

# Investigating the Influential Factors on the Residential Satisfaction of Residents; Case study: Elahieh Residential Complex (Asatid)

Seyedeh Zahra Khalkhali<sup>a\*</sup>- Simon Ayvazian<sup>b</sup>

<sup>a</sup> M.A. of Architecture, Faculty of Art and Architecture, Khatam University, Tehran, Iran (Corresponding Author).

<sup>b</sup> Professor of Architecture, Faculty of Art and Architecture, Khatam University, Tehran, Iran.

Received 25 June 2018; Revised 06 February 2019; Accepted 24 February 2019; Available Online 20 December 2020

## ABSTRACT

In addition to providing shelter, the house is a complex created to provide various services and supply the needs of residents. Paying attention to meet satisfaction is significantly vital while determining the residence location. Residential satisfaction is obtained when a person's needs are met by the place. Since people are the most fundamental factor in architecture, considering residential satisfaction and investigating the influential factors in its improvement is vital for the architects and designers. The criteria for estimating satisfaction in four aspects of physical, human, functional, and contextual were considered in the current paper to investigate satisfaction improvement and its influential factors. Various and influential factors on satisfaction are studied using this comprehensive classification, and studying sub-sets of each one of these aspects includes an extensive range of the effective factors on residential satisfaction. A questionnaire was distributed in the Elahieh Residential Complex to study these factors better. The reason for selecting this complex was their retired and employed academic residents that are gathered in a complex from different parts of Tehran. Therefore, they have different tastes and perspectives. First, satisfaction and its influential factors were studied. Then, the questionnaire was analyzed, and the influential factors on satisfaction were ranked. According to the obtained results, the physical aspects such as green space, accesses, collective space, landscape and view, and the dimensions of the residential units are of the most importance. Then, the contextual aspects (Hygiene and complex maintenance, preferring living in a complex to a single house), human aspects (social interactions and neighborhood), and functional aspects (recreational-commercial services and facilities) are ranked, respectively.

**Keywords:** Residents' Satisfaction, Residential Space, Residential Complex.

\* E\_mail: Zararchitect@yahoo.com

## 1. INTRODUCTION

Housing provides one of the most fundamental needs of humans. Housing is a concept beyond a physical shelter. It includes different kinds of necessary services and facilities for the residents to live better, the quiet long and assured possession right to use it in addition to the physical structure. Nowadays, housing is expected to be more than providing shelter for residence (Mofidi Shemirani, Kamran Kasmyi, & Mofidi, 2016). According to the human need for security and the ability to establish more security by the collective forces than the individual forces, humans like to live in a group as far as it does not violate their privacy. The residential complexes enable the residents to benefit from more and better facilities, including service spaces, and reduction in costs based on sharing it between the households (Jafari & Bikayi, 2014).

It seems that more the satisfaction with an environment, the more people will feel a sense of belonging to that environment, and the more comfortable they will be in that environment. Consequently, satisfaction with an environment can cause positive effects in the process of the relationships that are formed in that environment (Zabihi, Habib, & Rahbarimanesh, 2012, p. 103).

It is required to identify the influential factors on residential satisfaction to improve the quality of life of the residents due to the growing population. The influential factors on satisfaction were identified after conducting the studies in the current research. Then, the questionnaire was distributed among the selected statistical population who experienced living in the residential components and, these components were scored, and their significance on the satisfaction improvement was obtained.

## 2. RESEARCH BACKGROUND

Time and place have a significant effect in forming the concept of satisfaction. What is satisfied the past human might be faded away in the mind of today's human, or even might not have a role, and a set of new values replaces the previous criteria. The spatial and environmental conditions are also influential in the human perception of this concept. This influence is due to the fact that the people's expectations and desires considerably depend on the social and cultural norms of the society, and these features will be different from one community to another and sometimes on a smaller scale, from a neighborhood to another. Satisfaction

with life is emphasized as the key factor in the quality of life. In this regard, four types of life satisfaction can be considered as follows: satisfaction with having, satisfaction with the relationship, satisfaction with being, action, and practice.

