together in the house

		Living together in House					Total
		Another Family Memeber	Partner and Children	Only Children	Only Partner	Single	
Neighbourhood	2.İNÖNÜ	n=25	n=53	n=13	n=14	n=7	n=112
	ÇAMTEPE	n=23	n=5	n=24	n=1	n=5	n=58
	SAHİLEVLERİ	n=5	n=15	n=0	n=13	n=0	n=33
	YENİKALE	n=22	n=4	n=15	n=0	n=0	n=41
Total		n=75	n=77	n=52	n=28	n=12	n=244

3.7.2 Socio-Economic Status (S.E.S)

Social status is an individual's position in a particular society and culture (social position) and determines the individual's place in the social environment and social organization (Suher, 2014). The position of individuals and/or households in the social hierarchy can be defined as their socioeconomic status. Socio-Economic Status (SES) is the ability to group people according to their economic and social status. In TUIK's SES table, A and B represent the upper income groups, C1 and C2 represent the middle-income groups, and D and E represent the lower income groups. Groups A and B are very few in the general population, they live in nuclear families, are absolutely educated, and have comfort standards. C1 and C2 groups are common in the population. The number of people living in the household is usually 4, they often have only one house and education is no longer an effective factor. Groups D and E have the highest level of productivity in terms of population and the lowest level of productivity in terms of education. Most of them are not homeowners and their living comfort is very low (Marks, 2017; Adler & Ostrove, 1996; Baker, 2014). The TUIK's SES scale was used to provide this measurement for the participants (Table 3.25).

Table 3.25 Socio-Economic Status (S.E.S)

		Primary School Dropout	Primray School	Middle School	High School		Collage	University 2 year
					Normal	Vocational		
Earnar								
Retired								
**	Retired- work	To be coded according to previous job						
**	Retired- not v	To be coded according to previous job						
Part A- No inc								
1a	Unemployed · E	E	D	D	D	D	C2	C2
1b	Unemployed · D	D	C2	C2	C2	C2	C1	C1
2a	Housewife- n· E	E	D	D	D	D	C2	C2
2b	Housewife- A· D	D	C2	C2	C2	C2	C1	C1
3	Student		D	C2	C2	C2	C2	C2
Part B- Income earning, employed								
4a	Employee- irr E	D	D	C2	C2	C2	C2	C1
4b	Employee- Re D	C2	C2	C1	C1	C1	C1	B
5	Headworker · D	C2	C2	C1	C1	B	B	B
6	Officer · D	C2	C2	C1	C1	B	B	B
7	Manager(1-5 · C2	C1	C1	C1	C1	B	A	A
8	Manager(6-10 C2	C1	C1	C1	B	B	A	A
9	Manager(11-20 C1	C1	C1	B	B	B	A	A
10	Manager(mor C1	C1	B	B	B	A	A	A
11	Military Service	C2	C2	C1	C2	B	B	B
12	Expert(Doctor, Lawyer,Architect etc.)						A	A
Part C-Self-employed-Qualified specialist								
13	Farmer · D	D	D	C2	C2	C2	C1	C1
14	Peddler · C2	C2	C2	C1	B	C1	B	B
15	Small busines C2	C1	C1	C1	B	B	B	B
16	Business Own C2	C1	C1	B	B	B	B	B
17	Business Own C1	C1	C1	B	B	B	A	A
18	Business Own C1	C1	B	B	B	A	A	A
19	Business Own C1	C1	B	B	A	A	A	A
20	Independent Expert(Doctor, Lawyer,Architect etc.)						A	A

The professions of the participants are grouped according to the SES table (Table 3. 26). 49 of the total participants are employees, 63 are do their own business, 43 are public officer, 40 are retired, 16 are student and 33 are unemployed.

When the participants are analysed according to the SES tables low, middle and upper SES classifications, there are 43% (n=107) participants in the Upper income group. The highest number of participants is in the middle-income group with a rate of 47% (n=112). Only 8% (n=25) of the respondents are in the low-income group (Table 3.24).

Table 3.26 Survey results according to SES table

		SES Scale									Total
		A	B	Upper Income (A,B)	C1	C2	Middle Income (C1,C2)	D	E	Low Income (D,E)	
Neighborhood	2.İNÖNÜ	17	44	54.4% (n=61)	24	22	41% (n=26)	5	0	4.5% (n=5)	112
	ÇAMTEPE	4	22	44.8% (n=26)	17	10	46.5% (n=27)	4	1	8.6% (n=5)	58
	SAHİLEVLERİ	1	4	15.5% (n=5)	12	8	60.6% (n=20)	6	2	24.2% (n=9)	33
	YENİKALE	1	14	36.5% (n=15)	8	11	46.3% (n=19)	7	0	17.2% (n=7)	41
Total		23	84	43.9% (n=107)	61	51	45.9% (n=112)	22	3	10.2% (n=25)	244

In the 2. İnönü neighbourhood, 54.4% of the participants are in the upper income group, 41% are in the middle-income group, and 4.5% are in the low-income group. 44.8% of the participants in Çamtepe neighbourhood are in the upper income group, 46.5% are in the middle-income group, and 8.6% are in the low-income group. 15.5% of the participants in the Sahilevleri neighbourhood are in the upper income group, 60.6% are in the middle-income group, and 24.2% are in the low-income group. 36.5% of the participants in Yenikale neighbourhood are in the upper income group, 46.3% are in the middle-income group, and 17.2% are in the low-income group. 2. İnönü, Çamtepe, Sahilevleri and Yenikale neighbourhoods, most of the participants are in the upper- or middle-income group.

3.7.3 Participant's Houses

During the social isolation period, the characteristics and qualifications of the participants' homes have become an issue to be considered. One of the other social areas among these areas has been the elevators. While in the elevator, individuals avoided contacting as much as possible due to the pandemic (Goffman, 2017). However, there is one thing that is stated in the process of applying the physical distance rules, which is not to use the elevator unless it is necessary, and even warnings were made to pay attention to the elevator buttons if used. For this reason, the floor heights of the houses where the participants' live, and the presence of elevators have become an important issue during the pandemic period.

The floor heights of the participants' houses are given in Table 3.27. 112 of the participants are on the 1-3 floor, 51 on the 4-6th floor, 8 of them are on the 6-10. floor, 34 people live on the ground floor, 21 people live in a detached house, 10 people live in a villa type house, and 8 people live on the basement.

Table 3.27 Floor height of the house

		Floor height of the house							Total
		1_3	4_6	6_10	Ground floor	Detached house	Villa	Basement	
Neighbourhood	2.İNÖNÜ	75	29	4	0	4	0	0	112
	ÇAMTEPE	17	13	1	27	0	0	0	58
	SAHİLEVLERİ	4	0	0	1	17	10	1	33
	YENİKALE	16	9	3	6	0	0	7	41
Total		112	51	8	34	21	10	8	244

The presence of elevators in the participants' houses is given in Table 3.28. While there is an elevator in the houses of 111 participants, there is no elevator in the houses of 133 participants. In summary, 45.9% of the total participants live between 1-3 floors and 45.4% of them have an elevator in their homes.

Table 3.28 Presence of elevators

		Elevator		Total
		Yes	No	
Neighbourhood	2.İNÖNÜ	107	5	112
	ÇAMTEPE	2	56	58
	SAHİLEVLERİ	0	33	33
	YENİKALE	2	39	41
Total		111	133	244

During the pandemic period, service volumes in homes have been replaced by work areas or personal escape areas for residents. Workstations are set up in the empty spaces of the bedrooms. In short, the houses we lived in, which we could fit in before, have almost shrunk and these houses have begun to be insufficient. So much so that, in this period, some criteria emerged that people did not pay attention to before in their search for the ideal home. At this point, the size of the house and the number of rooms have become an issue that needs to be addressed together.

The total m2 area of the house is given in Table 3.29. 13 of the total participants live in 0-80 m2 houses, 124 in 80-120 m2 houses, 102 in 121-60 m2 houses, 5 in 161 and above m2 houses.

Table 3.29 Total area of the house

		Total m2				Total
		0-80	121-160	161 and above	80-120	
Neighbourhood	2.İNÖNÜ	1	50	3	58	112
	ÇAMTEPE	7	4	0	47	58
	SAHİLEVLERİ	5	15	1	12	33
	YENİKALE	0	33	1	7	41
Total		13	102	5	124	244

The number of rooms in the house where the participants live is given in Table 3.30. Accordingly, only 3 of the total participants live in 1+1 house, 2 in 4+1 house and 3 in 5+1 house. 47 of the participants live in 2+1 houses, 156 in 3+1 houses, 17 in 4+0 houses and 16 in 4+2 houses. In summary, 41.2% of the participants live in 121-160 m2 and 63.9% in 3+1 houses.

Table 3.30 Number of Room

		Number of Room							Total
		1+1	2+1	3+1	4+0	4+1	4+2	5+1	
Neighbourhood	2.İNÖNÜ	0	19	79	8	0	6	0	112
	ÇAMTEPE	0	16	42	0	0	0	0	58
	SAHİLEVLERİ	3	11	3	5	2	6	3	33
	YENİKALE	0	1	32	4	0	4	0	41
Total		3	47	156	17	2	16	3	244

During the pandemic period, some criteria have emerged that people did not pay attention to before in their search for the ideal home. At this point, the size of the house and the number of rooms have become an issue that needs to be addressed together. One of the most important of these is a balcony or terrace that can be considered as an outside/street to breathe. From the same point of view, the importance of the number of bathrooms has increased in terms of ensuring personal hygiene.

Numbers of balconies and terraces are given in Table 3.31. 6 participants do not have any balconies or terraces. 10 participants have 3 balconies, 120 persons have 2 balconies, 108 persons have 1 balcony.

Table 3.31 Number of Balcony and Terrace

		Number of Balcony and Terrace				Total
		0	1	2	3	
Neighbourhood	2.İNÖNÜ	0	20	92	0	112
	ÇAMTEPE	1	46	11	0	58
	SAHİLEVLERİ	5	7	11	10	33
	YENİKALE	0	35	6	0	41
Total		6	108	120	10	244

The number of bathrooms in the houses of the participants is given in Table 3.30. There is 1 bathroom in the house of 191 participants, 2 bathrooms in the house of 52 participants, and 4 bathrooms in the house of 1 participant. None of the participants had 3 bathrooms in their home. In summary, 49.9% of the participants have 2 balconies or terraces, 78.8% have 1 bathroom or toilet.

Table 3.32 Number of bathroom

		Number of Bathroom			Total
		1	2	4	
Neighbourhood	2.İNÖNÜ	94	18	0	112
	ÇAMTEPE	56	2	0	58
	SAHİLEVLERİ	10	22	1	33
	YENİKALE	31	10	0	41
Total		191	52	1	244

In summary, the characteristics of the participants who participated in the household survey that formed the data of the study are as follows:

- Most of them are male (n=157),
- Most of them have 2 children (n=106),
- 4.8% of them at least 1 year of residence before the pandemic (n=12),
- 95.2% of them at least 1 year of residence before the pandemic (n=232),
- Most of them are graduated from university (n=119),
- Most participants earn “minimum wage x 2” (n=123),

- Most of the participants live in their own house (n=202),
- Most of the participants live in the house with 4 people (n=103),
- 31.5% of them lives with partner and children (n=77),
- 45.9% of them in middle income group (n=112),
- Most of the participants live in 1-3 storey houses (n=112),
- Most of the participants have not got elevator (n=133),
- 45.9% of them live in 121-160 m2 houses (n=102),
- Most of the participants live in 3+1 house (n=156),
- Most of the participants have got 2 balcony or terrace (n=120),
- Most of the participants have got 1 bathroom or toilet (n=191).

CHAPTER 4

RESULTS

In this section, inferential statistical analysis was examined to determine the relationships between different measures of participants' level of satisfaction and competence perceptions on housing and neighbourhood. In this chapter, first, the dependent and independent variables of the study were explained. Following, the effects of pre-pandemic variables on people's satisfaction levels, the effects of pre- and post-pandemic variables on the level of sufficiency of individuals in their housing, pre- and post-pandemic variables were evaluated at the housing scale. In the last section, pre- and post-pandemic variables were evaluated on a neighbourhood scale.

4.1 Dependent and Independent Variables

Within the scope of this thesis, the relationship between the satisfaction levels of the participants before and after the pandemic was focused. The dependent variable of the study was determined as the change in the level of satisfaction and competence of the participants regarding their homes and neighbourhoods before and after the pandemic. The socio-demographic characteristics of the participants and the physical environment characteristics of the residences where the participants lived were determined as independent variables to determine the reasons for the changes in the satisfaction and adequacy level of the residence and the neighbourhood (Table 4.1). In short, in this chapter the effect of socio-demographic characteristics of the user, the characteristics of the house and the subjective measurements of the neighbourhood on the satisfaction and competence level changes of the residence and the neighbourhood were questioned.

Table 4.1 Dependent and independent Variables

Dependent Variables	
Change in Housing Satisfaction Before and During the Pandemic	
Change in Neighborhood Satisfaction Before and During the Pandemic	
Change in Housing Competency Before and During the Pandemic	
Change in Neighborhood Competency Before and During the Pandemic	
Independent Variables	
Socio-Demographic Characteristics	Age
	Gender
	SES
Residant Characteristics	Number of floors
	Presence of Elevator
	Size
	Number of Balcony/ Terrace
Physical Environmental Measurements	Total Construction Area/ Building Block
	Building Base Area/ Total Yard
	SetBack Distance (meters)
	Distance to Nearest House (meters)

Within the scope of the study, four dependent variable groups were determined: (1) change in housing satisfaction before and after the pandemic, (2) change in neighbourhood satisfaction before and during pandemic, (3) change in housing competency before and during pandemic, and (4) change in neighbourhood competency before and during pandemic. While housing satisfaction was analysed via “the number of bathroom/toilet, services such as electricity, water, gas and internet, the number of balconies/terraces, the insulation of the house, storage areas, number of rooms, size of the house” parameters, neighbourhood satisfaction was analysed via “sunny/bright, strong/resistant, pollution, safety, garden/green areas, density of people, access to shopping malls, proximity of buildings” parameters. Similarly, while housing competency was analysed via “the number of bathroom/toilets, services such as electricity, water, gas and internet, the number of balconies/terraces, the insulation of the house, storage areas, number of rooms, size of the house” parameters, neighbourhood competency was analysed via “sunny/bright, strong/resistant, pollution, safety, garden/green areas, density of people, access to shopping malls, proximity of buildings” parameters.

Within the objectives of the thesis to question the competency and competency levels of the housing and neighbourhood based on the pandemic, the socio-

demographic characteristics of the user (1) age, (2) gender and (3) socio-economic status were questioned. In addition, the variables of the number of floors, the presence of elevators, the size of the residence and the presence/number of balconies/terraces are discussed in order to determine how the properties of the residence have an effect on the satisfaction and competence change. The number of rooms in the houses of the participants was not examined, 95% of the participants (n=201) live in 3+1 houses. At the same time, 85% of the participants (n=182) had 2 bathrooms/toilets at home, so the number of bathrooms/toilets was not included in the study. Finally, to determine to what extent the change in satisfaction and competency level is affected by the physical environment, (1) total construction area / building block (KAKS), (2) building base area / total yard, (3) setback distance, and (4) distance to nearest house parameters were examined.

4.2 Expert Survey Results

In this section, the views of health-based and design-based experts before and after the pandemic were evaluated. Experts from health backgrounds include occupational groups such as doctors (n=16), nurses (n=3), dentists (n=2), and dietitians (n=2). Experts with a design background include professional groups such as architects (n=13), interior architects (n=3), planners (n=2), and urban designers (n=4).

The questions asked to the participants in this section are open-ended type questions. For this reason, the answers given by the participants were grouped. Housing criteria are gathered under 6 headings: (1) robustness, insulation, earthquake resistance, infrastructure, (2) security and privacy, (3) size, number of rooms, number of bathrooms, number of balconies, storage facilities, (4) presence of elevator, (5) Use of garden and green space, (6) bright and useful.

The answers given by the participants such as durability, isolation, earthquake resistance, infrastructure services are gathered under the title of "robustness, insulation, earthquake resistance, infrastructure". Topics such as security, privacy, environmental security, traffic safety, street lighting are combined under the "security and privacy" heading. The answers given such as the size of the house, the number of rooms, having a balcony, a terrace, having sufficient bathroom, having a storage area,

a working area, a spacious house are examined under the heading "size, number of rooms, number of bathrooms, number of balconies, storage facilities". The presence of an elevator in a house or apartment is examined in the "presence of elevator" title. Headings such as the use of a garden, the use of green space, the use of parks, the presence of recreation areas, and the presence of sports areas are gathered under the title of "Use of garden and green space". The fact that the house is useful, bright, well ventilated, comfortable, ergonomic, and sufficient is gathered under the title of "bright and useful".

The questions about neighbourhoods asked to the participants are open-ended type questions. For this reason, the answers given by the participants were grouped within themselves. In this section, the questions asked to the participants are open-ended. For this reason, the answers given by the participants were grouped within themselves. Neighbourhood criteria are gathered under 6 headings: (1) Wide streets, wide sidewalks, distances between buildings, (2) access to services, (3) proximity to green spaces and parks, (4) beautiful, well-kept, and clean, (5) social and neighbourly relations, (6) security.

Wide streets, wide sidewalks, gaps between buildings, not congested streets, and no parking problems were examined under the headings of "Wide streets, wide sidewalks, distances between buildings". Proximity to education units, proximity to parks, proximity to work, proximity to shopping centres, proximity to the centre, proximity to the parking lot, proximity to the hospital, proximity to public transportation were examined under the heading "Access to services". Headings such as the use of a garden, the use of green space, the use of parks, the presence of recreation areas, and the presence of sports areas are gathered under the title of "Proximity to green spaces and parks". Clean streets, well-kept and hygienic environment, clean parks, regular collection of garbage are examined under the title of "Beautiful, well-kept and clean". Neighbourhood relations, social relations, having decent people, knowing families for a long time are examined under the title of "Social and neighbourly relations". The absence of stray animals, the safety of the environment, the safety of neighbours, the well-lighted streets, and the privacy were examined under the title of "Security".

Expert opinions are explained in the following sections by separating them according to residence and neighbourhood in the pre-pandemic and post-pandemic periods.

4.2.1 Expert Views on Residence Before Pandemic Period

According to the pre-pandemic answers given by the participants, 28 design-based participants wanted their home to be "bright and useful", while 14 of the health-based participants wanted their home to be "bright and useful". When the pre-pandemic views of the participants under the heading "Robustness, insulation, earthquake resistance, infrastructure" are examined, 12 participants from design background preferred their houses to be robustness, while 12 participants from health origin preferred their houses robustness.