Aragones studied the subjective and objective criteria in two physical and psychological levels to evaluate the sense of satisfaction in public houses. The results of this study indicate that neighborhood satisfaction and the relationship with the neighbors have the most impact on the satisfaction with the environment. Seven criteria of space area, social interaction, security, infrastructures, the relationship with the surrounding environment, urban activities, and natural open space have the most impact on forming the sense of satisfaction with the place in Aragones's study (TabiMasroor, Rezaei, & Moayed, 2015, p. 61).

Bonaiuto considers satisfaction to be dependent on four aspects, including:

1. Physical aspects (Appearance of mass and space, environment efficiency, access to space and green space);
2. Human aspects (People and social interactions);
3. Functional aspects (comfort, recreational services, commercial services, transportation services) and
4. Contextual aspects (quality of life, environmental health, and building maintenance) (Bonaiuto, Fornara, & Bonnes, 2006, p. 23).

Measuring residential satisfaction is complicated and depends on various factors. The documents related to the residential satisfaction indicate that understanding satisfaction is different from a person to another and in various physical, cultural, economic, social, and personal conditions. For instance, adding personal features to the analysis enhances the power of prediction. The influential personal characteristics on the satisfaction can, for example, imply the demographic and personal factors, values, expectations, comparison with other settlements, and hope for the future. Various researchers studied the effect of these variables on the perception of satisfaction. The residential satisfaction depends directly on the satisfaction with two criteria of residential units or neighborhood or neighborhood units, and indirectly on the social, cultural, and personal characteristics (McAndrew, 2012).

Residential satisfaction is stated as one of the main criteria in the empirical models of the studies on the quality of the residential environments. The position of residential satisfaction is presented in Table 1 (Amini, Hosseini, & NorouzianMaleki, 2013, p. 3).

**Table 1. Empirical Model of Van Poll (1997) Measuring the Residential Satisfaction**

Residential Satisfaction				
Facilities, Physical Characteristics	Possibility to Stop the Vehicle	Internal Conditions	Facilities Out of the Unit	Costs
- Warehouse space	- Inside the building	- Noise of furniture and appliances	- Public facilities	- Amount of deposit and rent
- Facilities inside the unit	- Outside the building	-The noise of neighbors	- View and landscape	- Maintenance costs
- Number of rooms		- Air pollution	- Natural light	- Heating and cooling costs
- Type of residential unit			- Green space and environment	
- Building's age				

Other studies have also been conducted on the residential satisfaction of residents. The proposed criteria by these studies are presented in summary in Table 2.

**Table 2. Measurement Variables of Satisfaction**

Study	Criterion
(Azizi & Malek Mohammad Nejad, 2008)	The quality of access to the transportation system, satisfaction with the quality of access to the urban facilities and services, satisfaction with the extent and quality of the open space, urban image, environmental criteria, cultural and social criteria
(Rafeian et al., 2009)	Access, view and landscape, physical features, neighborhood relationships, traffic, sense of belonging to a place, pollution, legibility, and density
(Zabihi, Habib, & Rahabarimanesh, 2011)	Access, urban image, the qualitative features of the units, the quantitative features of the units, environment, cultural and social criteria, facilities
(Behzadfar & Ghazizadeh, 2011)	Social interaction, environmental comfort, maintenance, facilities, safety of services, the extent of the natural region, and beauty
(Amini et al., 2012)	Social relations between residents, collective and green space, access to the public services, view, participation of residents, density, and coordination with the texture
(Dadashpour & Roshani, 2013)	Housing facilities, costs and maintenance, physical features, structural and functional features, environmental features, and cultural and social features
(Abedi et al., 2014)	Facilities out of the unit, internal dimensions and conditions of the unit, costs, human and social aspects, functional aspects, environmental aspects, perceptual-semantic quality in the environment, and aesthetic quality and form quality
(Habibi & Marzban, 2017)	Access, view and landscape, physical features, social interaction, hygiene of complex, security and facilities of the complex

### 3. RESEARCH LITERATURE

In terms of psychology, the concept of residential satisfaction consists of two separate concepts of satisfaction and residence. In the Dehkhoda encyclopedia, satisfaction means pleasure and acceptability, and residence is explained as habitat and comfort. Understanding the concept of residential satisfaction requires a proper perception of the residence. Residential satisfaction can be defined as experiencing a sense of pleasure or happiness with life in a residential environment in terms.