While 13 people from the design background and 16 of the health background participants wanted the number of rooms. Before the pandemic, only a health-related participant wanted an elevator. 4 participants from design background and 6 participants from health background wanted the house to be "safe". 6 participants from design background and 2 participants from health background wanted the use of garden (Table 4.2).

When the total numbers are examined, the participants mostly cared about the "bright and useful" and "durable" of the house. The title of "Presence of elevator" is unimportant for both professions.

Table 4.2 BP house, design origin and health-based origin

Before Pandemic-Houses	Design Origin Profession Group (Architect, Interior Architect, Planner, etc.)	Health-Based Profession Group (Doctor, Nurse, Dentist, etc.)	Total
Bright and useful	28	14	42
Robustness, insulation, earthquake resistance, infrastructure	12	21	33
Size, number of rooms, number of bathrooms, number of balconies, storage facilities	13	16	29
Presence of elevator	0	1	1
Security and privacy	4	6	10
Use of garden and green space	8	4	12

4.2.2 Expert Views on Residence During Pandemic Period

When the post-pandemic views of the participants were examined, 6 participants from design background wanted the house to be bright, 9 participants from health background wanted the house to be bright. 4 people from design background and 13 people from health background wanted the house to be durable. 27 people from design background and 12 people from health background wanted the house to have large rooms. Only 3 people of design origin wanted an elevator. 5 people from design background and 4 people from health background wanted the house to be safe. 9 people from design background and 10 people from health background wanted the house to be used as a garden (Table 4.3).

Table 4.3 AP house, design origin and health-based origin

After Pandemic-Houses	Design Origin Profession Group (Architect, Interior Architect, Planner, etc.)	Health-Based Profession Group (Doctor, Nurse, Dentist, etc.)	Total
Bright and useful	11	12	23
Robustness, insulation, earthquake resistance, infrastructure	4	13	17
Size, number of rooms, number of bathrooms, number of balconies, storage facilities	27	12	39
Presence of elevator	0	3	3
Security and privacy	5	4	9
Use of garden and green space	9	10	19

When the total numbers are examined, the participants mostly preferred the title "Size, number of rooms, number of bathrooms, number of balconies, storage facilities". Their least preferred title is "Presence of elevator".

When the evaluations before and after the pandemic were compared, it was not preferred that the house be bright and solid. Its safety and use of elevators have remained virtually unchanged. After the pandemic, the participants wanted their houses to be big, to have enough rooms, to have bathrooms and balconies, to have garden use.

4.2.3 Expert Views on Neighbourhood Before Pandemic Period

When the pre-pandemic views of the participants were examined, 9 participants from design background and health origin wanted access to services. While 6 people from design background wanted the environment to be well-maintained, 11 people from health background wanted the environment to be well-maintained. 16 participants from design background wanted to be close to green areas, 11 people from health background wanted to be close to green areas. While 4 participants from design background wanted it to be safe, 5 participants from health background wanted it to be safe. 7 participants from design background wanted neighbourhood relations, 2

people from health background wanted neighbourhood relations. While 10 participants from design background preferred wide streets, 8 people from health background preferred wide streets (Table 4.4).

When the total numbers were examined, it was understood that the participants mostly wanted to be close to parks and green areas. Security and social relations are the least preferred topics.

Table 4.4 BP neighbourhood, design origin and health-based origin

Before Pandemic-Neighbourhood	Design Origin Profession Group (Architect, Interior Architect, Planner, etc.)	Health-Based Profession Group (Doctor, Nurse, Dentist, etc.)	Total
Access to services	9	9	18
Beautiful, well-kept and clean	6	11	17
Proximity to green spaces and parks	16	11	27
Security	4	5	9
Social and neighbourly relations	7	2	9
Wide streets, wide sidewalks, distances between buildings	10	8	18

4.2.4 Expert Views on Neighbourhood After Pandemic Period

When the post-pandemic views of the participants were examined, 6 participants from design background and 8 participants from health origin wanted access to services. While 5 people from design background wanted the environment to be well-maintained, 13 people from health background wanted the environment to be well-maintained. 16 participants from design background wanted to be close to green areas, 15 people from health background wanted to be close to green areas. While 4 participants from design background wanted it to be safe, 5 participants from health background wanted it to be safe. 4 participants from design background wanted neighbourhood relations, 6 people from health background wanted neighbourhood relations. While 8 participants from design background preferred wide streets, 7 people from health background preferred wide streets (Table 4.4).

Table 4.5 AP neighbourhood, design origin and health-based origin

AP-Neighbourhood	Design Origin Profession Group (Architect, Interior Architect, Planner, etc.)	Health- Based Profession Group (Doctor, Nurse, Dentist, etc.)	Total
Access to services	6	8	14
Beautiful, well-kept and clean	5	13	18
Proximity to green spaces and parks	16	15	31
Security	4	5	9
Social and neighbourly relations	4	6	10
Wide streets, wide sidewalks, distances between buildings	8	7	15

When the total numbers were examined, it was understood that the participants mostly wanted to be close to parks and green areas. Security and social relations are the least preferred topics.

When the evaluations before and after the pandemic were compared, participants did not prefer to have access to services and wide streets after the pandemic. The participants' views on neighbourhood safety before and after the pandemic did not change. The titles "Beautiful, well-kept and clean", "Proximity to green spaces and parks" and "Social and neighbourly relations" became important after the pandemic.

To summarize the results of the expert survey, it has been determined that the characteristics that design-based and health-based experts consider important for housing both before and after the pandemic differ (Table 4.6). In addition, in both occupational groups, there were changes in the level of importance of characteristics related to housing before and after the pandemic. For example, while the bright and usefulness of the dwelling was given more importance by design-based experts before the pandemic, it is seen that the opposite changes during the pandemic process. While the robustness, insulation, earthquake resistance, and infrastructure features of the house were given more importance by design-based experts before the pandemic, they were given less importance during the pandemic period. While the size of the house, the number of rooms, bathrooms, balconies/terraces, and storage facilities were given

less importance by design-based experts before the pandemic, it seems to have changed in reverse during the pandemic process. Presence of elevator was ignored by design-based experts before and during the pandemic. While the security and privacy facilities of the residence were given less importance by design-based experts before the pandemic, it seems to have changed to the contrary during the pandemic process. While the use of garden and green space was given more importance by design-based experts before the pandemic, it seems to have changed to the contrary during the pandemic process. There have been changes in the views of health-based experts regarding housing before and after the pandemic. For example, while bright and useful housing, robustness, insulation, earthquake resistance, infrastructure features were considered less important by health-based experts before the pandemic, it is seen that they change in the opposite way during the pandemic. Presence of elevator has been given great importance by health-based experts before and during the pandemic. While security and privacy, the size of the house, the number of rooms, bathrooms, balconies/terraces, and storage facilities were prioritized by health-based experts, it seems to have changed in reverse during the pandemic. While the use of garden and green space was considered less important by health-based experts before the pandemic, it seems to have changed to the contrary during the pandemic process. While the possibilities of Access to services, beautiful, well-kept and clean, proximity to green spaces and parks, social and neighbourly relations, wide streets, wide sidewalks, distances between buildings were given more importance by design experts before the pandemic, it seems to have changed in reverse during the pandemic process.

The security feature has not changed before and during the pandemic. While the facilities of Access to services, beautiful, well-kept and clean, social and neighbourly relations, proximity to green spaces and parks, wide streets, wide sidewalks, distances between buildings were given less importance by health-based experts before the pandemic, it seems to have changed to the contrary during the pandemic process. The security feature has not changed before and during the pandemic.

Table 4.6 Design origin and health-based origin

		Design Origin Profession Group (Architect, Interior Architect, Planner, etc.)		Health-Based Profession Group (Doctor, Nurse, Dentist, etc.)	
		Before Pandemic	During Pandemic	Before Pandemic	During Pandemic
House Characteristics	Bright and useful	66.7 %	21.7 %	33.3 %	39.1 %
	Robustness, insulation, earthquake resistance, infrastructure	36.3 %	23.5 %	66.3 %	76.5 %
	Size, number of rooms, number of bathrooms, number of balconies, storage facilities	44.8 %	69.2 %	55.2 %	30.8 %
	Presence of elevator	-	-	100 %	100 %
	Security and privacy	40.0 %	55.6 %	60 %	44.4 %
	Use of garden and green space	66.4 %	47,4 %	47.4%	52.6 %
Neighbourhood Characteristics	Access to services	50.0 %	42.6 %	50.0 %	57.4 %
	Beautiful, well-kept and clean	54.6 %	27.8 %	45.4 %	72.2 %
	Proximity to green spaces and parks	59.3 %	51.6 %	40.7 %	48.4 %
	Security	44.4 %	44.4 %	55.6 %	55.6 %
	Social and neighbourly relations	77.8 %	40.0 %	22.2 %	60.0 %
	Wide streets, wide sidewalks, distances between buildings	55.6 %	53.3 %	44.4 %	46.7 %

4.3 Household Survey Results

4.3.1 Satisfaction Levels of Participants

In this section, household survey results were examined within the scope of participants' satisfaction levels before and after the pandemic.

4.3.1.1 Satisfaction Levels of Participants According to Pre-pandemic

According to Table 4.2, in the pre-pandemic period, the most satisfied feature of the participants was satisfaction with the neighbourhood (Mean=4.30; SD=1.07), then the number of balconies/terraces was sufficient (Mean=4.14; SD=0.84), right after that. It was observed that participants were satisfied with the services such as electricity, water, gas and internet of their houses (Mean=4.13; SD=0.98). In the same data, it was determined that the least satisfactory features in the pre-pandemic period were the size (Mean=3.99; SD=0.95) and the insulation of the building (Mean=4.04; SD=0.95).

Table 4.7 Pre-pandemic Satisfaction Levels

	Satisfaction	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total	Mean	Std. Deviation
Pre-Pandemic	I am happy with the neighborhood I live in	11	12	8	69	137	237	4.3	1.07
	The number of balconies/terraces is sufficient.	1	9	32	98	95	235	4.14	0.84
	I am satisfied with services such as electricity, water, gas and internet.	4	13	45	82	97	241	4.13	0.98
	Storage areas are sufficient.	1	10	45	81	98	235	4.09	0.9
	The number of bathrooms/toilets is sufficient.	5	6	38	103	85	237	4.08	0.9
	I am satisfied with the number of rooms.	10	5	49	72	101	237	4.05	1.05
	The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	5	10	40	92	89	236	4.04	0.95
	I am satisfied with the size of the house.	4	15	37	100	80	236	3.99	0.95
	I am satisfied with the garden of my residence.	41	31	52	25	92	241	3.46	1.56

4.3.1.2 Satisfaction Levels of Participants According to Post-pandemic

According to Table 4.3, in the post-pandemic period, the most satisfied feature of the participants was satisfaction with the neighbourhood (Mean=4.32; SD=1.25), followed by enough balconies/terraces (Mean=4.09; SD=1.01). In the same data, the least satisfactory features in the pre-pandemic period were the size of the buildings (Mean=3.84; SD=0.93) and the insulation of the building (Mean=3.97; SD=1.13).

Table 4.8 Post-pandemic Satisfaction Levels

	Satisfaction	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total	Mean	Std. Deviation
Post-Pandemic	I am happy with the neighborhood I live in	15	8	9	74	134	240	4.32	1.25
	The number of bathrooms/toilets is sufficient.	3	6	52	82	94	237	4.09	1.01
	I am satisfied with services such as electricity, water, gas and internet.	4	8	59	85	85	241	4.06	1.27
	The number of balconies/terraces is sufficient.	3	7	62	87	82	241	4.05	1.49
	The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	4	11	57	70	96	238	4.04	1.13
	Storage areas are sufficient.	4	11	46	80	93	234	4	1.53
	I am satisfied with the number of rooms.	9	9	61	65	94	238	3.97	1.13
	I am satisfied with the size of the house.	13	11	53	85	75	237	3.84	0.93
	I am satisfied with the garden of my residence.	41	31	52	25	92	3	3.43	1.53

In summary, it has been determined that the satisfaction of the participants with their neighbourhoods and their satisfaction with the number of bathrooms / terraces decreased after the pandemic. However, it was observed that the satisfaction of the participants with the number of bathrooms and toilets and their satisfaction with the insulation of the house did not change.

According to the results of the household survey (Table 4.9), it is seen that there are some changes in some variables related to the satisfaction of the participants with their homes before and during the pandemic. When the variables that had a high level of satisfaction before the pandemic, but decreased in satisfaction with the pandemic, were examined, the number of balconies / terraces, the qualifications related to infrastructure services are variables. The fact that people are in residential areas rather than urban spaces during the pandemic period changes the needs expected from housing. This situation is seen both in variables such as the number of balconies/terraces and bathrooms/toilets, as well as in changes in the need for storage areas. Therefore, it can be argued that with the pandemic, the size of the house, the existence of wet floors, the balcony/terrace facilities have become important criteria in terms of the relationship it can establish with the exterior, and this situation should be perceived as a remarkable situation from an architectural point of view. The biggest reduction is related to isolation and infrastructure, and then to the size of the residence. Isolation and size coincide with basic human needs. Infrastructure, on the other hand, covers basic needs such as internet, electricity, but the need for the internet has increased with digitalization. This situation is also remarkable in the context of the functions that the house should contain.

Table 4.9 Satisfaction Parameters

Satisfaction Parameters	Before Pandemic	During Pandemic	Difference
	Mean (SD)	Mean (SD)	
"I am happy with the neighborhood I live in"	4.3 (1.07)	4.32 (1.25)	- 0.02
"The number of balconies/terraces is sufficient."	4.14 (0.84)	4.09 (1.01)	- 0.05
"I am satisfied with services such as electricity, water, gas and internet."	4.13 (0.98)	4.06 (1.27)	- 0.07
"Storage areas are sufficient."	4.09 (0.9)	4.05 (1.49)	- 0.04
"The number of bathrooms/toilets is sufficient."	4.08 (0.9)	4.04 (1.13)	- 0.04
"I am satisfied with the number of rooms."	4.05 (1.05)	4.00 (1.53)	- 0.05
"The insulation of the house (heat, insulation, humidity, etc.) is sufficient."	4.04 (0.95)	3.97 (1.13)	- 0.07
"I am satisfied with the size of the house."	3.99 (0.95)	3.84 (0.93)	- 0.06
"I am satisfied with the garden of my residence."	3.46 (1.56)	3.43	0.03

4.3.2 Competency Levels Related to Participants' Houses

In this section, household survey results were examined within the scope of participants' competency levels for their houses and neighbourhood before and after the pandemic.

4.3.2.1 Competency Levels Related to Participants' Houses According to Pre-pandemic

According to Table 4.4, the most satisfying feature of the participants in the pre-pandemic period was that the house was convenient and comfortable (Mean=4.13; SD=0.86), then the house had sufficient light and light (Mean=4.10; SD=0.95), immediately then it was found to be safe (Mean=4.08; SD=0.87). In the same data, it was determined that the least satisfactory features in the pre-pandemic period were the

buildings being very close to each other (Mean=2.21; SD=1.21) and the high density of people (Mean=2.38; SD=1.24).

Table 4.10 Competency Levels According Pre-pandemic

	Competency Levels	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total	Mean	Std. Deviation
Pre-Pandemic	My house is sunny and bright.	4	11	41	88	94	238	4.10	0.95
	My neighborhood is safe from crime.	3	7	48	104	78	240	4.08	0.87
	My house is strong/resistant against earthquakes.	4	3	38	89	97	231	4.07	0.87
	The traffic around my residence is suitable for pedestrians.	3	8	52	95	81	239	4.05	0.90
	There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	9	14	62	85	64	234	3.73	1.04
	The green areas and parks near my residence are in good condition/maintained.	22	44	57	55	59	237	3.36	1.29
	I use the elevator in the building where my residence is located (if it is an apartment)	77	5	29	70	55	236	3,08	1,60
	I often go to the shopping malls/shops around the residence.	51	43	36	62	45	237	3.03	1.44
	The density of people in the area where the residence is located is very high.	65	85	38	30	19	237	2.38	1.24
	The buildings around my residence are very close to each other/congested.	26	43	52	40	79	240	3.47	1.39

4.3.2.2 Competency Levels Related to Participants' Houses According to Post-pandemic

According to Table 4.5, in the post-pandemic period, the most satisfied feature of the participants was that the house was safe (Mean=4.13; SD=1.10), followed by the earthquake-resistance of the house (Mean=4.04; SD=0.93). In the same data, it was determined that the least satisfactory features in the post-pandemic period were the

buildings being very close to each other (Mean=2.12; SD=1.54) and the high density of people (Mean=2.27; SD=1.30).

Table 4.11 Competency Levels According Post-pandemic

	Competency Levels	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total	Mean	Std. Deviation
Post-pandemic	My house is sunny and bright.	2	8	48	80	95	233	4.04	0.93
	My neighborhood is safe from crime.	3	6	52	94	81	236	4.02	1.00
	My house is strong/resistant against earthquakes.	6	6	51	85	88	236	4.01	1.17
	The traffic around my residence is suitable for pedestrians.	4	6	57	90	74	231	3.87	0.87
	There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	5	25	58	79	64	231	3.65	0.95
	The green areas and parks near my residence are in good condition/maintained.	28	36	70	51	48	233	3.18	1.15
	I use the elevator in the building where my residence is located (if it is an apartment)	77	5	26	67	64	239	3.18	1.35
	I often go to the shopping malls/shops around the residence.	48	58	52	43	40	241	2.92	0.89
	The density of people in the area where the residence is located is very high.	81	79	41	20	19	240	2.27	1.30
	The buildings around my residence are very close to each other/congested.	104	59	41	23	13	240	2.12	1.54

In Table 4.12, the biggest reduction is related to traffic safety and access to green areas and parks. Access to parks and green spaces where social distancing is maintained has gained importance due to the limited amount of people going out during the closure and isolation period. Traffic safety has also become an important topic as it is possible to go to areas within walking distance during the pandemic period.

Table 4.12 Competency Parameters

Competency Parameters	Before Pandemic	During Pandemic	Difference
	Mean (SD)	Mean (SD)	
My house is sunny and bright.	4.10 (0.95)	4.04 (0.93)	- 0.06
My neighborhood is safe from crime.	4.08 (0.87)	4.02 (1.00)	- 0.06
My house is strong/resistant against earthquakes.	4.07 (0.87)	4.01 (1.17)	- 0.06
The traffic around my residence is suitable for pedestrians.	4.05 (0.90)	3.87 (0.87)	- 0.18
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	3.73 (1.04)	3.65 (0.95)	- 0.08
The green areas and parks near my residence are in good condition/maintained.	3.36 (1.29)	3.18 (1.15)	- 0.18
I use the elevator in the building where my residence is located (if it is an apartment)	3.08 (1.60)	3.18 (1.35)	+ 0.1
I often go to the shopping malls/shops around the residence.	3.03 (1.44)	2.92 (0.89)	- 0.11
The density of people in the area where the residence is located is very high.	2.38 (1.24)	2.27 (1.30)	-0.11
The buildings around my residence are very close to each other/congested.	3.47 (1.39)	2.12 (1.54)	-1.35

4.3.3 Change of Views on Satisfaction and Competency Compared to Before and After Pandemic

Satisfaction and competence before and after the pandemic were evaluated as follows; If the satisfaction before the pandemic is less than the satisfaction after the pandemic, it is expressed with as $BP < AP$. If the satisfaction before the pandemic is more than the satisfaction after the pandemic, it is expressed as $BP > AP$. If the satisfaction before the pandemic and the satisfaction after the pandemic did not change, it was expressed as $BP = AP$. If $BP > AP$ grouping was made for a variable related to satisfaction, this means that satisfaction with that variable decreased after the pandemic. Therefore, the results are interpreted from this perspective.

In Table 4.13, when examined in terms of satisfaction with the neighbourhood, it is seen that the satisfaction level of most of the participants (61.5%) did not change

before and after the pandemic, and only 16.4% increased their satisfaction after the pandemic. When examined in terms of the number of bathrooms/toilets, it is seen that the satisfaction level of most of the participants (44.3%) did not change before and after the pandemic, but only 28.3% of them increased after the pandemic. When the infrastructure is examined, it is seen that the satisfaction level of most of the participants (39.8%) did not change before and after the pandemic, and the satisfaction of only 27% increased after the pandemic. When examined in terms of the number of balconies, it is seen that the satisfaction level of most of the participants (47.1%) did not change before and after the pandemic, while the satisfaction of only 19.3% increased after the pandemic. When the Insulation is examined, it is seen that the satisfaction level of most of the participants (44.7%) did not change before and after the pandemic, and only 25.8% of them increased their satisfaction after the pandemic. When examined in terms of storage space, it is seen that the satisfaction level of most of the participants (47.1%) did not change before and after the pandemic, and only 23.3% of them increased their satisfaction after the pandemic. When examined in terms of the number of rooms, it is seen that the satisfaction level of most of the participants (38.5%) did not change before and after the pandemic, and only 32.4% increased their satisfaction after the pandemic. When examined in terms of the size of the house, it is seen that the satisfaction level of most of the participants (45.1%) did not change before and after the pandemic, while the satisfaction of only 20.9% increased after the pandemic. When the house is examined in terms of the garden, it is seen that the satisfaction level of the participants (33.6%) before and after the pandemic did not change, and only 31.6% of them increased their satisfaction after the pandemic.

Table 4.13 Satisfaction Levels According to Post-pandemic and Pre-pandemic

	Variables	BP: Before Pandemic / AP: After Pandemic		
		BP<AP	BP=AP	BP>AP
Satisfaction	Neighborhood	n=40	n=150	n=54
		16.4%	61.5%	22.1%
	Bathroom/toilet	n=69	n=108	n=67
		28.3%	44.3%	27.5%
	Infrastructure	n=66	n=97	n=81
		27.00%	39.80%	33.20%
	Balcony	n=82	n=115	n=47
		19.3%	47.1%	33.6%
	Insulation	n=63	n=109	n=72
		25.8%	44.70%	29.50%
	Storage	n=57	n=115	n=72
		23.3%	47.10%	29.50%
	Room number	n=79	n=94	n=71
		32.4%	38.5%	29.1%
	Size	n=83	n=110	n=51
		20.9%	45.10%	34.00%
	Garden	77	82	85
		31.60%	33.60%	34.80%

In Table 4.14, when the house is examined in terms of being useful, it is seen that the satisfaction level of most of the participants (43.4%) did not change before and after the pandemic, but only 22.5% of them increased after the pandemic. When examined in terms of sun and bright, it is seen that the satisfaction level of most of the participants (47.1%) did not change before and after the pandemic, and the satisfaction of 31.1% increased after the pandemic. When crime safety is examined, it is seen that the satisfaction level of the majority of the participants (45.5%) did not change before and after the pandemic, and the satisfaction of 29.5% increased after the pandemic. When analyzed in terms of Strong and resistant, it is seen that the satisfaction level of the majority of the participants (43.5%) did not change before and after the pandemic, while the satisfaction of only 25.8% increased after the pandemic. When the poll is examined, it is seen that the satisfaction level of the majority of the participants (52.9%) did not change before and after the pandemic, and only 28.7% of them increased their satisfaction after the pandemic. When examined in terms of green areas and parks, it is seen that the satisfaction level of the majority of the participants (47.5%) did not change before and after the pandemic, and only 28.7% of them increased their satisfaction after the pandemic. When examined in terms of the

presence of elevators, it is seen that the satisfaction level of the majority (4.9%) of the participants did not change before and after the pandemic, and only 6.6% of them increased their satisfaction after the pandemic. When examined in terms of proximity to shopping centres, it is seen that the satisfaction level of most of the participants (48.4%) did not change before and after the pandemic, but only 21.7% of them increased after the pandemic. When examined in terms of density of people, it is seen that the satisfaction level of the participants (52.9%) did not change before and after the pandemic, and only 28.7% of them increased their satisfaction after the pandemic. When examined in terms of distance of buildings, it is seen that the satisfaction level of the participants (56.1%) before and after the pandemic did not change, and only 18% of them increased their satisfaction after the pandemic.

Table 4.14 Competency Levels According to Post-pandemic and Pre-pandemic

	Variables	BP: Before Pandemic / AP: After Pandemic		
		BP<AP	BP=AP	BP>AP
Competency	Useful	55	106	83
		22.50%	43.4%	34.0%
	Sun-bright	76	115	53
		31.10%	47.10%	21.70%
	Crime safety	61	111	72
		29.50%	45.50%	25.00%
	Strong/resistant	63	105	76
		25.80%	43.50%	31.10%
	Pollution	45	129	70
		28.70%	52.90%	18.40%
	Parks conditions	61	116	67
		25.00%	47.50%	27.50%
	Elevator	16	12	216
		6.60%	4.90%	88.50%
	Shopping	53	118	73
		21.7%	48.40%	29.90%
	Population density of neighborhood	70	129	45
		28.70%	52.90%	28.70%
	Distance of buildings	44	137	63
		25.80%	56.10%	18.00%

4.4 Perceptual Changes and Socio-Demographic Data Compared to the Pre- and Post-pandemic Period

In this section, perceptual changes, and socio-demographic characteristics (SES, gender, age) compared to pre-pandemic and post-pandemic were examined under the headings of satisfaction and competency.

4.4.1 S.E.S.

SES groupings of the participants were made as lower, middle, and upper SES groups. Pearson Chi-Square analysis was applied to determine whether there is a significant relationship between competency and satisfaction, which is one of the socio-economic indicators.

When the views of the participants before and after the pandemic are examined, it's found that there is not statistically (Table 4.15).

According to the Pearson Chi-Square analysis, a statistically significant relationship was found in some variables between the SES level of the participants and the perceptual changes regarding the adequacy of the housing. Variables that are statistically significant are sunny/bright, crime safety and pollution.

Accordingly, when the competency at home is examined, it is seen that the satisfaction level of most of the participants (n=107) did not change before and after the pandemic. While most of the participants (n=107) were satisfied before the pandemic, only a very small part of them (n=25) seem to increase their satisfaction after the pandemic. When the level of competency of the participants to safety is examined, it is seen that while most of them (n=107) were satisfied before the pandemic, only a very small part of them (n=25) increased their satisfaction after the pandemic. Accordingly, when the pollution satisfaction from the neighbourhood is examined, it is seen that the satisfaction level of most of the participants (n=117) did not change before and after the pandemic. While the majority of the participants (n=97) were satisfied before the pandemic, only a few (n=56) were found to be less satisfied after the pandemic.

Table 4.15 The statical relation between satisfaction parameters and S.E.S.

Satisfaction Parameters	Statistics
I am happy with the neighborhood I live in	$\chi^2=1.574$ df=4 p=0.814 (1 cells have expected count less than 5. The minimum expected count is 4.10)
The number of balconies/terraces is sufficient.	$\chi^2=1.050$ df=4 p=0.902 (1 cells have expected count less than 5. The minimum expected count is 4.82)
I am satisfied with services such as electricity, water, gas and internet.	$\chi^2=6.776$ df=4 p=0.148 (0 cells have expected count less than 5. The minimum expected count is 6.76)
Storage areas are sufficient.	$\chi^2=4.171$ df=4 p=0.383 (0 cells have expected count less than 5. The minimum expected count is 7.27)
The number of bathrooms/toilets is sufficient.	$\chi^2=12.869$ df=4 p=0.012 (0 cells have expected count less than 5. The minimum expected count is 6.86)
I am satisfied with the number of rooms	$\chi^2=1.574$ df=4 p=0.814 (1 cells have expected count less than 5. The minimum expected count is 4.10)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	$\chi^2=5.840$ df=4 p=0.211 (0 cells have expected count less than 5. The minimum expected count is 6.45)
I am satisfied with the size of the house	$\chi^2=5.264$ df=4 p=0.261 (0 cells have expected count less than 5. The minimum expected count is 5.23)
I am satisfied with the garden of my residence.	$\chi^2=2.730$ df=4 p=0.604 (1 cells have expected count less than 5. The minimum expected count is 3.79)

Table 4.16 The statical relation between competency parameters and S.E.S

Competency Parameters	Statistics
The house I live in is useful/comfortable/ergonomic.	$\chi^2=3.445$ df=4 p=0.486 (0 cells have expected count less than 5. The minimum expected count is 5.64)
My house is sunny and bright.	$\chi^2=13.364$ df=4 p=0.010 (0 cells have expected count less than 5. The minimum expected count is 6.25)
My neighborhood is safe from crime.	$\chi^2=13.252$ df=4 p=0.025 (0 cells have expected count less than 5. The minimum expected count is 6.13)
My house is strong/resistant against earthquakes.	$\chi^2=3.445$ df=4 p=0.486 (0 cells have expected count less than 5. The minimum expected count is 5.64)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	$\chi^2=12.919$ df=4 p=0.012 (0 cells have expected count less than 5. The minimum expected count is 6.25)
I use the elevator in the building where my residence is located (if it is an apartment)	$\chi^2=1.613$ df=4 p=0.806 (1 cells have expected count less than 5. The minimum expected count is 4.30)
I often go to the shopping malls/shops around the residence.	$\chi^2=3.191$ df=4 p=0.526 (0 cells have expected count less than 5. The minimum expected count is 5.43)
The density of people in the area where the residence is located is very high.	$\chi^2=5.650$ df=4 p=0.227 (1 cells have expected count less than 5. The minimum expected count is 4.61)
The buildings around my residence are very close to each other/congested.	$\chi^2=2.721$ df=4 p=0.606 (0 cells have expected count less than 5. The minimum expected count is 6.45)

4.4.2 Age Data

The relationship between age and perceptual changes determined according to the pandemic-based temporal process was tested with one-way variance analysis

(ANOVA). According to the results of these analysis, a statistically significant relationship was found between "satisfaction with the number of bathrooms/toilets" (Table 4.17) and “the adequacy of the house in terms of sunshine and light” (Table 4.18).

While the average age of the participants who were satisfied with the number of bathrooms / toilets in their dwellings before the pandemic was 43.44 (SD=13.11), the average age of the participants whose satisfaction level increased during the pandemic was 41.06 (SD=12.97). While the average age of the participants who were satisfied with the lightness of their homes before the pandemic was 49.25 (SD=12.351), the average age of the participants whose satisfaction level decreased during the pandemic process was 37.10 (SD=12.357).

Table 4.17 The statical relation between satisfaction parameters and age

Satisfaction Parameters	Age Groups	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	40.74 (13.200)	$F=0.011$, $df=2$, $p=0.989$
	BP=AP	n=150	40.45 (12.549)	
	BP<AP	n=40	40.45 (14.798)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	38.24 (12.342)	$F=1.892$, $df=2$, $p=0.153$
	BP=AP	n=115	41.59 (13.113)	
	BP<AP	n=47	41.83 (13.724)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	40.54 (13.488)	$F=0.118$, $df=2$, $p=0.889$
	BP=AP	n=97	40.91 (13.540)	
	BP<AP	n=66	39.89 (11.798)	
Storage areas are sufficient.	BP>AP	n=71	1.17 (0.983)	$F=0.357$, $df=2$, $p=0.700$
	BP=AP	n=94	0.99 (0.815)	
	BP<AP	n=79	1.07 (0.750)	
The number of bathrooms/toilets is sufficient.	BP>AP	n=67	43.44 (13.113)	$F=3.929$, $df=2$, $p=0.021$
	BP=AP	n=108	37.84 (12.603)	
	BP<AP	n=69	41.06 (12.976)	
I am satisfied with the number of rooms	BP>AP	n=82	39.87 (12.460)	$F=0.196$, $df=2$, $p=0.822$
	BP=AP	n=97	41.09 (13.310)	
	BP<AP	n=65	40.46 (13.460)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	41.56 (13.025)	$F=0.607$, $df=2$, $p=0.546$
	BP=AP	n=109	40.64 (13.293)	
	BP<AP	n=63	39.10 (12.640)	
I am satisfied with the size of the house	BP>AP	n=83	40.75 (12.790)	$F=0.027$, $df=2$, $p=0.973$
	BP=AP	n=110	40.47 (13.017)	
	BP<AP	n=51	40.22 (13.675)	
I am satisfied with the garden of my residence.	BP>AP	n=58	39.79 (12.115)	$F=0.365$, $df=2$, $p=0.695$
	BP=AP	n=149	41.07 (13.083)	
	BP<AP	n=137	39.38 (14.355)	

Table 4.18 The statical relation between competency parameters and age

Competency Parameters	Age Groups	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	39.11 (12.017)	$F=0.784$ $df=2, p=0.458$
	BP=AP	n=106	40.99 (13.877)	
	BP<AP	n=55	41.71 (12.848)	
My house is sunny and bright.	BP>AP	n=72	39.25 (12.351)	$F=4.964$, $df=2, p=0.008$
	BP=AP	n=111	43.21 (13.355)	
	BP<AP	n=61	37.10 (12.357)	
My neighborhood is safe from crime.	BP>AP	n=65	40.57 (13.260)	$F=0.163$, $df=2, p=0.849$
	BP=AP	n=118	40.93 (13.059)	
	BP<AP	n=61	39.75 (12.867)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	40.57 (12.260)	$F=0.163$, $df=2, p=0.849$
	BP=AP	n=105	40.93 (13.059)	
	BP<AP	n=63	39.75 (12.867)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	42.05 (13.428)	$F=0.962$, $df=2, p=0.384$
	BP=AP	n=117	40.52 (12.882)	
	BP<AP	n=61	38.84 (12.847)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	37.86 (10.826)	$F=2.076$, $df=2, p=0.128$
	BP=AP	n=149	41.84 (13.630)	
	BP<AP	n=53	38.89 (12.591)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	39.75 (12.071)	$F=0.795$, $df=2, p=0.453$
	BP=AP	n=118	40.09 (12.598)	
	BP<AP	n=53	42.49 (15.136)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	39.07 (12.516)	$F=0.642$, $df=2, p=0.527$
	BP=AP	n=129	41.26 (13.355)	
	BP<AP	n=45	40.60 (12.957)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	41.02 (11.939)	$F=0.449$, $df=2, p=0.639$
	BP=AP	n=137	39.85 (12.984)	
	BP<AP	n=44	41.84 (14.727)	

4.4.3 Gender Data

Pearson Chi-Square analysis was conducted to determine the relationship between gender and perceptual changes according to the pandemic-based temporal process. According to the satisfaction determinants and gender relations (Table 4.19), it's found that there is a statistically significant relationship between participants' gender and their satisfaction level with garden of the residence. Accordingly, when the satisfaction felt from the balcony of the house is examined, it is seen that the satisfaction level of most of the participants (n=112) did not change before and after the pandemic. While most of the participants (n=107) were satisfied before the pandemic, only a very small part of them (n=25) seem to increase their satisfaction after the pandemic. However, it's found no statistically significant relation between gender and competency determinants (Table 4.20).

Table 4.19 The statical relation between satisfaction parameters and gender

Satisfaction Parameters	Statistics
I am happy with the neighborhood I live in	$\chi^2=1.524$ df=2 p=0.467 (0 cells have expected count less than 5. The minimum expected count is 14.26)
The number of balconies/terraces is sufficient.	$\chi^2=3.137$ df=2 p=0.208 (0 cells have expected count less than 5. The minimum expected count is 16.76)
I am satisfied with services such as electricity, water, gas and internet.	$\chi^2=0.340$ df=2 p=0.844 (0 cells have expected count less than 5. The minimum expected count is 23.53)
Storage areas are sufficient.	$\chi^2=2.444$ df=2 p=0.295 (0 cells have expected count less than 5. The minimum expected count is 25.32)
The number of bathrooms/toilets is sufficient.	$\chi^2=0.887$ df=2 p=0.642 (0 cells have expected count less than 5. The minimum expected count is 23.89)
I am satisfied with the number of rooms	$\chi^2=1.574$ df=2 p=0.814 (1 cells have expected count less than 5. The minimum expected count is 4.10)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	$\chi^2=0.221$ df=2 p=0.896 (0 cells have expected count less than 5. The minimum expected count is 22.46)
I am satisfied with the size of the house	$\chi^2=2.444$ df=2 p=0.293 (0 cells have expected count less than 5. The minimum expected count is 24.45)
I am satisfied with the garden of my residence.	$\chi^2=7.306$ df=2 p=0.026 (0 cells have expected count less than 5. The minimum expected count is 8.91)

Table 4.20 The statical relation between competency parameters and gender

Competency Parameters	Statistics
The house I live in is useful/comfortable/ergonomic.	$\chi^2=2.211$ df=2 p=0.331 (0 cells have expected count less than 5. The minimum expected count is 19.61)
My house is sunny and bright.	$\chi^2=1.721$ df=2 p=0.423 (0 cells have expected count less than 5. The minimum expected count is 21.75)
My neighborhood is safe from crime.	$\chi^2=1.825$ df=2 p=0.456 (0 cells have expected count less than 5. The minimum expected count is 6.13)
My house is strong/resistant against earthquakes.	$\chi^2=2.445$ df=2 p=0.486 (0 cells have expected count less than 5. The minimum expected count is 22.36)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	$\chi^2=2.671$ df=2 p=0.263 (0 cells have expected count less than 5. The minimum expected count is 21.75)
I use the elevator in the building where my residence is located (if it is an apartment)	$\chi^2=0.636$ df=2 p=0.727 (0 cells have expected count less than 5. The minimum expected count is 14.98)
I often go to the shopping malls/shops around the residence.	$\chi^2=0.609$ df=2 p=0.737 (0 cells have expected count less than 5. The minimum expected count is 18.90)
The density of people in the area where the residence is located is very high.	$\chi^2=0.505$ df=2 p=0.777 (1 cells have expected count less than 5. The minimum expected count is 16.05)
The buildings around my residence are very close to each other/congested.	$\chi^2=2.248$ df=2 p=0.325 (0 cells have expected count less than 5. The minimum expected count is 15.69)

4.5 Perceptual Changes and Resident Characteristics Compared to the Pre- and Post-pandemic Period

Perceptual changes of the participants before and after the pandemic and the characteristics of the house were examined under the sub-headings of satisfaction and competency: (1) storey of the house, (2) presence of elevator, (3) total area of the house, (4) number of balcony/ terraces.