A very important factor in evaluating people in determining the desired location for housing is to pay attention to providing residential satisfaction with the location used. Residential satisfaction is a mental reaction to the objective environment. the considerable

point in this part is the proper understanding of the area of the residential environment. A house (residential unit) is merely a physical structure that provides spaces for doing routine activities of an individual in addition to providing shelter. Residential satisfaction is obtained when a user or person's needs are met in that place (Yaran & Behroo, 2017, p. 151).

According to Glaster, Residential satisfaction means a visible gap between the desires and needs of residents and the reality of their current residential context. In another definition, residential satisfaction is considered the experienced satisfaction of a person or a member of a family with their current residential status. Residential satisfaction can also be considered equivalent to the person or a member of a family's satisfaction with their current house (Bahrapour & Modiri, 2015, p. 88).

**Table 3. Influential Factors on Residential Satisfaction and its Sub-Criteria**

<b>Residential Unit</b>	Residential Facilities and Equipment	Unit's location, parking equipment, view to outside, having an elevator, infrastructural equipment, and facility such as water, electricity, gas, sewage, having telephone and internet, lack of rotten pipes, etc.
	Physical features	Type of residential unit, dimensions of the residential unit, land area, number of rooms, quality and age of the units, etc.
<b>Neighborhood</b>	Social interactions	The extent of knowing neighbors, the tendency to have similar neighbors, The extent of neighbors' interference in each other's business, the extent of the relationship with neighbors, the degree of homogeneity and level with the surrounding neighbors, and so on.
	The desired spaces for gathering and the presence of neighbors	Having such spaces help the neighbors improve their residential area through participation in the cultural programs, and to be helpful by giving an opinion on their residential environment plans in addition to the strong social interactions.

(Shahabian & Saeedpour, 2013, p. 37)

### 3.1. Influential Factors on the Residential Satisfaction

According to the studies conducted by Zabihi and Rahbarimanesh, the influential factors on satisfaction are as follows: cultural, environmental, architectural, social, and personal factors. The current research addresses each of these factors in the following.

#### 3.1.1. Personal Factors

Sometimes, taste and pleasure depend on the resident. The personal characteristics that affect the satisfaction include demographic and personal factors, values, expectations, comparison with other settlements, and hope for the future. The mental effects on residential satisfaction are more important than a house in which a person lives.

**A) Age and phase of life:** first of all, the difference in the priority of the settlements depends on the age or the phase of life. The differences in satisfaction related to age are affected by the change in needs, purposes, and social status.

**B) Social status:** residential satisfaction is related to social and economic statuses as well. In general, rich people can provide their considered house better, and therefore, they are more satisfied.

**C) Gender and social role:** gender and social roles also affect residential satisfaction. The couples often disagree about the residence.

**D) Personality and values:** in case of having a choice, the social individuals selected the houses that provide the maximum social interaction.

**E) Wishes for the future:** the fact that a person is waiting for the quality of the house to be improved affects their current residential satisfaction. Therefore, people who expect the quality of their houses to be improved are happier than those who live in the same place.

#### 3.1.2. Social Factors

Interaction with others, acceptable norms, privacy against independence, and security play a significant role in the priorities of the settlement. A significant part of the settlement definition is its social function.

**A) Neighbors:** neighbors might care less than before about residential satisfaction although it is of great importance.

**B) Norms:** when a place is often selected for living, the usual order of the house is considered for the alike people. Privacy and independence are considered significant factors of the elderly to select the characteristics of the living place.

**C) Others' priority:** the other social factor is the group interaction. Many negotiations must be done before purchasing or renting a house for the residents of a house. These negotiations are effective in the satisfaction or dissatisfaction of a person with the residential place.