4.5.1 Number of Floors of the House

Analysis of variance (ANOVA) statistical analysis was conducted to determine the relationship between the perceptual changes on satisfaction parameters and the story of the house. According to the results of the analysis, there was no statistically significant difference between the satisfaction changes and the housing qualities (Table 4.21).

Table 4.21 The statical relation of satisfaction parameters and number of floors

Satisfaction Parameters	Storey of the House	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	0.27 (0.484)	$F=0.761$, $df=2$, $p=0.384$
	BP=AP	n=150	0.46 (0.564)	
	BP<AP	n=40	0.34 (0.675)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	0.51 (0.450)	$F=0.265$, $df=2$, $p=0.607$
	BP=AP	n=115	0.58 (0.374)	
	BP<AP	n=47	0.34 (0.414)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	0.57 (0.232)	$F=0.488$, $df=2$, $p=0.485$
	BP=AP	n=97	0.080 (0.344)	
	BP<AP	n=66	0.72 (0.401)	
Storage areas are sufficient.	BP>AP	n=71	0.17 (0.344)	$F=0.401$, $df=2$, $p=0.527$
	BP=AP	n=94	0.29 (0.344)	
	BP<AP	n=79	0.34 (0.344)	
The number of bathrooms/toilets is sufficient.	BP>AP	n=67	0.080 (0.344)	$F=1.202$, $df=2$, $p=0.274$
	BP=AP	n=108	0.19 (0.344)	
	BP<AP	n=69	0.46 (0.564)	
I am satisfied with the number of rooms	BP>AP	n=82	0.27 (0.344)	$F=0.133$, $df=2$, $p=0.716$
	BP=AP	n=97	0.46 (0.564)	
	BP<AP	n=65	0.34 (0.524)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	0.23 (0.644)	$F=0.146$, $df=2$, $p=0.703$
	BP=AP	n=109	0.29 (0.344)	
	BP<AP	n=63	0.34 (0.344)	
I am satisfied with the size of the house	BP>AP	n=83	0.27 (0.344)	$F=0.915$, $df=2$, $p=0.340$
	BP=AP	n=110	0.29 (0.344)	
	BP<AP	n=51	0.46 (0.564)	
I am satisfied with the garden of my residence.	BP>AP	n=58	0.27 (0.524)	$F=0.133$, $df=2$, $p=0.716$
	BP=AP	n=149	0.46 (0.564)	
	BP<AP	n=137	0.57 (0.232)	

Analysis of variance (ANOVA) statistical analysis was conducted to determine the relationship between the perceptual changes on competency parameters and the story

of the house. According to the results of the analysis, there was no statistically significant difference between the competency changes and the housing qualities (Table 4.22).

Table 4.22 The statical relation between competency parameters and number of floors

Competency Parameters	Storey of the House	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	0.32 (0.124)	$F=0.720$ $df=2$, $p=0.397$
	BP=AP	n=106	0.29 (0.689)	
	BP<AP	n=55	0.57 (0.232)	
My house is sunny and bright.	BP>AP	n=72	0.65 (0.350)	$F=0.146$ $df=2$, $p=0.703$
	BP=AP	n=111	0.080 (0.644)	
	BP<AP	n=61	0.46 (0.564)	
My neighborhood is safe from crime.	BP>AP	n=65	0.27 (0.344)	$F=0.915$ $df=2$, $p=0.340$
	BP=AP	n=118	0.29 (0.414)	
	BP<AP	n=61	0.34 (0.224)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	0.27 (0.344)	$F=0.133$ $df=2$, $p=0.716$
	BP=AP	n=105	0.29 (0.567)	
	BP<AP	n=63	0.46 (0.564)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	0.27 (0.784)	$F=0.146$ $df=2$, $p=0.703$
	BP=AP	n=117	0.29 (0.644)	
	BP<AP	n=61	0.34 (0.212)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	0.47 (0.344)	$F=0.146$ $df=2$, $p=0.703$
	BP=AP	n=149	0.44 (0.344)	
	BP<AP	n=53	0.34 (0.344)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	0.27 (0.634)	$F=0.915$ $df=2$, $p=0.340$
	BP=AP	n=118	0.29 (0.254)	
	BP<AP	n=53	0.34 (0.124)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	0.27 (0.644)	$F=0.133$ $df=2$, $p=0.716$
	BP=AP	n=129	0.46 (0.564)	
	BP<AP	n=45	0.57 (0.232)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	0.27 (0.362)	$F=0.185$ $df=2$, $p=0.746$
	BP=AP	n=137	0.57 (0.212)	
	BP<AP	n=44	0.34 (0.344)	

4.5.2 Presence of Elevator

Pearson Chi-square analysis was conducted to determine the relationship between the participants' perceptual changes on satisfaction before and after the pandemic, and the presence of elevators in the residential building. According to the results of the analysis, there was no statistically significant difference between the change in satisfaction and the presence of elevators in the housing structure (Table 4.23).

As with the presence of elevator and the satisfaction variables, Chi-Square analysis was performed to determine the relationship between the presence of elevator and competency variables. According to the results it's found that the size of the house was not effective on participants competency opinions regards on pandemic temporal process (Table 4.24).

Table 4.23 The statical relation of satisfaction parameters and presence of elevator

Satisfaction Parameters	Statistics
I am happy with the neighborhood I live in	$\chi^2=0.189$ df=2 p=0.910 (0 cells have expected count less than 5. The minimum expected count is 23.20)
The number of balconies/terraces is sufficient.	$\chi^2=5.949$ df=2 p=0.051 (0 cells have expected count less than 5. The minimum expected count is 21.38)
I am satisfied with services such as electricity, water, gas and internet.	$\chi^2=0.131$ df=2 p=0.937 (0 cells have expected count less than 5. The minimum expected count is 30.02)
Storage areas are sufficient.	$\chi^2=0.355$ df=2 p=0.837 (0 cells have expected count less than 5. The minimum expected count is 32.30)
The number of bathrooms/toilets is sufficient.	$\chi^2=2.675$ df=2 p=0.262 (0 cells have expected count less than 5. The minimum expected count is 30.48)
I am satisfied with the number of rooms	$\chi^2=2.380$ df=2 p=0.304 (0 cells have expected count less than 5. The minimum expected count is 29.57)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	$\chi^2=5.416$ df=2 p=0.067 (0 cells have expected count less than 5. The minimum expected count is 28.66)
I am satisfied with the size of the house	$\chi^2=0.189$ df=2 p=0.910 (0 cells have expected count less than 5. The minimum expected count is 23.20)
I am satisfied with the garden of my residence.	$\chi^2=4.687$ df=2 p=0.096 (0 cells have expected count less than 5. The minimum expected count is 27.75)

Table 4.24 The statical relation of competency parameters and presence of elevator

Competency Parameters	Statistics
The house I live in is useful/comfortable/ergonomic.	$\chi^2=2.386$ df=2 p=0.303 (0 cells have expected count less than 5. The minimum expected count is 25.02)
My house is sunny and bright.	$\chi^2=1.529$ df=2 p=0.466 (0 cells have expected count less than 5. The minimum expected count is 27.75)
My neighborhood is safe from crime.	$\chi^2=1.625$ df=2 p=0.486 (0 cells have expected count less than 5. The minimum expected count is 28.59)
My house is strong/resistant against earthquakes.	$\chi^2=1.098$ df=2 p=0.577 (0 cells have expected count less than 5. The minimum expected count is 28.66)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	$\chi^2=0.636$ df=2 p=0.727 (0 cells have expected count less than 5. The minimum expected count is 14.98)
I use the elevator in the building where my residence is located (if it is an apartment)	$\chi^2=0.636$ df=2 p=0.727 (0 cells have expected count less than 5. The minimum expected count is 14.98)
I often go to the shopping malls/shops around the residence.	$\chi^2=24.585$ df=2 p=0.071 (0 cells have expected count less than 5. The minimum expected count is 19.11)
The density of people in the area where the residence is located is very high.	$\chi^2=1.324$ df=2 p=0.516 (0 cells have expected count less than 5. The minimum expected count is 20.47)
The buildings around my residence are very close to each other/congested.	$\chi^2=9.9500$ df=2 p=0.009 (0 cells have expected count less than 5. The minimum expected count is 20.02)

4.5.3 Size of the House

In the survey application, the size of the house was not asked directly in square meters, instead the participants were asked to select one of the options presented as a range in the survey (for detail information, see Chapter 3.3.2). Therefore, size is a qualitative data. For this reason, Chi-square analysis was conducted to determine the relationship between the participants' perceptual changes on satisfaction and residence size. According to the results of the analysis, there was no statistically significant difference between the change in satisfaction and the size of the house. (Table 4.25).

Table 4.25 The statical relation between satisfaction parameters and house size

Satisfaction Parameters	Statistics
I am happy with the neighborhood I live in	$\chi^2=0.274$ df=2 p=0.872 (0 cells have expected count less than 5. The minimum expected count is 17.54)
The number of balconies/terraces is sufficient.	$\chi^2=4.007$ df=2 p=0.135 (0 cells have expected count less than 5. The minimum expected count is 20.61)
I am satisfied with services such as electricity, water, gas and internet.	$\chi^2=0.462$ df=2 p=0.794 (0 cells have expected count less than 5. The minimum expected count is 28.94)
Storage areas are sufficient.	$\chi^2=0.584$ df=2 p=0.747 (0 cells have expected count less than 5. The minimum expected count is 31.14)
The number of bathrooms/toilets is sufficient.	$\chi^2=5.127$ df=2 p=0.077 (0 cells have expected count less than 5. The minimum expected count is 29.38)
I am satisfied with the number of rooms	$\chi^2=0.952$ df=2 p=0.621 (0 cells have expected count less than 5. The minimum expected count is 28.50)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	$\chi^2=1.524$ df=2 p=0.467 (0 cells have expected count less than 5. The minimum expected count is 27.63)
I am satisfied with the size of the house	$\chi^2=4.068$ df=2 p=0.131 (0 cells have expected count less than 5. The minimum expected count is 22.36)
I am satisfied with the garden of my residence.	$\chi^2=2.303$ df=2 p=0.316 (0 cells have expected count less than 5. The minimum expected count is 16.23)

As with the size of the house and the satisfaction variables, Chi-Square analysis was performed to determine the relationship between the size of the house and competency variables. According to the results it's found that the size of the house was not effective on participants competency opinions regards on pandemic temporal process (Table 4.26).

Table 4.26 The statistical relation between competency parameters and house size

Competency Parameters	Statistics
The house I live in is useful/comfortable/ergonomic.	$\chi^2=0.525$ $df=2$ $p=0.769$ (0 cells have expected count less than 5. The minimum expected count is 24.12)
My house is sunny and bright.	$\chi^2=0.365$ $df=2$ $p=0.897$ (0 cells have expected count less than 5. The minimum expected count is 23.78)
My neighborhood is safe from crime.	$\chi^2=0.217$ $df=2$ $p=0.789$ (0 cells have expected count less than 5. The minimum expected count is 26.75)
My house is strong/resistant against earthquakes.	$\chi^2=0.050$ $df=2$ $p=0.976$ (0 cells have expected count less than 5. The minimum expected count is 27.63)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	$\chi^2=12.786$ $df=2$ $p=0.145$ (0 cells have expected count less than 5. The minimum expected count is 12.78)
I use the elevator in the building where my residence is located (if it is an apartment)	$\chi^2=3.335$ $df=2$ $p=0.189$ (0 cells have expected count less than 5. The minimum expected count is 18.42)
I often go to the shopping malls/shops around the residence.	$\chi^2=1.980$ $df=2$ $p=0.372$ (0 cells have expected count less than 5. The minimum expected count is 23.24)
The density of people in the area where the residence is located is very high.	$\chi^2=2.446$ $df=2$ $p=0.294$ (0 cells have expected count less than 5. The minimum expected count is 19.73)
The buildings around my residence are very close to each other/congested.	$\chi^2=2.913$ $df=2$ $p=0.233$ (0 cells have expected count less than 5. The minimum expected count is 1.11)

4.5.4 Number of Balcony/ Terrace

Chi-square analysis was conducted to determine the relationship between the change in the participants' perceptions on satisfaction and competency in the pandemic-based temporal process and the number of balconies/terraces of the house they lived in. According to the results of the analysis, neither the change in satisfaction (Table 4.27) nor the change in the view of competency (Table 4.28) was found to have a statistically significant relationship with the number of balconies/terraces of the house.

Table 4.27 The statistical relation of satisfaction parameters and balcony/ terraces

Satisfaction Parameters	Statistics
I am happy with the neighborhood I live in	$\chi^2=10.200$ df=6 p=0.116 (5 cells have expected count less than 5. The minimum expected count is 0.98)
The number of balconies/terraces is sufficient.	$\chi^2=12.859$ df=6 p=0.045 (6 cells have expected count less than 5. The minimum expected count is 1.65)
I am satisfied with services such as electricity, water, gas and internet.	$\chi^2=0.131$ df=6 p=0.937 (0 cells have expected count less than 5. The minimum expected count is 30.02)
Storage areas are sufficient.	$\chi^2=3.244$ df=6 p=0.778 (6 cells have expected count less than 5. The minimum expected count is 1.62)
The number of bathrooms/toilets is sufficient.	$\chi^2=7.851$ df=6 p=0.249 (5 cells have expected count less than 5. The minimum expected count is 1.45)
I am satisfied with the number of rooms	$\chi^2=4.771$ df=6 p=0.574 (6 cells have expected count less than 5. The minimum expected count is 1.75)
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	$\chi^2=4.138$ df=6 p=0.658 (0 cells have expected count less than 5. The minimum expected count is 1.55)
I am satisfied with the size of the house	$\chi^2=10.933$ df=6 p=0.090 (6 cells have expected count less than 5. The minimum expected count is 1.25)
I am satisfied with the garden of my residence.	$\chi^2=12.227$ df=6 p=0.057 (5 cells have expected count less than 5. The minimum expected count is 0.91)

Table 4.28 The statistical relation of competency parameters and balcony/ terraces

Competency Parameters	Statistics
The house I live in is useful/comfortable/ergonomic.	$\chi^2=6.697$ df=6 p=0.350 (6 cells have expected count less than 5. The minimum expected count is 1.35)
My house is sunny and bright.	$\chi^2=13.133$ df=6 p=0.241 (5 cells have expected count less than 5. The minimum expected count is 1.50)
My neighborhood is safe from crime.	$\chi^2=1.245$ df=6 p=0.478 (5 cells have expected count less than 5. The minimum expected count is 29.42)
My house is strong/resistant against earthquakes.	$\chi^2=9.902$ df=6 p=0.129 (6 cells have expected count less than 5. The minimum expected count is 1.50)
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	$\chi^2=12.786$ df=6 p=0.145 (5 cells have expected count less than 5. The minimum expected count is 12.78)
I use the elevator in the building where my residence is located (if it is an apartment)	$\chi^2=15.430$ df=6 p=0.517 (6 cells have expected count less than 5. The minimum expected count is 1.03)
I often go to the shopping malls/shops around the residence.	$\chi^2=9.150$ df=6 p=0.165 (6 cells have expected count less than 5. The minimum expected count is 1.30)
The density of people in the area where the residence is located is very high.	$\chi^2=1.324$ df=6 p=0.516 (6 cells have expected count less than 5. The minimum expected count is 20.47)
The buildings around my residence are very close to each other/congested.	$\chi^2=9.033$ df=6 p=0.172 (5 cells have expected count less than 5. The minimum expected count is 1.11)

In summary, the perceptual changes and resident characteristics compared to the pre- and post-pandemic period that formed the data of the study are as follows:

- There was no statistically significant difference the satisfaction and competency level changes between the number of floors of the house.
- There was no statistically significant difference change in satisfaction and competency levels between presence of elevator.
- There was no statistically significant difference the change in satisfaction and competency levels between the size of the house.
- There was no statistically significant difference the change in satisfaction and competency levels between number of balcony or terrace.

4.6 Physical Environmental Characteristics of Participants' Houses According to Objective Measurements

In this section, the physical environmental characteristics of the participants' houses according to objective measurements were examined under the titles of satisfaction and competency. The objective measurements were: (1) Total Construction Area/ Building Block, (2) Building Base Area/ Total Yard, (3) Setback Distance, (4) Distance to Nearest House.

4.6.1 Total Construction Area/ Building Block

A statistically significant relationship was found between total construction area / building block (KAKS) and perceptual changes related to satisfaction with the neighbourhood ($F=4.390$, $df=2$, $p=0.013$). Accordingly, participants living in a residential area with a low KAKS value have a similar level of neighbourhood satisfaction before and after the pandemic. Participants living in an area with a high KAKS level are more satisfied with their neighbourhood after the pandemic than before the pandemic. This situation shows that there may be deficiencies in the explanation of neighbourhood satisfaction with the pandemic process, and the KAKS value cannot be the only parameter in explaining the satisfaction of the neighbourhood. Therefore, it is necessary to carry out more studies on this subject (Table 4.29).

A statistically significant relationship was found between KAKS and perceptual changes in storage space satisfaction ($F=3.846$, $df=2$, $p=0.023$). However, when the

relationship direction is examined, it is seen that the average values are close to each other according to the perceptual changes. To generalize this relationship between the storage area and KAKS, it will be necessary to conduct more studies with different methods. (Table 4.29).