### 3.1.3. Environmental and Architectural Factors

Environmental and architectural factors have a significant impact on priorities and housing satisfaction. At a glance, the environmental and architectural factors can be divided into access, mass and space, urban image, environment, qualitative and quantitative characteristics of units and facilities.

**A) Accesses:** The vehicle and pedestrian accesses and the way of their separation in the residential complexes are among the influential factors in the people's satisfaction. Pedestrian access in a residential complex must be in a way that the complex not only is habitable for the pedestrian but also, the pedestrian access has more attraction than the vehicle.

**B) Mass and space:** Favorable arrangement of the block, creating the space-centered, and providing high-quality open space, creating an aesthetical combination between building mass and urban space can be one of the influential factors on the people's satisfaction.

**C) Urban Image:** façade unity and cohesion, coordination with the surrounding texture, and façade adornment in the residential complex affect the people's satisfaction.

**D) Qualitative and Quantitative Characteristics of Units:** Separating the public and family privacy, having privacy, having the required privacy to do an activity, having a suitable view, suitable light, adequate ventilation, and access are among the qualitative features that affect the people's satisfaction. Also, the number of individuals per residential unit can be considered as the quantitative features that high density in a house might cause tension and affect the individual's satisfaction (Zabihi et al., 2012).

Strong and Basolo also believe that physical features such as kitchen space, dining place, the number of rooms and bathroom, building morphological configuration, the type of design considering the privacy and qualitative aspects of the house are of the most significant environmental factors affecting the quality of the residential complexes (Abbaszadeh, Gohari, & Askari Rabori, 2016).

**E) Facilities:** Facilities include recreational, service, and sports facilities that can be effective in increasing the satisfaction of individuals (Zabihi et al., 2012).

**F) Green Space:** The green space in the residential complexes can play a significant role in increasing satisfaction with the environment by creating a sense of vitality and pleasure in the space.

#### 3.1.4. Cultural Factors

Houses are different in various parts of the world. The individuals prefer to live in settlements that reflect their culture and complete the behavioral patterns of their culture. Rappaport introduces five main aspects of culture that are influential in the formation of the internal space of the houses, including the manner of

doing main activities, family structure, role of genders, the attitude towards privacy, and the social relations process. The activities are different in various cultures, including sleeping, cooking, and eating. In some cultures, people sit on the floor, and in other cultures, they sit on chairs and behind tables. These differences affect the design, such as the height of the window from the ground, spatial needs, and the position of doors (Ibid, p. 106). The architect, as the creator of the space, plays a significant role in achieving the maximum satisfaction of people. Also, the architect can create a space that provides the personality and social development of people and a comfortable environment for the residents by studying the architectural and environmental factors and analyzing the behavior of humans and proper design. It can be said that when

a place is designed to meet only one activity, it can hardly meet the needs of other activities as well. Since the user and land-use change over time, the designers must seek to design structures in an environment that are suitable for different land uses, allow for deferent interpretations, and provide subjective interventions (Safari & Khomirani, 2015).

One of the most influential criteria to estimate satisfaction is the four components of Bonaiuto (Bonaiuto et al., 2006). The effective factors on satisfaction are divided into four main groups, including 1. Physical aspects; 2. Human aspects; 3. Functional aspects; and 4. Contextual aspects. The sub-criteria of four factors are studied in the following and based on the conducted studies.

**Table 4. Influential Factors on Satisfaction**

Influential Aspects on Satisfaction		Influential Factors on Satisfaction
Physical Aspects	Green space	Appropriate green space
	Accessibilities	Access to urban transportation
		Access to the shopping centers and required facilities of the residents
		Access path to the residential unit (Entrance, stairs, elevator, and corridor)
	Collective space	Meeting space of residents inside and outside of the complex
		Open space for children to play
	Qualitative features of residential units	View and landscape
Building form		
Natural light		
Quantitative features of residential units	Dimensions of residential unit	
	Separating public and private realms in the units	
Human Aspects	Social interactions and neighborhood	Knowing and relations with neighbors
		Neighbors' participation in the public business
Functional Aspects	Recreational-commercial services	Having a space for providing commercial and recreational services in the complex
		Café of restaurant
	Facilities	Sports facilities
Contextual Aspects	Complex hygiene and maintenance	Complex facilities (shooting, elevator, parking lot, and warehouse)
		Complex management
		Complex maintenance and repair costs
		Lack of neighbors' noises
		Lack of disturbing noises outside of other building
Preferring to live in a residential complex to living in a single house		