Table 4.29 Total Construction Area/ Building Block Satisfaction

Satisfaction Parameters	Total Construction Area/ Building Block	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	1.88 (2.916)	$F=4.390$, $df=2$, $p=0.013$
	BP=AP	n=150	1.16 (1.400)	
	BP<AP	n=40	2.07 (2.732)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	1.83 (2.665)	$F=2.045$, $df=2$, $p=0.132$
	BP=AP	n=115	1.22 (1.374)	
	BP<AP	n=47	1.471 (2.100)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	1.74 (2.384)	$F=1.585$, $df=2$, $p=0.207$
	BP=AP	n=97	1.19 (1.311)	
	BP<AP	n=66	1.54 (2.595)	
Storage areas are sufficient.	BP>AP	n=71	2.00 (2.909)	$F=3.846$, $df=2$, $p=0.023$
	BP=AP	n=94	1.39 (1.790)	
	BP<AP	n=79	1.07 (1.379)	
“The number of bathrooms/toilets is sufficient.”	BP>AP	n=67	0.50 (0.806)	$F=0.260$, $df=2$, $p=0.772$
	BP=AP	n=108	0.54 (1.033)	
	BP<AP	n=69	0.62 (1.081)	
I am satisfied with the number of rooms	BP>AP	n=82	1.69 (2.523)	$F=0.052$, $df=2$, $p=0.949$
	BP=AP	n=97	1.26 (1.653)	
	BP<AP	n=65	1.49 (1.752)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	1.79 (2.489)	$F=1.212$, $df=2$, $p=0.300$
	BP=AP	n=109	1.35 (1.882)	
	BP<AP	n=63	1.30 (1.906)	
I am satisfied with the size of the house	BP>AP	n=83	1.39 (1.772)	$F=0.235$, $df=2$, $p=0.791$
	BP=AP	n=110	1.57 (2.414)	
	BP<AP	n=51	1.38 (1.882)	
I am satisfied with the garden of my residence.	BP>AP	n=58	1.49 (1.808)	$F=0.251$, $df=2$, $p=0.779$
	BP=AP	n=149	1.51 (2.208)	
	BP<AP	n=137	1.24 (2.118)	

It's found that here is no statistically significant relationship between KAKS and perceptual changes related to competency (Table 4.30). This situation contains clues showing that the KAKS value, which is one of the physical environmental characteristics, is insufficient in explaining the changes in competence in the context

of the pandemic-based temporal process. Therefore, it is considered necessary to carry out further studies on this subject on different parameters.

Table 4.30 Total Construction Area/ Building Block Competency

Competency Parameters	Total Construction Area/ Building Block	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	1.61 (2.392)	F=3.030, df=2, p=0.050
	BP=AP	n=106	1.12 (1.154)	
	BP<AP	n=55	1.93 (2.843)	
My house is sunny and bright.	BP>AP	n=73	1.48 (2.237)	F=0.89, df=2, p=0.987
	BP=AP	n=110	1.51 (2.107)	
	BP<AP	n=61	1.37 (1.945)	
My neighborhood is safe from crime.	BP>AP	n=72	1.48 (2.3237)	F=0.089, df=2, p=0.914
	BP=AP	n=111	1.51 (2.107)	
	BP<AP	n=61	1.37 (1.945)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	1.45 (2.015)	F=0.320, df=2, p=0.727
	BP=AP	n=105	1.57 (2.302)	
	BP<AP	n=63	1.31 (1.853)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	1.69 (2.490)	F=1.789, df=2, p=0.169
	BP=AP	n=117	1.20 (1.509)	
	BP<AP	n=61	1.73 (2.545)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	1.69 (2.523)	F=0.052, df=2, p=0.949
	BP=AP	n=149	1.26 (1.653)	
	BP<AP	n=53	1.49 (1.752)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	1.809 (2.845)	F=1.418, df=2, p=0.244
	BP=AP	n=118	1.36 (1.738)	
	BP<AP	n=53	1.24 (1.536)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	1.39 (1.772)	F=0.235, df=2, p=0.791
	BP=AP	n=129	1.57 (2.414)	
	BP<AP	n=45	1.38 (1.882)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	1.10 (0.933)	F=2.947, df=2, p=0.054
	BP=AP	n=137	1.43 (2.003)	
	BP<AP	n=44	2.09 (3.222)	

4.6.2 Building Base Area/ Total Yard

There is no statistically significant relationship between TAKS and perceptual changes related to satisfaction (Table 4.31).

Table 4.31 Building Base Area/ Total Yard Satisfaction

Satisfaction Parameters	Building Base Area/ Total Yard	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	0.60 (1.165)	$F=1.534$, $df=2$, $p=0.218$
	BP=AP	n=150	0.60 (1.030)	
	BP<AP	n=40	0.30 (0.329)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	0.65 (1.405)	$F=0.644$, $df=2$, $p=0.526$
	BP=AP	n=115	0.51 (0.751)	
	BP<AP	n=47	0.55 (0.988)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	0.53 (0.960)	$F=2.320$, $df=2$, $p=0.100$
	BP=AP	n=97	0.43 (0.739)	
	BP<AP	n=66	0.77 (1.280)	
Storage areas are sufficient.	BP>AP	n=71	1.47 (2.1004)	$F=1.620$, $df=2$, $p=0.200$
	BP=AP	n=94	0.54 (0.457)	
	BP<AP	n=79	0.51 (0.921)	
“The number of bathrooms/toilets is sufficient.”	BP>AP	n=67	1.49 (2.382)	$F=0.424$, $df=2$, $p=0.665$
	BP=AP	n=108	1.34 (1.653)	
	BP<AP	n=69	1.64 (2.428)	
I am satisfied with the number of rooms	BP>AP	n=82	1.41 (0.496)	$F=1.187$, $df=2$, $p=0.307$
	BP=AP	n=97	1.52 (0.502)	
	BP<AP	n=65	1.42 (0.497)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	0.60 (0.446)	$F=2.556$, $df=2$, $p=0.080$
	BP=AP	n=109	0.41 (0.446)	
	BP<AP	n=63	0.75 (1.444)	
I am satisfied with the size of the house	BP>AP	n=83	0.53 (0.984)	$F=2.036$, $df=2$, $p=0.133$
	BP=AP	n=110	0.67 (1.534)	
	BP<AP	n=51	0.34 (0.407)	
I am satisfied with the garden of my residence.	BP>AP	n=58	0.52 (0.857)	$F=0.400$, $df=2$, $p=0.670$
	BP=AP	n=149	0.53 (1.012)	
	BP<AP	n=137	0.55 (0.988)	

A statistically significant relationship was found between TAKS and perceptual changes related to usefulness. Accordingly, participants with a low TAKS value are satisfied with a similar level of usefulness before and after the pandemic. While participants living in areas with higher TAKS values thought that their housing was useful before the pandemic, they were less satisfied with this situation after the pandemic (Table 4.32).

A statistically significant relationship was found between TAKS and the perceptual changes related to the brightness of the house. According to this, participants with low TAKS values are satisfied that the house is illuminated at a similar level before and after the pandemic. It was observed that the participants living in areas with higher TAKS values thought that their houses were bright before the pandemic but were less satisfied with this situation after the pandemic (Table 4.32).

A statistically significant relationship was found between TAKS and perceptual changes related to security. Accordingly, participants with a low TAKS value are satisfied that the house is safe at a similar level before and after the pandemic. It was observed that participants living in areas with higher TAKS values thought that their housing was safe before the pandemic, but they were less satisfied with this situation after the pandemic (Table 4.32).



Table 4.32 Building Base Area/ Total Yard Competency

Competency Parameters	Building Base Area/ Total Yard	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	0.77 (1.417)	$F=3.489$, $df=2$, $p=0.032$
	BP=AP	n=106	0.39 (0.470)	
	BP<AP	n=55	0.54 (0.889)	
My house is sunny and bright.	BP>AP	n=73	0.54 (0.999)	$F=3.292$, $df=2$, $p=0.042$
	BP=AP	n=110	0.42 (0.547)	
	BP<AP	n=61	0.55 (0.988)	
My neighborhood is safe from crime.	BP>AP	n=72	0.54 (0.999)	$F=3.225$, $df=2$, $p=0.039$
	BP=AP	n=111	0.42 (1.455)	
	BP<AP	n=61	0.82 (1.280)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	0.52 (0.840)	$F=0.289$, $df=2$, $p=0.749$
	BP=AP	n=105	0.53 (1.032)	
	BP<AP	n=63	0.63 (1.083)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	0.50 (0.867)	$F=0.739$, $df=2$, $p=0.303$
	BP=AP	n=117	0.54 (0.853)	
	BP<AP	n=61	0.63 (1.312)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	1.61 (2.022)	$F=0.141$, $df=2$, $p=0.869$
	BP=AP	n=149	1.42 (2.214)	
	BP<AP	n=53	1.49 (1.846)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	0.68 (1.204)	$F=1.216$, $df=2$, $p=0.298$
	BP=AP	n=118	0.55 (1.014)	
	BP<AP	n=53	0.40 (0.443)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	1.41 (2.247)	$F=0.42$, $df=2$, $p=0.959$
	BP=AP	n=129	1.48 (2.089)	
	BP<AP	n=45	1.52 (1.932)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	0.52 (0.857)	$F=1.576$, $df=2$, $p=0.209$
	BP=AP	n=137	0.53 (1.012)	
	BP<AP	n=44	0.55 (0.988)	

4.6.3 Setback Distance

The setback distance is considered as a parameter used to evaluate the garden of the building where the house is located. One-way variance analysis (ANOVA) was applied to determine the relationship between the change in satisfaction parameters according to setback distance and pandemic-based temporal process. It's found that there is no statistically significant relationship between perceptual changes related to Setback Distance and satisfaction (Table 4.33). A similar situation has been detected in the competency parameters (Table 4.34). According to the results of one-way variance analysis (ANOVA), there was no statistically significant relationship between the change in views on proficiency parameters and setback distance in the pandemic-based temporal process. Therefore, it seems that the setback distance parameter is insufficient in explaining the changes related to satisfaction and competency in the context of the pandemic-based temporal process.

Table 4.33 Setback Distance Satisfaction

Satisfaction Parameters	Building Base Area/ TotalYard	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	0.60 (1.165)	F=1.534, df=2, p=0.218
	BP=AP	n=150	0.60 (1.030)	
	BP<AP	n=40	0.30 (0.329)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	0.65 (1.405)	F=0.644, df=2, p=0.526
	BP=AP	n=115	0.51 (0.751)	
	BP<AP	n=47	0.55 (0.988)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	0.53 (0.960)	F=2.320, df=2, p=0.100
	BP=AP	n=97	0.43 (0.739)	
	BP<AP	n=66	0.77 (1.280)	
Storage areas are sufficient.	BP>AP	n=71	1.47 (2.1004)	F=1.620, df=2, p=0.200
	BP=AP	n=94	0.54 (0.457)	
	BP<AP	n=79	0.51 (0.921)	
The number of bathrooms/toilets is sufficient.	BP>AP	n=67	1.49 (2.382)	F=0.424, df=2, p=0.665
	BP=AP	n=108	1.34 (1.653)	
	BP<AP	n=69	1.64 (2.428)	
I am satisfied with the number of rooms	BP>AP	n=82	1.41 (0.496)	F=1.187, df=2, p=0.307
	BP=AP	n=97	1.52 (0.502)	
	BP<AP	n=65	1.42 (0.497)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	0.60 (0.446)	F=2.556, df=2, p=0.080
	BP=AP	n=109	0.41 (0.446)	
	BP<AP	n=63	0.75 (1.444)	
I am satisfied with the size of the house	BP>AP	n=83	0.53 (0.984)	F= 2.036, df=2, p=0.133
	BP=AP	n=110	0.67 (1.534)	
	BP<AP	n=51	0.34 (0.407)	
I am satisfied with the garden of my residence.	BP>AP	n=58	0.52 (0.857)	F=0.400, df=2, p=0.670
	BP=AP	n=149	0.53 (1.012)	
	BP<AP	n=137	0.55 (0.988)	

Table 4.34 Setback Distance Competency

Competency Parameters	Setback Distance	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	8.18 (7.360)	F=1.020, df=2, p=0.362
	BP=AP	n=106	7.47 (6.301)	
	BP<AP	n=55	6.58 (5.251)	
My house is sunny and bright.	BP>AP	n=73	6.70 (5.407)	F=0.911, df=2, p=0.408
	BP=AP	n=110	8.02 (6.455)	
	BP<AP	n=61	7.52 (6.827)	
My neighborhood is safe from crime.	BP>AP	n=72	6.70 (5.407)	F=0.911, df=2, p=0.403
	BP=AP	n=111	8.02 (6.455)	
	BP<AP	n=61	7.52 (6.827)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	8.05 (6.705)	F=0.408, df=2, p=0.666
	BP=AP	n=105	7.34 (6.048)	
	BP<AP	n=63	7.14 (6.928)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	8.26 (6.977)	F=2.198, df=2, p=0.113
	BP=AP	n=117	6.61 (5.864)	
	BP<AP	n=61	8.42 (6.893)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	0.501 (0.982)	F=0.027, df=2, p=0.973
	BP=AP	n=149	0.52 (0.914)	
	BP<AP	n=53	0.70 (1.180)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	6.89 (5.643)	F=0.482, df=2, p=0.618
	BP=AP	n=118	7.78 (6.609)	
	BP<AP	n=53	7.77 (7.262)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	6.86 (5.574)	F= 2.214, df=2, p=0.111
	BP=AP	n=129	8.31 (7.294)	
	BP<AP	n=45	6.24 (4.882)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	6.59 (5.484)	F=1.966, df=2, p=0.142
	BP=AP	n=137	7.43 (6.962)	
	BP<AP	n=44	7.51 (6.474)	

4.6.4 Distance to Nearest Building

During the pandemic process, distance has turned into an important phenomenon. Considering spatially, it was deemed necessary to analyse the distance between buildings in the context of satisfaction parameters, with the assumption that it could be associated with human density in the context of pandemic rules. For this, the change in satisfaction parameters in the pandemic-based temporal process and the relationship between the nearest building to the participants' residences and its distance were tested with one-way variance analysis (ANOVA). According to analyse results it's found that there is no statistically significant relationship between the perceptual changes related to satisfaction and distance to nearest building (Table 4.35).

Table 4.35 Distance to Nearest Building Satisfaction

Satisfaction Parameters	Distance to Nearest House	Participants	Mean (SD)	Statistics
I am happy with the neighborhood I live in	BP>AP	n=54	6.88 (6.743)	F=0.495, df=2, p=0.610
	BP=AP	n=150	7.19 (6.476)	
	BP<AP	n=40	6.94 (6.341)	
The number of balconies/terraces is sufficient.	BP>AP	n=82	7.73 (6.705)	F=1.007, df=2, p=0.367
	BP=AP	n=115	6.45 (5.972)	
	BP<AP	n=47	6.74 (6.565)	
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	n=81	6.84 (6.479)	F=2.320 df=2, p=0.362
	BP=AP	n=97	7.687 (6.616)	
	BP<AP	n=66	6.94 (6.341)	
Storage areas are sufficient.	BP>AP	n=71	8.27 (6.645)	F=2.359, df=2, p=0,097
	BP=AP	n=94	6.17 (5.494)	
	BP<AP	n=79	6.65 (6.874)	
"The number of bathrooms/toilets is sufficient."	BP>AP	n=67	7.17 (6.210)	F=0,530 df=2, p=0.589
	BP=AP	n=108	7.22 (6.540)	
	BP<AP	n=69	6.94 (6.341)	
I am satisfied with the number of rooms	BP>AP	n=82	1.56 (0.590)	F=0,481, df=2, p=0.619
	BP=AP	n=97	1.51 (0.614)	
	BP<AP	n=65	1.60 (0.657)	
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	n=72	6.79 (6.109)	F=0.291, df=2, p=0.748
	BP=AP	n=109	6.31 (6.739)	
	BP<AP	n=63	6.94 (6.341)	
I am satisfied with the size of the house	BP>AP	n=83	6.45 (5.815)	F= 1.458, df=2, p=0.256
	BP=AP	n=110	6.70 (6.238)	
	BP<AP	n=51	8.26 (7.267)	
I am satisfied with the garden of my residence.	BP>AP	n=58	6.94 (6.449)	F=2.280, df=2, p=0.105
	BP=AP	n=149	7.43 (6.564)	
	BP<AP	n=137	4.96 (4.837)	

A statistically significant relationship was found between the perceptual changes related to competency and distance to nearest building. However, when the relationship direction is examined, it is seen that the mean values are close to each other according to the perceptual changes. In order to generalize this relationship, which has been determined between accessibility and the distance between the nearest building, more research and with different methods will need to be investigated (Table 4.36).

Table 4.36 Distance to Nearest Building Competency

Competency Parameters	Distance to Nearest House	Participants	Mean (SD)	Statistics
The house I live in is useful/comfortable/ergonomic.	BP>AP	n=83	6.88 (6.743)	F=1.088, df=2, p=0.339
	BP=AP	n=106	7.19 (6.476)	
	BP<AP	n=55	6.94 (6.341)	
My house is sunny and bright.	BP>AP	n=72	7.001 (6.563)	F=1.722, df=2, p=0.181
	BP=AP	n=111	5.713 (5.036)	
	BP<AP	n=61	6.943 (6.341)	
My neighborhood is safe from crime.	BP>AP	n=73	6.70 (5.407)	F=0.911, df=2, p=0.405
	BP=AP	n=110	8.02 (6.455)	
	BP<AP	n=61	7.52 (6.827)	
My house is strong/resistant against earthquakes.	BP>AP	n=76	6.73 (5.610)	F=0.408, df=2, p=0.549
	BP=AP	n=105	7.43 (6.839)	
	BP<AP	n=63	6.38 (6.346)	
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	n=66	7.14 (6.333)	F=0.077, df=2, p=0.926
	BP=AP	n=117	7.03 (6.266)	
	BP<AP	n=61	6.94 (6.341)	
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	n=42	8.49 (7.099)	F=0.027, df=2, p=0.973
	BP=AP	n=149	6.66 (6.161)	
	BP<AP	n=53	6.94 (6.341)	
I often go to the shopping malls/shops around the residence.	BP>AP	n=73	6.79 (6.109)	F=3.486, df=2, p=0.032
	BP=AP	n=118	6.31 (6.739)	
	BP<AP	n=53	6.94 (6.341)	
The density of people in the area where the residence is located is very high.	BP>AP	n=70	6.94 (6.449)	F= 2.350, df=2, p=0.098
	BP=AP	n=129	5.84 (5.418)	
	BP<AP	n=45	6.94 (6.341)	
The buildings around my residence are very close to each other/congested.	BP>AP	n=63	5.83 (5.650)	F=1.304, df=2, p=0.273
	BP=AP	n=137	7.32 (6.768)	
	BP<AP	n=44	7.34 (5.822)	

In summary, according to the objective measurements that constitute the data of the research, the physical environmental characteristics of the participant houses are as follows:

- A significant relationship was found between the Total Construction Area/ Building Block Satisfaction and the satisfaction of the participants from the neighbourhood. Participants are more satisfied before the pandemic in areas with high density in terms of occupancy-vacancy ratio.
- A significant relationship was found between the Total Construction Area/ Building Block Satisfaction and the satisfaction of the participants in the storage areas. In order to generalize this relationship between the storage area and TAKS, it will be necessary to conduct more studies with different methods.

- There is no statistically significant relationship between TAKS and perceptual changes related to satisfaction.
- A statistically significant relationship was found between TAKS and perceptual changes related to usefulness. Participants are more satisfied before the pandemic in areas with high density in terms of occupancy-vacancy ratio.
- A statistically significant relationship was found between TAKS and the perceptual changes related to the brightness of the house. Participants are more satisfied before the pandemic in areas where the density is high in terms of occupancy-vacancy ratio.
- A statistically significant relationship was found between TAKS and perceptual changes related to security. Participants are more satisfied with security in areas with high occupancy-vacancy ratio before the pandemic.
- There is no statistically significant relationship between perceptual changes related to Setback Distance and satisfaction.
- There is no statistically significant relationship was found between the perceptual changes related to Setback Distance and competency.
- There is no statistically significant relationship between the perceptual changes related to distance to nearest building and satisfaction.
- A statistically significant relationship was found between the perceptual changes related to distance to nearest building and satisfaction. To generalize this relationship, which has been determined between accessibility and the distance between the nearest building, more and different methods will need to be investigated.

Table 4.37 Summary on the change in satisfaction with independent variables

	Socio-Demographic Characteristics			Resident Characteristics				Physical Environmental Measurements			
	Age	Gender	SFS	Storey	Elevator	Size	Balcony/Terrace	Total Construction Area / Building Block	Building Base Area/ Total Yard	Setback Distance	Distance to Nearest Building
I am happy with the neighborhood I live in								+			
The number of balconies/terraces is sufficient.							+				
I am satisfied with services such as electricity, water, gas and internet.											
Storage areas are sufficient.								+			
The number of bathrooms/toilets is sufficient.	+										
I am satisfied with the number of rooms.											
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.											
I am satisfied with the size of the house.											
I am satisfied with the garden of my residence.		+									

Table 4.38 Summary on the change in satisfaction with independent variables

	Socio-Demographic Characteristics			Resident Characteristics				Physical Environmental Measurements			
	Age	Gender	SES	Storey	Elevator	Size	Balcony/Terrace	Total Construction Area / Building Block	Building Base Area/ Total Yard	Setback Distance	Distance to Nearest Building
The house I live in is useful/comfortable/ergonomic.									+		
My house is sunny and bright.	+		+						+		
My neighborhood is safe from crime.			+						+		
My house is strong/resistant against earthquakes.											
The traffic around my residence is suitable for pedestrians.											
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.			+								
The green areas and parks near my residence are in good condition/maintained.											
I use the elevator in the building where my residence is located (if it is an apartment)											
I often go to the shopping malls/shops around the residence.											+
The density of people in the area where the residence is located is very high.											
The buildings around my residence are very close to each other/congested.					+						

4.7 Results on behalf of Studied Neighbourhoods

The satisfaction (Table 4.39) and competency levels (Table 4.40) of the participants according to the neighbourhoods before and during the pandemic are given below.

When the satisfaction of the participants according to the neighbourhoods was examined, it was seen that the satisfaction of the participants from their neighbourhoods before and during the pandemic slightly change in 4 neighbourhoods. In the 2. İnönü neighbourhoods (18% to 15%), Çamtepe neighbourhoods (31% to 14%) and in the Yenikale neighbourhood (%32 to %24), the satisfaction level from the neighbourhood decreased after the pandemic.

The satisfaction of the participants with the number of balconies or terraces in their houses did not change for the 2. İnönü Neighbourhood (n=60) and Sahilevleri Neighbourhood (n=22). Satisfaction decreased during the pandemic in Çamtepe Neighbourhood (50% to 28%). On the contrary, satisfaction with the balcony and terrace increased slightly during the pandemic in Yenikale Neighbourhood (24% to 27%).

The satisfaction of the participants with the infrastructure of their houses did not change in the 2. İnönü Neighbourhood (n=46), Sahilevleri Neighbourhood (n=19) and Yenikale Neighbourhood (n=17) before and during the pandemic. In Sahilevleri Neighbourhood, it was observed that satisfaction with the infrastructure increased after the pandemic (18% to 24%).

When the satisfaction of the participants with the storage area was examined, it was determined that the opinions of the participants did not change before and during the pandemic in the 2. İnönü Neighbourhood (39%), Çamtepe Neighbourhood (50%) and Sahilevleri Neighbourhood (45%). However, when the opinions of the participants in Yenikale Mahallesi after the pandemic were examined, it was seen that their satisfaction with the storage areas in their homes decreased (41% to 32%).

When the satisfaction of the participants with the number of bathrooms and toilets in their houses was examined, it was observed that the opinions of the participants in

the 2. İnönü neighbourhood (42%), Sahilevleri neighbourhood (70%) and Yenikale neighbourhood (44%) did not change mostly before and during the pandemic. Only in Çamtepe neighbourhood, the satisfaction of the participants during the pandemic increased (28% to 38%).

When the satisfaction of the participants with the number of rooms in their homes is examined, the opinions of the participants mostly did not change in the 2. İnönü neighbourhood (44%), Sahilevleri neighbourhood (61%) and Yenikale neighbourhood (44%) before and during the pandemic. In the Sahilevleri neighbourhood, the satisfaction of the participants increased during the pandemic (15% to 24%).

When the satisfaction of the participants with the isolation of their homes was examined, it was determined that the opinions of the participants did not change in the 2. İnönü neighbourhood (40%), Sahilevleri neighbourhood (58%) and Yenikale neighbourhood (44%) before and during the pandemic. In Çamtepe neighbourhood their satisfaction with their insulation decreased (36% to 33%).

Participants' satisfaction with the size of their homes did not change in 4 neighbourhoods before and after the pandemic. However, in Sahilevleri neighbourhood (9% to 6%) and Yenikale neighbourhood (27% to 22%), it was determined that the satisfaction of the participants decreased partially during the pandemic.

The satisfaction of the participants with their gardens did not change mostly in the 2. İnönü neighbourhood (44%), Sahilevleri neighbourhood (61%) and Yenikale neighbourhood (44%) before and during the pandemic. In Çamtepe neighbourhood, the satisfaction of the participants from their gardens during the pandemic increased (40% to 43%).

In summary, when the opinions of the participants before and during the pandemic were examined, it was determined that the participants in Çamtepe neighbourhood were more satisfied with the features of their homes after the pandemic, followed by the participants in Yenikale neighbourhood and Çamtepe neighbourhood. The neighbourhood with the lowest satisfaction is Sahilevleri neighbourhood.

Table 4.37 Satisfaction parameters according to neighbourhood

Satisfaction Parameters	Choice	2.İNÖNÜ (n=112)	ÇAMTEPE (n=58)	SAHİL EVLERİ (n=33)	YENİKALE (n=41)
I am happy with the neighborhood I live in	BP>AP	18%	31%	9%	32%
	BP=AP	67%	55%	73%	46%
	BP<AP	15%	14%	18%	22%
	Total	100%	100%	100%	100%
The number of balconies/terraces is sufficient.	BP>AP	33%	50%	18%	24%
	BP=AP	54%	22%	67%	49%
	BP<AP	13%	28%	15%	27%
	Total	100%	100%	100%	100%
I am satisfied with services such as electricity, water, gas and internet.	BP>AP	34%	36%	18%	39%
	BP=AP	41%	26%	58%	41%
	BP<AP	25%	38%	24%	20%
	Total	100%	100%	100%	100%
Storage areas are sufficient.	BP>AP	35%	17%	24%	41%
	BP=AP	39%	50%	45%	27%
	BP<AP	26%	33%	30%	32%
	Total	100%	100%	100%	100%
The number of bathrooms/toilets is sufficient.	BP>AP	33%	28%	12%	24%
	BP=AP	42%	34%	70%	44%
	BP<AP	25%	38%	18%	32%
	Total	100%	100%	100%	100%
I am satisfied with the number of rooms	BP>AP	34%	43%	15%	34%
	BP=AP	44%	17%	61%	44%
	BP<AP	22%	40%	24%	22%
	Total	100%	100%	100%	100%
The insulation of the house (heat, insulation, humidity, etc.) is sufficient.	BP>AP	29%	36%	18%	37%
	BP=AP	40%	31%	58%	44%
	BP<AP	31%	33%	24%	20%
	Total	100%	100%	100%	100%
I am satisfied with the size of the house	BP>AP	12%	19%	9%	27%
	BP=AP	63%	62%	85%	51%
	BP<AP	26%	19%	6%	22%
	Total	100%	100%	100%	100%
I am satisfied with the garden of my residence.	BP>AP	22%	40%	24%	22%
	BP=AP	44%	17%	61%	44%
	BP<AP	34%	43%	15%	34%
	Total	100%	100%	100%	100%

According to the participants, useful and comfort of their homes did not change before and during the pandemic mostly in 4 neighbourhoods. In 2. İnönü neighbourhood (18% to 15%), Çamtepe neighbourhood (31% to 14%) and Yenikale neighbourhood (32% to 22%) during the pandemic, the competency levels of the

participants decreased. Only after the pandemic in the Sahilevleri neighbourhood, the usefulness and comfort of the house increased during the pandemic (9% to 18%).

When the houses of the participants were sufficiently illuminated and sunny, it was determined that the opinions of the participants mostly did not change before and during the pandemic in the 2. İnönü neighbourhood (40%), Sahilevleri neighbourhood (58%) and Yenikale neighbourhood (44%). Only in Çamtepe neighbourhood, the satisfaction of the participants increased during the pandemic (33% to 36%)

Participants' competency with the safety of their neighbourhoods did not change in 4 neighbourhoods before and during the pandemic. During the pandemic, satisfaction decreased in the 2. İnönü neighbourhood (26% to 12%). During the pandemic, participants' satisfaction with security increased in Sahilevleri neighbourhood (6% to 9%) and Yenikale neighbourhood (22% to 27%).

The competency level of the participants that the house is durable enough did not change predominantly in the 2. İnönü neighbourhood (44%), Sahilevleri neighbourhood (61%) and Yenikale neighbourhood (44%) before and during the pandemic. In Çamtepe neighbourhood, the satisfaction of the participants that the house was durable during the pandemic decreased (43% to 40%).

According to the answers given by most of the participants, their satisfaction with the pollution of their neighbourhoods did not change before and after the pandemic in 4 neighbourhoods.

When the satisfaction of the participants with the presence of the elevator was examined, it was determined that the opinions of the participants did not change in the 2. İnönü neighbourhood (40%), Sahilevleri neighbourhood (58%) and Yenikale neighbourhood (44%) before and during the pandemic. In Çamtepe neighbourhood, the opinions of the participants changed positively during the pandemic (33% to 36%).

When examining how often the participants went to the stores in their neighbourhoods, the opinions of the participants did not change before and after the pandemic in 4 neighbourhoods.

When the satisfaction of the participants with the density of the neighbourhood was examined, it was determined that there was no change in the opinions of most of the participants in the 2. İnönü neighbourhood (44%), Sahilevleri neighbourhood (61%) and Yenikale neighbourhood (44%) before and during the pandemic. In Çamtepe neighbourhood, the satisfaction of the participants due to the busyness of their neighbourhood during the pandemic decreased (43% to %40).

When the proximity of the buildings in the neighbourhoods of the participants was examined, it was determined that the views of the participants did not change in the 2. İnönü neighbourhood (40%), Sahilevleri neighbourhood (58%) and Yenikale neighbourhood (44%) according to the views before and during the pandemic. In Çamtepe neighbourhood, it was determined that the participants were more satisfied with the distance between the buildings during the pandemic (36% to 33%).

In summary, when the views of the participants before and during the pandemic were examined, it was seen that the satisfaction of the participants in the Çamtepe neighbourhood with the competency of their neighbourhoods and homes increased after the pandemic. In the second place is the Sahilevleri neighbourhood. The opinions of the participants in 2. İnönü neighbourhood and Yenikale neighbourhood did not change before and during the pandemic.

Table 4.38 Competency parameters according to neighbourhood

Competency Parameters	Choice	2.İNÖNÜ (n=112)	ÇAMTEPE (n=58)	SAHİL EVLERİ (n=33)	YENİKALE (n=41)
The house I live in is useful/comfortable/ergonomic	BP>AP	18%	31%	9%	32%
	BP=AP	67%	55%	73%	46%
	BP<AP	15%	14%	18%	22%
	Total	100%	100%	100%	100%
My house is sunny and bright.	BP>AP	31%	33%	24%	20%
	BP=AP	40%	31%	58%	44%
	BP<AP	29%	36%	18%	37%
	Total	100%	100%	100%	100%
My neighborhood is safe from crime.	BP>AP	26%	19%	6%	22%
	BP=AP	63%	62%	85%	51%
	BP<AP	12%	19%	9%	27%
	Total	100%	100%	100%	100%
My house is strong/resistant against earthquakes.	BP>AP	34%	43%	15%	34%
	BP=AP	44%	17%	61%	44%
	BP<AP	22%	40%	24%	22%
	Total	100%	100%	100%	100%
There is no pollution (noise, garbage, etc.) in the environment where my residence is located.	BP>AP	12%	19%	9%	27%
	BP=AP	63%	62%	85%	51%
	BP<AP	26%	19%	6%	22%
	Total	100%	100%	100%	100%
I use the elevator in the building where my residence is located (if it is an apartment)	BP>AP	31%	33%	24%	20%
	BP=AP	40%	31%	58%	44%
	BP<AP	29%	36%	18%	37%
	Total	100%	100%	100%	100%
I often go to the shopping malls/shops around the residence.	BP>AP	26%	19%	6%	22%
	BP=AP	63%	62%	85%	51%
	BP<AP	12%	19%	9%	27%
	Total	100%	100%	100%	100%
The density of people in the area where the residence is located is very high.	BP>AP	34%	43%	15%	34%
	BP=AP	44%	17%	61%	44%
	BP<AP	22%	40%	24%	22%
	Total	100%	100%	100%	100%
The buildings around my residence are very close to each other/congested.	BP>AP	29%	36%	18%	37%
	BP=AP	40%	31%	58%	44%
	BP<AP	31%	33%	24%	20%
	Total	100%	100%	100%	100%

In summary, when the opinions of the participants before and during the pandemic on a neighbourhood basis are considered, it has been determined that the satisfaction

and competence of Çamtepe neighbourhood is at the highest level. The fact that there are low-rise houses in Çamtepe neighbourhood and most of them have gardens, their proximity to the main street, strong social relations, and having areas where social distance is ensured have also increased the satisfaction felt from the neighbourhood. The satisfaction and proficiency level of the 2. İnönü Neighbourhood comes right after it. In summary, when the opinions of the participants before and during the pandemic on a neighbourhood basis are considered, it has been determined that the satisfaction and competence of Çamtepe neighbourhood is at the highest level. The fact that there are low-rise houses in Çamtepe neighbourhood and most of them have gardens, their proximity to the main street, strong social relations, and having areas where social distance is ensured have also increased the satisfaction felt from the neighbourhood. The satisfaction and proficiency level of the 2nd İnönü Neighbourhood comes right after it. Although there are multi-storey residences and complexes in the 2. İnönü neighbourhood, the fact that it is close to the main road, public transportation and shopping areas, the distance between the buildings is long, the roads are wide, and the new construction has affected the satisfaction of the participants positively. The satisfaction and competence of Yenikale Neighbourhood take the third place. Yenikale Neighbourhood is the neighbourhood that consists of closed sites, high-rise buildings, and is the farthest away from public transportation and the main road. For this reason, it is a neighbourhood where it is most difficult for people to go shopping from their homes during the pandemic period, where walking is less due to the roughness, and far from parks and equipment. Sahilevleri Neighbourhood, on the other hand, is the neighbourhood where the least satisfaction is achieved during the pandemic process. While it is advantageous to be close to the sea and recreation areas, the houses are detached and have a garden, the distance to shopping centres, the distance to the centre, narrow streets and low social relations have been disadvantages.

Satisfaction results in Çamtepe neighbourhood differ from the other 3 districts. Low-rise residences are in the majority in this neighbourhood where slum-type settlement is dense. The reason for the differentiation in Çamtepe Neighbourhood is that the distance between the buildings is large, every house has a garden, and the neighbourhood relations are dense. Subsequent studies' re-evaluation of the subject through neighbourhood characteristics will support this finding.

4.8 Examination of the Expert Survey's and Household Survey's Results based on Neighbourhoods

In this section, the similarities and differences between the expert survey and the household survey before and after covid-19 and the answers given about neighbourhood satisfaction are explained.

According to the results of the expert survey and household survey, 12 criteria related to the house and neighbourhood are given in Table 4.41 in comparison.

In the expert surveys, the participants were asked their opinions before and after the pandemic. In the household survey, respondents were asked about data related to satisfaction and competency. For this reason, while making the comparison, the satisfaction and competency data were combined and added to the table by taking the average.

Table 4.39 Comparison of house and neighbourhood properties

	Expert Survey				Household Survey			
	BP>AP	BP=AP	BP<AP	Total	BP>AP	BP=AP	BP<AP	Total
Bright and useful	65%	0%	35%	100%	34%	43%	23%	100%
Strong/resistant	66%	0%	34%	100%	25%	42%	33%	100%
Size of the house	43%	0%	57%	100%	34%	47%	19%	100%
Presence of elevator	25%	0%	75%	100%	17%	43%	40%	100%
Safety	53%	0%	47%	100%	20%	45%	35%	100%
Use of garden	39%	0%	61%	100%	32%	39%	30%	100%
Access to services	56%	0%	44%	100%	21%	45%	34%	100%
Beautiful, well-kept and clean	49%	0%	51%	100%	32%	39%	30%	100%
Proximity to green spaces and parks	47%	0%	53%	100%	21%	45%	34%	100%
Security	50%	0%	50%	100%	20%	45%	35%	100%
Social and neighborly relations	47%	0%	53%	100%	33%	40%	27%	100%
Wide streets, wide sidewalks, distances between buildings	55%	0%	45%	100%	31%	36%	33%	100%

When the house characteristics of the participants were examined under the title of “bright and useful”, in the expert survey, while the participants were more satisfied with their homes before the pandemic, their satisfaction levels decreased during the pandemic period (65% to 35%). When the Household questionnaire was examined, the satisfaction of the participants that their homes were bright and useful after the pandemic decreased (34% to 23%). The views of most of the participants (n=106) did not change before and during the pandemic. According to the results, while the satisfaction of the participants in the expert surveys decreased during the pandemic, their opinions did not change in the household survey (Table 4.41).

When the house characteristics of the participants were examined under the title of "strong/resistant", in the expert survey, while the participants were more satisfied with the durability of their houses before the pandemic, their satisfaction levels decreased during the pandemic period (65% to 34%). When the Household survey was examined, participants' satisfaction with the durability of their houses during the pandemic increased (25% to 33%). The views of most of the participants (n=106) did not change before and during the pandemic. According to the results, while the satisfaction of the participants in the expert surveys decreased during the pandemic, their opinions did not change in the household survey (Table 4.41).