#### 4. RESEARCH METHOD

The current research used the descriptive research method (non-experimental). The descriptive research method includes a set of methods, the purpose of which is to describe the conditions and phenomena

of the studied case. First, the library method was used in the current study to study some of the influential factors on satisfaction. Then, the influential criteria and variables on the residential satisfaction of residents were determined. These criteria and variables were considered in the questionnaire. The influential criteria

for the satisfaction of people were ranked by analyzing individuals' responses. The scoring has been done based on Table 5.

**Table 5. Score of the Residents' Responses of the Residential Complex**

Satisfaction with the Residential Complex	Score
Very Few	-2
Few	-1
To Some Extent	0
Much	+1
Very Much	+2

#### 4.1. Codifying the Questionnaire Considering the Influential Factors on the Improvement of the Asatid Residential Satisfaction of Residents of Tehran

The twenty-two questions were codified as follows to find the relationship between each aspect and satisfaction, considering the importance of the influential factors on the residential satisfaction of residents. The current research can focus on the effective factors on the improvement of the residential satisfaction of residents by these questions. Then, these factors can be ranked based on the analysis of the answers. The answer of the respondents was graded

based on the Likert Scale, from complete satisfaction to dissatisfaction (the questionnaire is attached).

#### 5. STUDY AREA

Elahieh Residential Complex (Asatid) is located in District 1 of Tehran, District 7 of Tajrish neighborhood. The complex is adjacent to the Russian Embassy from the west, to the residential areas from the north and east, and the Sadr Highway from the south. This complex consists of three nine-floor buildings. Each floor includes eight units, and the complex has 216 units in total. The complex has a parking lot, warehouse, balcony, shorting, elevator, meeting hall, caretaker, and green space.



**Fig. 1. Elahieh Residential Complex (Asatid)**  
(Google Maps, 2018)

#### 5.1. Statistical Population

Determining the sample size using Cochran's formula:

$$n = \frac{NT^2pq}{d^2(N-1) + T^2pq}$$

N= Sample size, three blocks, and nine floors which is 216 residential units in total. The number of residents

per unit has been considered 3. As a result, the statistical sample size is 648.

T= the value of the normal variable of the standard unit which is 1.96 at the confidence level of 95%.

P= the possibility of success in sampling, and q is the possibility of failure. The researchers use the probability method most of the time, and they consider the values of q and p 0.5 in their studies.

d: The permitted error value (error value) is a number between 0.01 and 0.1, which is considered 0.09 here.

n (sample size) is calculated according to the above-mentioned. Then, the sample size (n) is obtained 100.

$$n = \frac{648 \times (1.96)^2 \times (0.5) \times (0.5)}{(0.09)^2 \times (648 - 1) + (1.96)^2 \times (0.5) \times (0.5)} = \frac{648 \times 0.96}{5.24 + 0.96} = \frac{622.3}{6.20} = 100.35 \approx 100$$