When the house characteristics of the participants were examined under the title of "size of the house", the satisfaction of the participants with the size of the house, the number of rooms and the number of balconies increased during the pandemic in the expert survey (43% to 57%). When household surveys were examined, participants' satisfaction with their homes decreased during the pandemic (34% to 19%). The number of participants whose opinions did not change before and during the pandemic is also high (n=115). During the pandemic, while participants were satisfied with the size of their houses according to expert opinions, satisfaction decreased according to household opinions (Table 4.41).

When the house characteristics of the participants were examined under the title of "presence of elevator", the satisfaction of the participants with the presence of elevators during the pandemic increased in the expert survey (25% to 75%). However,

this change is very small compared to the total number of participants. For this reason, it was seen that very few participants expressed their opinions about the existence of the elevator. In the expert survey, most of the participants (n=149) did not report positive or negative opinions before and during the pandemic. When the two questionnaires were compared, it was seen that there was no clear change in the "existence of elevator" (Table 4.41).

When the house characteristics of the participants were examined under the heading of "safety", the satisfaction of the participants with the safety of the house during the pandemic decreased (53% to 47%) in the expert survey, but the rate of change was low. In the expert survey, most of the participants (n=111) did not express positive or negative opinions before and during the pandemic. When the two surveys are compared, there is a decrease in the opinions of experts on "safety" during the pandemic, while there is no change in the opinions of households (Table 4.41).

When the house features of the participants were examined under the title of "use of garden", the satisfaction of the participants in the expert survey that the house was used as a garden during the pandemic increased (39% to 61%). According to the household surveys, the opinions of the participants mostly did not change during the pandemic (n=94). When the two surveys are compared, there is an increase in the opinions of experts about the "use of garden" during the pandemic, while there is no change in the opinions of the households (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the heading "access to services", it was seen in the expert survey that the satisfaction of the participants decreased during the pandemic (56% to 4%). In the household surveys, the opinions of most of the participants did not change before and during the pandemic (n=111). When examined in general, it was seen that the satisfaction of the participants from their neighbourhoods increased during the pandemic process (21% to 34%) (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the title of "Beautiful, well-kept and clean", it was seen in the expert survey that the satisfaction of the participants increased during the pandemic (49% to 51%). In

household surveys, participants' satisfaction with their neighbourhoods decreased (32% to 30%). When the two surveys are compared, the opinions of the experts and the opinions of the households are the opposite of each other (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the heading "Proximity to green spaces and parks", it was seen in the expert survey that the satisfaction of the participants increased during the pandemic (47% to 53%). In household surveys, participants' satisfaction with their neighbourhoods increased (21% to 34%). When the two surveys are compared, expert opinions and household opinions support each other (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the heading "security", it was seen in the expert survey that the satisfaction of the participants did not change before and during the pandemic (50% to 50%). In the household surveys, most of the participants' satisfaction with their neighbourhoods did not change (n=111). When the two surveys are compared, expert opinions and household opinions support each other (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the title of "Social and neighbourly relations", it was seen in the expert survey that the satisfaction of the participants increased during the pandemic (47% to 53%). In the household surveys, most of the participants' satisfaction with their neighbourhood did not change (n=97). Some participants' satisfaction decreased during the pandemic (33% to 27%), (Table 4.41).

When the neighbourhood characteristics of the participants were examined under the heading "Wide streets, wide sidewalks, distances between buildings", it was seen in the expert survey that the satisfaction of the participants decreased during the pandemic (55% to 45%). In the household surveys, most of the participants' satisfaction with their neighbourhood did not change (n=89). Some participants' satisfaction increased during the pandemic (31% to 33%), (Table 4.41).

In summary, when the results of the expert surveys and household surveys conducted before and after the pandemic were examined, it was seen that the

participants in the expert surveys were mostly satisfied and competent with their homes and neighbourhoods before the pandemic. In the household survey, the opinions of the majority of the participants did not change, but when the data before and after the pandemic were examined, it was seen that the participants were more satisfied with their houses and neighbourhoods before the pandemic. When the expert surveys and household surveys were compared, it was determined that the satisfaction and competency level of the expert participants from their neighbourhood and home before the pandemic was higher than the household survey's participants.



CHAPTER 5

DISCUSSION AND CONCLUSION

The quality of life of people is an indicator of the outward expression of their interaction with an environment that has the qualities of being healthy, community health and meeting the needs of the individual. In addition to being in a state of complete well-being in terms of health, spirit, and body, it requires an environment where a healthy lifestyle can be maintained, where the quality of housing is provided under minimum conditions in social unity. This environment should be such as to ensure the maintenance of a healthy life in terms of accessibility, food, safety, air quality, water and sanitation measures, soil and solid waste collection and climate stability. Being a healthy city plays a major role in improving the quality of urban life.

Since urban health has an international importance, the main objective of international interaction is to carry out local initiatives jointly with international programs; to ensure that each city can transfer their experience and knowledge about new public health studies to each other, develop common behaviours, and legitimize their health-related and private policy initiatives (Rosen, 1993). In this reason, in international environmental-health movements such as the "Healthy Cities Project" based on the "Health for All" strategy developed by WHO in accordance with the European Charter for Local Environment and Health is encouraged (Hansluwka, 1985; Badura, Kickbusch, 1991). The main goal of the Healthy Cities Project is to develop healthy cities by restructuring to make changes for a healthy city, to spread the idea of healthy cities to more cities and to increase cooperation between cities (ODPHP, 2007). The Healthy Cities Project sets out from what a city is and what a healthy city should be. However, how the Healthy Cities Project will take action as a result of a pandemic such as Covid-19 is one of the important and current discussions. Since this thesis aims to provide data for these discussions, it has important outputs for the field.

Declared as a pandemic by the World Health Organization in March 2019, Covid-19 has changed our life habits by affecting urban life. Measures taken by healthcare professionals around the world have brought restrictions on interaction with urban space. It is predicted that it will leave its place to new habits and new lifestyles during

and after the pandemic (Lai & Lebster, 2020). The spatial isolation experienced with restrictions directly covers the residence and the residential environment where people are located. Within the scope of the study, housing areas with different qualities of a certain area were evaluated with the healthy settlement criteria specified in the literature, their adequacy was discussed, and their deficiencies were determined. . This study aims to examine the satisfaction and expectations of post-pandemic residential areas through different parameters.

In this thesis, it is aimed to examine the differences in the qualitative and quantitative evaluations of the pre-pandemic and post-pandemic houses and neighbourhoods in Sahilevleri neighbourhoods, Yenikale neighbourhoods, 2.İnönü neighbourhood and Çamtepe neighbourhood, which contain different construction features of the city of Izmir, from a perceptual and physical point of view. For this purpose, a method on the creation of different measures together is described. The basis of the construction of such a method is that the measures developed within the scope of combating the epidemic affect the spatial order and urban life. The decisions taken in the fight against the epidemic and the measures implemented in line with the opinions of health experts limited the interaction of people with the place. On the other hand, it brings with it discussions that the habits gained after the pandemic can emerge as a lifestyle. At the same time, it is thought that the use of space organization disciplines required by the new lifestyle should discuss new problems and solution proposals through spatial order. During the realization of the thesis, the importance of people's homes and neighbourhoods has increased with the Covid-19 pandemic and the restrictions on activities such as education, work, and social life. For this reason, thanks to the aim of the thesis, a measurement could be made, and it was thought that people's views on the physical and perceptual qualities of their homes and neighbourhoods could be taken. While it was emphasized to stay indoors in the fight against the Covid-19 process, it was expected that the qualities of indoor spaces would provide healthy conditions for the household.

An online survey was conducted with experts living in Izmir or another province to determine and compare the parameters that are important for a healthy neighbourhood between the health professionals who developed the methods of combating the

pandemic and those who developed the methods of combating the epidemic. A household survey was then conducted. In the creation of the questionnaire, questions were prepared both on the parameters obtained from the experts and on the qualifications considered within the framework of the concept of healthy neighbourhood in the context of the literature. The household survey was conducted face-to-face with 244 people living in 4 different neighbourhoods with different urban arrays in the Narlıdere district of İzmir. As a result of the survey applications, the parameters deemed necessary for a healthy neighbourhood were obtained through the opinions of health and space organization experts and the thoughts of those living in a settled area. Finally, data related to the study area were collected to be analysed within the scope of the study. The data in question includes measurements on the map and is based on measurements on building and parcel relations and healthy city parameters from the literature. At last, the results of the household surveys, expert opinions, and the characteristics of the area where the participants' residence is located were compared with statistical methods according to the views before and after the pandemic.

When the results of the expert surveys were examined, while the design-based experts cared that their homes were bright and useful before the pandemic, health-based experts cared that their homes were bright and useful during the pandemic period. The size of the house, the number of rooms, the number of bathrooms and the number of balconies has become more important for design-based users during the pandemic. When the literature is examined, when the satisfaction of people in their homes is questioned during the pandemic process, it has been understood that those living in spacious houses with large balconies and terraces and offering different functions are satisfied (Aydın & Dimensions, 2007). The opinions of two different based experts on the use of elevators did not change before and during the pandemic. However, in the process of applying the physical distance rules, the elevator is not used unless it is necessary (İnce & Yılmaz, 2021). For this reason, it is predicted that the use of elevators will decrease. While the security expectation of health-based experts increased during the pandemic, the expectation of design-based experts decreased. The fact that health-based specialists are actively working and outside during the pandemic has increased the security expectation of specialists. During the

pandemic, the experts' desire for their homes to be close to green areas and parks has increased due to being inactive during the closure process and going out within walking distance while maintaining social distance. When the neighbourhood characteristics of the participants were examined, the need for health-based experts to access services, to have a clean and well-maintained environment, and to have wide streets increased during the pandemic. This situation confirmed the warnings of health-based experts during the pandemic process, such as social distance, personal hygiene, and going out within walking distance. While design-based experts did not care about social and neighbourhood relations during the pandemic process, health-based experts gave great importance to social and neighbourly relations. During the pandemic, neighbours have found ways to maintain their social networks by communicating on balconies or driveways (İlhan, 2021). This situation changes our basic rituals regarding communication with our social networks. Both expert groups did not share their views on the safety of the neighbourhood before and during the pandemic. However, because the need to make eye contact and read the signals transmitted by facial expression is one of the basic principles that ensure the comfort and safety of strangers in a common area (İlhan, 2021). When the results of the household survey are examined, the biggest decrease during the pandemic is related to isolation and infrastructure, followed by the size of the house. Insulation and size coincide with basic human needs. Infrastructure, on the other hand, meets basic needs such as internet and electricity, but the need for internet has increased with digitalization.

In this thesis, perceptual changes, and socio-demographic characteristics (SES, gender, age) compared to pre-pandemic and during pandemic period were examined under the headings of satisfaction and competency. There was no relationship between SES and perceptual changes. However, the pandemic was also expected to make class differences more visible (İlhan, 2021).

When the age data and perceptual changes of the participants were examined, it was seen that the results were generally not related to satisfaction and competency. However, a positive relationship was established between the age data of the participants and their satisfaction with the bathroom and toilet at home. Due to the increase in the length of stay at home (İlhan, 2021) and the change in hygiene rules

during the pandemic period, it is normal for the participants' satisfaction with the bathroom or toilet adequacy in their homes to change. On the other hand, the fact that the house is sunny and bright was also associated with the age data. It is known that daylight lighting in architectural design has many positive effects on the environment and human health (Sipahi & Yamaçlı, 2021). For this reason, daylight is important in reducing human health risks against the negative effects of the quarantine process that we are closed. At the same time, sunlight has been accepted as a buffer against the spread of pathogens in buildings due to its bactericidal effects and has been used to reduce the indoor viability of some infectious viruses (Van Den Wymelenberg, 2020).

When the gender data of the participants were examined, it was seen that the results were not at all related to the competency level of the house but were partially related to the satisfaction felt at home. In line with the answers given by the participants, their satisfaction with the garden of the house is related to the gender data. During the pandemic period, male participants' satisfaction with their gardens (48 to 54) and female participants' satisfaction with their gardens (21 to 35) decreased. With the emergence of the epidemic, interest in zero contact concept, garden and detached houses has intensified (Sürer, 2021).

When the perceptual changes and housing characteristics were examined, it was determined that the floor height of the house did not affect the satisfaction and competency levels of the participants. According to the results of Mullins, P., and Robb, J., H.'s research, those living in high-rise residential buildings stated that they could not reach satisfaction in both indoor and environmental contexts, as compared to those living in single houses, due to the inadequacy of living spaces and their relationship with privacy (Taşçı, 2020). The lack of satisfaction affects the psychology of individuals and therefore their behavior negatively.

The behaviour of most participants regarding the use of elevators before and after the pandemic did not change. One of the other social areas to be considered during the social isolation period was the elevators. However, in the process of applying the physical distance rules, the elevator is not used unless it is necessary, and even warnings were made to pay attention to the elevator buttons if used (İnce & Yılmaz,

2021). In the study conducted by İBAD Journal of Social Sciences, the participants gave the answer of 83.3% I strongly agree with the statement "I did not use an elevator unless it was necessary" (İnce & Yılmaz, 2021). As it is stated in the literature, while the use of elevators is expected to decrease, there has been no change in the use of elevators by people before and during the pandemic.

When the perceptual changes and housing characteristics were examined, it was determined that the size of the house did not affect the satisfaction and competency levels of the participants. In houses, which are the most private units where individuality can be experienced, a person needs spaces where he can live himself. Before the pandemic, "houses" were mostly used for accommodation purposes due to reasons such as the length of time spent outdoors (Taşçı, 2020). The increase in the time spent at home with the pandemic has led to the need to seek answers to these problems.

When the perceptual changes and housing characteristics were examined, it was determined that the number of balconies and terraces of the house did not affect the satisfaction and competency levels of the participants. However, in the study published in the journal of Kent Academy, it was asked how they met their need for daylight during the long time we stayed in our homes due to the epidemic. In their answers to this question, 49.3% stated that they sat on the balcony and met their daylight needs (Taşçı, 2020). In the same study, it reveals the lack of a standard balcony/terrace/floor garden structure where they can get fresh air and contact with the outdoors to benefit from daylight. In another study, it was found that people had a balcony or terrace, which they did not pay attention to before, in their search for the ideal home, to breathe, to be counted as an outside/street (Güney & Tulum, 2021).

When the physical environmental characteristics of the houses of the participants were examined according to the objective measurements, it was seen that they were partially related to the KAKS value. Participants living in an area with high KAKS levels are more satisfied with their neighbourhoods after the pandemic than before the pandemic. This situation shows that there may be deficiencies in the explanation of neighbourhood satisfaction with the pandemic process and the KAKS value cannot be

the only parameter in explaining neighbourhood satisfaction. Therefore, more work needs to be done in this regard. Likewise, in order to generalize this relationship between the landfill area and the KAKS, more studies will need to be done with different methods.

When the physical environmental characteristics of the houses of the participants were examined according to objective measurements, it was determined that there was no relationship between the TAKS value and satisfaction. There are also data partially related to Competency level. Participants living in areas with higher TAKS values (duty cycle) thought that their housing was beneficial before the pandemic, but they were less satisfied after the pandemic. The occupancy to vacancy rate can act as social reinforcement, such as green spaces, as well as providing mobility between building groups (Atanur, 2021). Due to the scarcity of these areas, it is normal that the satisfaction of the participants decreased during the pandemic. It was observed that participants living in regions with high TAKS values thought that their homes were bright before the pandemic but were less satisfied with this situation after the pandemic. The occupancy-space evaluations give information on how the building is benefited from natural lighting and ventilation (Gündoğdu et.al., 2019). The high vacant area in building-empty space ratios ensures that the houses are more spacious and brighter. This creates a feeling of spaciousness and spaciousness for users and shows the existence of common areas. As supported by the survey results, the high TAKS ratio negatively affects the climatic comfort characteristics of the residence and its surroundings, which are important in user satisfaction. It was observed that participants living in regions with higher TAKS values thought that their housing was safe before the pandemic, but they were less satisfied with this situation after the pandemic.

When the physical environmental characteristics of the houses of the participants were examined according to objective measurements, it was determined that there was no relationship between the pulling distance and the satisfaction and competency level.

There was no significant relationship between pollution perception and objective measurements because people evaluate their environment more perceptually. For this

reason, although the physical environment does not change, the perception of people changes. The physical environment measurements here were examined based on residential parcels and building blocks. People have considered urban areas rather than residences in the use of gardens and green spaces. With the pandemic, it requires new research that offers such great different possibilities. In the same way, the views of the participants on the use of public space and their relations with the house where they live were examined. Therefore, this result is supported by the analysis of parks and green space condition and physical environmental qualities. A statistical relationship was found between the perception of access to services and its objective measurements. The increase in the distance to the nearest building increased the satisfaction level of the participants with accessibility after the pandemic. Those with longer distances have a higher level of satisfaction with accessibility after the pandemic. Since the participants perceived human density perceptually, the effect of the physical environment was also not observed.

As in most of the experimental and empirical studies, there are a few shortcomings within the scope of this study. When the aspects of the study that need improvement are examined, the inequalities in the number of men and women during the survey may have affected the survey results. The average age of 40.7 indicates that young and old age groups were not included in the study. From another point of view, the survey study coincided with the 2nd period of the pandemic and the pandemic rules were reduced in this period. For this reason, people's opinions may have changed before and during the pandemic. In summary, the method used in this thesis is expected to be an example for future academic research and to be developed.

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APPENDICES

APPENDIX 1: D.E.Ü. Ethics Committee Approval Certificate

HİZMETE ÖZEL



T.C.
DOKUZ EYLÜL ÜNİVERSİTESİ REKTÖRLÜĞÜ
Fen Bilimleri Enstitüsü Müdürlüğü



Sayı : E-59347747-300-200073

21.02.2022

Konu : Etik Kurul Kararı (Begüm SÖZEN)
Hakkında.

Sayın Dr.Öğr. Üyesi Gözde EKŞİOĞLU ÇETİNTAHRA

Danışmanı olduğunuz Şehir ve Bölge Planlama Anabilim Dalı Kentsel Tasarım Yüksek Lisans Programı öğrencisi Begüm SÖZEN'in, "Examination of Physical and Perceptual Qualities of Neighborhoods after Pandemic Period (Pandemi Sonrasında Konut Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi" başlıklı tez çalışması kapsamında yapacağı anketin etik açıdan uygun olduğuna karar verilmiş olup, düzeltilmiş soyadı ile alınan kararın bir örneği yazımız ekinde sunulmuştur.

Bilgilerinizi rica ederim.

Prof.Dr. Okan FISTIKOĞLU
Enstitü Müdürü

Ek: Hukuk Müşavirliği'nin 17/02/2022 tarihli E-87347630-659-197587 sayılı yazı.

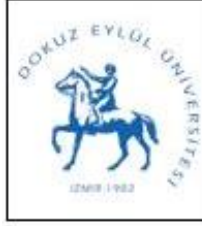
Bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: EC60B0CB-9E5E-4013-B36D-C0B3F44AAE80 Doğrulama Adresi: <https://turkiye.gov.tr/dokuz-eyul-universitesi-ebys>
Adres: Dokuz Eylül Üniversitesi Fen Bilimleri Enstitüsü Tınaztepe Yerleşkesi 35390 Buca/İZMİR Bilgi için: Filiz GÜRSAN
E-Posta: fbe@deu.edu.tr Faks: (232) 453 87 87 Bilgisayar İşletmeni
KEP Adresi : dokuzeyuluniversitesi@hs01.kep.tr



HİZMETE ÖZEL

APPENDIX 2: D.E.Ü. “The Examination of Physical and Perceptuaş Qualities of Neighborhoods After Pandemic Period” Survey Questions



Saygıdeğer Katılımcı,
Bu çalışma Dokuz Eylül Üniversitesi Fen Bilimleri Enstitüsü Kentsel Tasarım Yüksek Lisans Programı'nda yürütülen **Pandemi Sonrasında Konut ve Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi** konulu yüksek lisans kapsamında yapılmaktadır. Çalışma sonucunda katılımcıların kişisel bilgileri ve elde edilen veriler, bu tezde ve tezden üretilebilecek yayınlarda kullanılacak, başka herhangi bir kurum ve/veya kişi ile paylaşılmayacaktır.
Ankete içtenlikle vereceğiniz cevaplar için teşekkür ederiz.

Bu alan anketör tarafından doldurulacaktır.

Tarih: / / 2021

Anket No:

PANDEMİ ÖNCESİ VE SONRASINDA KONUT VE YAKIN ÇEVRELERİNİN NİTELİKLERİNİ DEĞERLENDİRME ANKETİ

Kişisel Bilgiler

- Cinsiyetiniz (Anketör dolduracak): ☐ Kadın ☐ Erkek
- Doğum yılınz:
- Mesleğiniz:
- Sürekli ikametgah ettiğiniz adres (Kapı no, sokak no, apartman no):
(Anketör dolduracak) Sokak: Apartman/Bina No: Daire No:
- Kaç yıldır ikamet ettiğiniz konutta yaşamaktasınız? (İzmir'de yaşıyorsanız cevaplayınız.)
☐ Pandemi öncesi (2020 Mart öncesi)
(Kaç yıl: Kaç Ay:)
☐ Pandemi sonrası (2020 Mart sonrası)
(Kaç yıl: Kaç Ay:)
- Öğrenim durumunuz:
(Yalnızca birini işaretleyiniz.)
☐ İlkokul Mezunu ☐ Ortaokul Mezunu
☐ Lise Mezunu ☐ Üniversite Mezunu
☐ Lisansüstü Mezunu
- Aylık gelir durumunuz:
(Haneye toplam giren)
☐ Asgari ücret altı ☐ Asgari ücret x3
☐ Asgari ücret ☐ Asgari ücret x4 ve üzeri
☐ Asgari ücret x2
- Çocuk sayısı: ☐ Yok ☐ 1
☐ 2 ☐ 3 ve üzeri
- Oturduğunuz konuta sahip olma durumunuz:
☐ Ev sahibi ☐ Diğer
☐ Kiracı
- Konutta kaç kişi yaşıyor:
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ve üzeri
- Konutta beraber yaşayan kişiler:
☐ Sadece eş ile ☐ Eş ve çocuklar ile
☐ Sadece çocuklar ile ☐ Başka aile bireyi ile

APPENDIX 2: D.E.Ü. “The Examination of Physical and Perceptuaş Qualities of Neighborhoods After Pandemic Period” Survey Questions

Mevcut Konuta İlişkin Bilgiler

12. Konut tipi:

(Anketör dolduracak)

- ☐ Apartman Dairesi
- ☐ Müstakil Konut
- ☐ Çiftlik Evi
- ☐ Yalı
- ☐ Yazlık

- ☐ Residence
- ☐ Villa
- ☐ Köşk/ Konak
- ☐ Yalı Dairesi
- ☐ Prefabrik Ev

13. Konutun bulunduğu kat:

(Anketör dolduracak)

- ☐ Giriş altı Kot
- ☐ Zemin Kat
- ☐ Giriş Katı
- ☐ Müstakil
- ☐ Çatı Katı
- ☐ 4-6
- ☐ 11 ve üzeri

- ☐ Bodrum Kat
- ☐ Bahçe Katı
- ☐ Yüksek Giriş
- ☐ Villa Tipi
- ☐ 1-3
- ☐ 6-10

14. Asansör durumu:

- ☐ Evet
- ☐ Hayır

15. Konutun toplam brüt m² alanı:

(Oturma alanı olarak)

- ☐ 0-80 m²
- ☐ 121- 160 m²

- ☐ 80- 120 m²
- ☐ 161 m² ve üzeri

16. Oda sayısı:

- ☐ Stüdyo (1+0)
- ☐ 2+1
- ☐ 3+1
- ☐ 4+0
- ☐ 4+2
- ☐ 5+1
- ☐ 5+4
- ☐ 6+2
- ☐ 6+5

- ☐ 1+1
- ☐ 2.5+1
- ☐ 3.5+1
- ☐ 4+1
- ☐ 4+3
- ☐ 5+2
- ☐ 5+5
- ☐ 6+3
- ☐ 6+6

- ☐ 1.5+1
- ☐ 2+2
- ☐ 3+2
- ☐ 4.5+1
- ☐ 4+4
- ☐ 5+3
- ☐ 6+1
- ☐ 6+4
- ☐ 7 ve üzeri

17. Balkon/teras sayısı:

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3 ve üzeri

18. Banyo sayısı:

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3 ve üzeri

APPENDIX 2: D.E.Ü. “ The Examination of Physical and Perceptuas Qualities of Neighborhoods After Pandemic Period”
Survey Questions

Pandemi Öncesi ve Sonrası Değerlendirme		Size göre ne derece katılıyorsunuz, 1'den 5'e kadar değerlendiriniz. (1 en düşük, 5 en yüksek, 6=Fikrim Yok)																	
		PANDEMİ ÖNCESİ DEĞERLENDİRME									PANDEMİ SONRASI DEĞERLENDİRME								
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
19.	Oturduğum mahalleden memnunum.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
20.	Konutun büyüklüğünden memnunum.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
21.	Oda sayısından memnunum.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
22.	Banyo/tuvalet sayısı yeterlidir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
23.	Balkon/teras sayısı yeterlidir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
24.	Depolama alanları yeterlidir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
25.	Konutun izolasyonu (ısı, yalıtım, nem vb.) yeterlidir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
26.	Elektrik, su, gaz, internet vb. hizmetlerinden memnunum.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
27.	Bana göre oturduğum konut yeterince güneş alır/havadardır.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
28.	Bana göre konutum depreme karşı sağlamdır/dayanıklıdır.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
29.	Oturduğum konut kullanışlıdır/ konforludur/ergonomiktir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
30.	Konutumun bulunduğu binadaki asansörü kullanırım (apartman daireisi ise)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
31.	Bana göre mahallem suç açısından güvenlidir.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
32.	Konutumun bulunduğu çevrede trafik yolları için uygundur.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
33.	Bana göre konutumun bulunduğu çevrede kirlilik (gürültü, çöp vb. kirlilik) yoktur.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
34.	Konutumun yakınındaki yeşil alan ve parklar iyi durumdadır/ bakımlıdır.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
35.	Konut çevresinde bulunan alışveriş merkezi/ dükkanlara sıklıkla giderim.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
36.	Konutun bulunduğu çevrede insan yoğunluğu çok fazladır.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
37.	Konutumun bulunduğu çevrede binalar birbirine çok yakındır/sıkıştır.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
38.	Konutumun bahçesinden memnunum.	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6

APPENDIX 2: D.E.Ü. “ The Examination of Physical and Perceptuas Qualities of Neighborhoods After Pandemic Period” Survey Questions

Pandemi Öncesi ve Sonrası Değerlendirme Önem sırasına göre İLK 3 ÖZELLİĞİ sıralayınız. (1 en önemli, 3 en önemsiz)			
		PANDEMI ÖNCESİ DEĞERLENDİRME	PANDEMI SONRASI DEĞERLENDİRME
KONUT	39. Sağlamlık, izolasyon, depreme dayanıklılık, altyapı		
	40. Güvenlik ve mahremiyet		
	41. Büyüklüğü, oda sayısı, banyo sayısı, balkon sayısı, depo olanakları		
	42. Asansör varlığı, bulunduğu kat		
	43. Bahçe ve yeşil alan kullanımı olması		
	44. Aydınlık ve kullanışlı olması		
MAHALLE	45. Geniş sokaklar, geniş kaldırımlar, yapılar arası mesafeler		
	46. Hizmetlere erişim (iş, okul, alışveriş, eğitim, kamu kurumları vb.)		
	47. Yeşil alan ve parklara yakınlık		
	48. Güzel, bakımlı ve temiz olması		
	49. Sosyal ve komşuluk ilişkileri		
	50. Güvenlik		

51. Başka bir mahalleye taşınmak isterim: Evet
(Nedeni ile yazınız.) Hayır

52. Sizde konutunuzun bulunduğu çevrede sağlıklı bir yaşam için neler yapılmalıdır?
.....

APPENDIX 3: Informed Consent Form

DOKUZ EYLÜL ÜNİVERSİTESİ
BİLİMSEL ARAŞTIRMA ve YAYIN ETİĞİ KURULLARI (DEÜ-BAYEK)
Fen ve Mühendislik Araştırma ve Yayın Etik Kurul Başkanlığı
BİLGİLENDİRİLMİŞ ONAM FORMU

LÜTFEN BU DÖKÜMANI DİKKATLİCE OKUMAK İÇİN ZAMAN AYIRINIZ

Sizi **Begüm Sözen** tarafından yürütülen "**Pandemi Sonrasında Konut ve Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi**" başlıklı **araştırmaya** davet ediyoruz. Bu araştırmaya katılıp katılmama kararını vermeden önce, araştırmanın neden ve nasıl yapılacağını bilmeniz gerekmektedir. Bu nedenle bu formun okunup anlaşılması büyük önem taşımaktadır. Eğer anlayamadığınız ve sizin için açık olmayan şeyler varsa, ya da daha fazla bilgi isterseniz bize sorunuz.

Bu çalışmaya katılmak tamamen **gönüllülük** esasına dayanmaktadır. Çalışmaya **katılmama** veya katıldıktan sonra herhangi bir anda çalışmadan **çıkma** hakkında sahipsizsiniz. **Çalışmayı yanıtlamanız, araştırmaya katılım için onam verdiğiniz** biçiminde yorumlanacaktır. Size verilen **formlardaki** soruları yanıtlarken kimse'nin baskısı veya telkini altında olmayın. Bu formlardan elde edilecek kişisel bilgiler tamamen gizli tutulacak ve yalnızca araştırma amacı ile kullanılacaktır.

1. Araştırmayla İlgili Bilgiler:

- Araştırmanın Amacı: Farklı nitelikler gösteren konut alanlarının, sağlıklı bir yaşam sürülebilmesi için gereken nitelikleri ne düzeyde karşıladığı, kentsel mekan üzerinde yapılan uygulamalarda söz sahibi olan tasarım kökenli ve sağlık kökenli uzmanlıkların görüşleri ile konut alanlarında yaşayan kişilerin görüşlerinin ne düzeyde tutarlı olduğu ve dolayısıyla pandemi gibi bir sağlık krizine karşın söz konusu uzmanlıklar dışındaki kişilerin, yaşam alanlarından ne tür beklentilerinin olduğunu belirlemek amaçlanmaktadır.
- Araştırmanın İçeriği: Pandemi Sonrasında Konut ve Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi
- Araştırmanın Nedeni: Tez çalışması
- Araştırmanın Öngörülen Süresi (Araştırma takviminde öngörülen süredir): Anket çalışmasının yürütülmesi için belirlenen süre aralığı 20.11.2021- 31.12.2021
- Araştırmaya Katılması Beklenen Katılımcı/Gönüllü Sayısı: 206
- Araştırmanın Yapılacağı Yer(ler): **Sahilevleri** Mahallesi, 2. İnönü Mahallesi, **Çankaya** Mahallesi, **Yenikale** Mahallesi /Narlıdere/İZMİR

2. Çalışmaya Katılım Onayı:

Yukarıda yer alan ve araştırmadan önce katılımcıya/gönüllüye verilmesi gereken bilgileri okudum ve katılmam istenen çalışmanın kapsamını ve amacını, gönüllü olarak üzerime düşen sorumlulukları tamamen anladım. **Çalışma hakkında yazılı ve sözlü açıklama aşağıda adı belirtilen araştırmacı tarafından yapıldı, soru sorma ve tartışma imkanı buldum ve tatmin edici yanıtlar aldım. Bana, çalışmanın muhtemel riskleri ve faydaları sözlü olarak da anlatıldı.** Bu çalışmayı istediğim zaman ve herhangi bir neden belirtmek zorunda kalmadan bırakabileceğimi ve bıraktığım takdirde herhangi bir olumsuzluk ile karşılaşmayacağımı anladım.

Bu koşullarda söz konusu araştırmaya kendi isteğimle, hiçbir baskı ve zorlama olmaksızın katılmayı kabul ediyorum.

Katılımcının (Kendi el yazısı ile)

Adı-Soyadı:.....
İmzası:.....

(Varsa) Velayet veya Vesayet Altında Bulunanlar İçin:

Veli veya Vasisinin (kendi el yazısı ile)

Adı-Soyadı:.....
İmzası:.....

Yürütücü
Dr. Özgür Üveysi Gözde Ekşioğlu Çetintahra

Diğer araştırmacı
Begüm SÖZEN

DEÜ-BAYEK Form 3
Y.T. / REV-1 2021/ 01

APPENDIX 4: Survey Additional Information

Araştırmacıların veri toplama araçlarını (anket, ölçekler, görüşme ve gözlem formu, vs.) uygularken herhangi bir sıkıntıyla karşılaşmamaları ve anket yapılan kişinin detaylı bilgi sahibi olabilmesi amacıyla, veri toplama araçlarına EK BİLGİ eklenmesi gerekmektedir.

Aşağıdaki kutucuk ve içindeki bilgi, noktalı yerler araştırmaya göre doldurularak, her veri toplama aracının **ilk sayfasının başına** (her sayfaya değil) eklenmelidir.

Veri toplama araçlarının başına üstte sizin için verilen bilgileri değil, sadece **altta bulunan kutucuğu ekleyiniz**:

LÜTFEN BU DÖKÜMANI DİKKATLİCE OKUMAK İÇİN ZAMAN AYIRINIZ

Sizi yürütücü Dr.Öğr.Üyesi Gözde Ekşioğlu Cetintahra ve diğer araştırmacı Begüm Sözen tarafından saha çalışmalarının uygulanacağı "Pandemi Sonrasında Konut Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi" başlıklı **araştırmaya** davet ediyoruz. Bu araştırmaya katılıp katılmama kararını vermeden önce, araştırmanın neden ve nasıl yapılacağını bilmeniz gerekmektedir. Bu nedenle bu formun okunup anlaşılması büyük önem taşımaktadır. Eğer anlayamadığınız ve sizin için açık olmayan şeyler varsa, ya da daha fazla bilgi isterseniz bize sorunuz.

Bu çalışmaya katılmak tamamen **gönüllülük** esasına dayanmaktadır. Çalışmaya **katılmama** veya katıldıktan sonra herhangi bir anda çalışmadan **çıkma** hakkında sahipsiniz. **Çalışmayı yanıtlamanız, araştırmaya katılım için onam verdiğiniz** biçiminde yorumlanacaktır. Size verilen **formlardaki** soruları yanıtlarken kimsenin baskısı veya telkini altında olmayın. Bu formlardan elde edilecek kişisel bilgiler tamamen gizli tutulacak ve yalnızca araştırma amacı ile kullanılacaktır.

Pandemi Sonrasında Konut Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi adlı proje çalışması kapsamında şahsıma yöneltilen soruları cevaplamayı, yapılan uygulamaların, fotoğraflarının çekilmesini ve ses kaydımın alınmasını kabul ediyorum.

Ad-Soyadı:

İmza:

Tarih:

APPENDIX 5: Expert Survey Questions



Saygıdeğer Katılımcı,
Bu çalışma Dokuz Eylül Üniversitesi Fen Bilimleri Enstitüsü Kentsel Tasarım Yüksek Lisans Programı'nda yürütülen **Pandemi Sonrasında Konut ve Yakın Çevrelerinin Fiziksel ve Algısal Niteliklerinin İrdelenmesi** konulu yüksek lisans kapsamında pilot çalışma olarak yapılmaktadır. Çalışma sonucunda katılımcıların kişisel bilgileri ve elde edilen veriler, bu tezde ve tezden üretilebilecek yayınlarda kullanılacak, başka herhangi bir kurum ve/veya kişi ile paylaşılmayacaktır.
Ankete içtenlikle vereceğiniz cevaplar için teşekkür ederiz.

Bu alan anketör tarafından doldurulacaktır.

Tarih: .../.../ 2021

Anket No:

PANDEMİ ÖNCESİ VE SONRASINDA KONUT VE YAKIN ÇEVRELERİNİN NİTELİKLERİNİ DEĞERLENDİRME PİLOT ANKETİ

1. İletişim için e-posta adresinizi yazınız:

.....

2. İletişim için telefon numaranızı yazınız:

.....

3. Meslek grubunuz nedir?

- ☐ Tasarım Kökenli Meslek Grubu (Mimar, İçmimar, Plancı vb.)
☐ Sağlık Kökenli Meslek Grubu (Doktor, Hemşire, Diş Hekimi vb.)

4. Çalıştığınız kurumu yazınız.

.....

5. Cinsiyetiniz nedir?

- ☐ Kadın
☐ Erkek

6. Doğum yılınız nedir?

.....

7. Yaşadığınız ili yazınız?

.....

8. Yaşadığınız ilçeyi yazınız?

.....

9. Pandemi öncesi görüşünüze göre sağlıklı bir konutta olması gereken nitelikleri yazınız. (En az 3 farklı kriter belirtiniz.)

.....

10. Pandemi öncesi görüşünüze göre sağlıklı bir konut alanında (mahalle) olması gereken nitelikleri yazınız. (En az 3 farklı kriter belirtiniz.)

.....

11. Pandemi sonrası görüşünüze göre sağlıklı bir konutta olması gereken nitelikleri yazınız. (En az 3 farklı kriter belirtiniz.)

.....

12. Pandemi sonrası görüşünüze göre sağlıklı bir konut alanında (mahalle) olması gereken nitelikleri yazınız. (En az 3 farklı kriter belirtiniz.)

.....