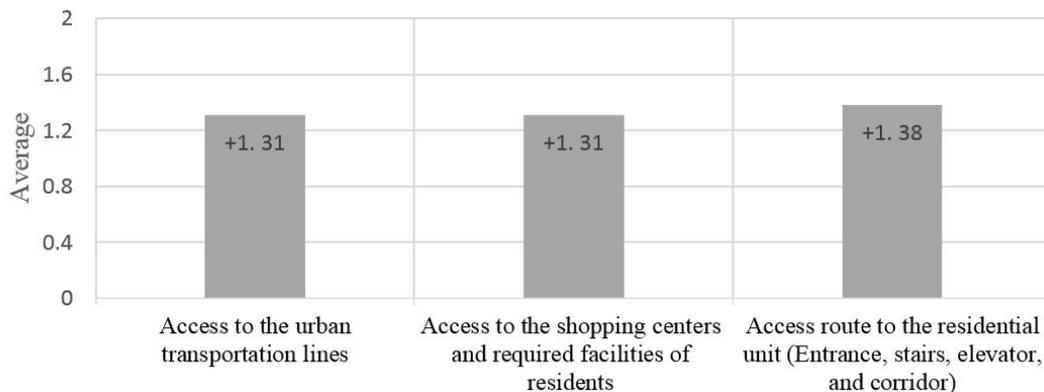
## 6. RESEARCH FINDINGS

The questionnaire was distributed among 100 residents of the Asatid complex, of which 39 were male and 61 were female. The age of 8 respondents was under 20 years old. The age of 58 respondents was between 20-40 years old. The age of 24 respondents was between 40-60 years old, and 10 respondents were over 60 years old. The education level of 20 respondents was lower than the bachelor's degree. 38 of the respondents had bachelor's degree, and 33 had an education level higher than a bachelor's degree. 66 of residents were the owner of the residential units, and 34 respondents

had rental ownership. 37 of the residents were on the primary floors, 30 residents lived on the middle floors, and 24 lived on higher floors. The population of 53 families was less than 4, 21 families were 4, and 26 of the residents were the members of families with more than 4. The influential factors on residential satisfaction are investigated in four aspects of physical, human, functional, and contextual. The physical aspects include components such as green space, accessibilities, collective space, and qualitative and quantitative features of the residential units. Table 6 presents the average score of each of these factors.

**Table 6. Influential Factors on Residential Satisfaction (Physical Aspects)**

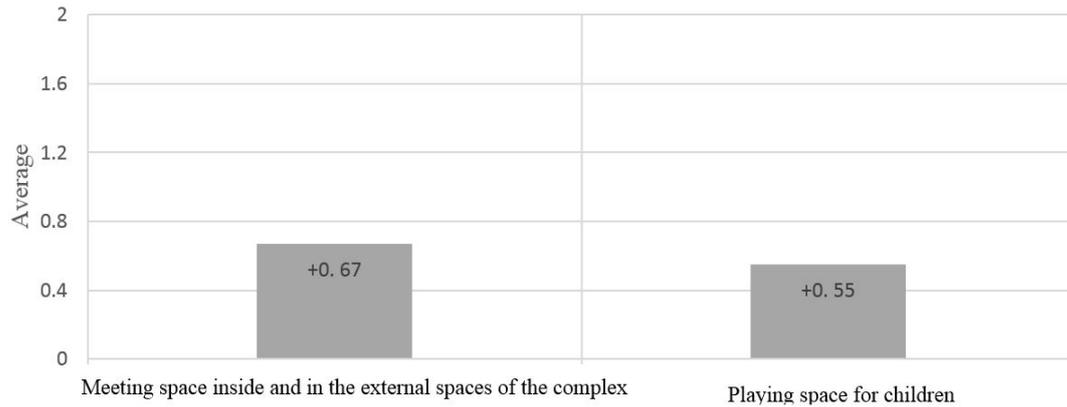
Influential Factors on Residential Satisfaction (Physical Aspects)	Very Little -2	Little -1	To Some Extent 0	Much +1	Very Much +2	Average
Green Space	4	3	7	27	59	+1.34
Access to the Urban Transportation Lines	5	4	11	15	65	+1.31
Access to the Shopping Centers and the Required Facilities of the Residents	2	4	15	19	60	+1.31
Access Route to the Residential Unit (Entrance, Stairs, Elevator, and Corridor)	0	2	13	30	66	+1.38
Meeting Space of Residents Inside and Outside the Complex	6	4	36	25	29	+0.67
An Open Space for Children to Play	6	18	22	23	31	+0.55
View and Landscape	0	2	6	37	55	+1.45
Building Form	0	1	9	29	61	+1.50
Natural Light	0	0	11	20	69	+1.58
Dimensions of the Residential Unit	0	0	11	48	41	+1.30
Separating the Public and Private Realms in the Units	0	1	21	32	46	+1.23



**Fig. 2. Types of Access to the Residential Complex in Terms of the Physical Aspect**

Accessibilities, as one of the influential physical aspects on the satisfaction, include three components of access to the urban transportation lines, access to the shopping centers and required facilities of residents, and access

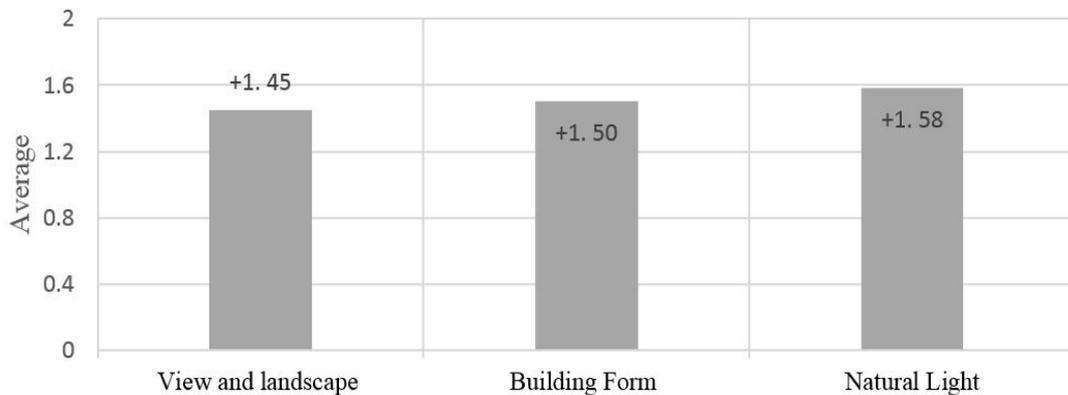
route to the residential unit (entrance, stairs, elevator, and corridor). The access route to the residential unit has the most effect on satisfaction.



**Fig. 3. Investigating the Children Playground Space and Meeting Space of Residents of the Residential Complex**

The collective space, as a space for gathering of the residents and creating a space for social interactions, is of significant importance. The collective spaces include a space for children to play and a meeting space in the

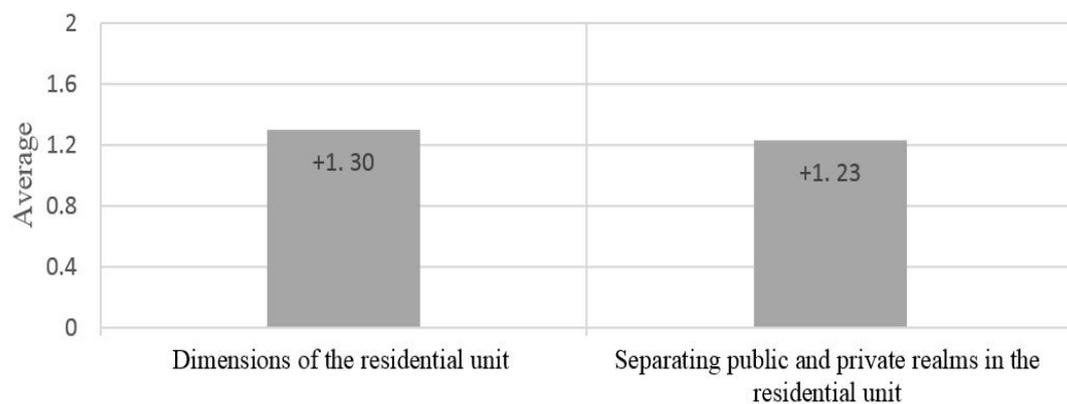
internal and external space of the complex. According to the answers of the respondents, meeting space of the residents improves the sense of satisfaction.



**Fig. 4. Qualitative Features of the Residential Units**

The qualitative features of the residential units are of the most significant in the satisfaction among the components of the physical aspects. The qualitative features include natural light, building form, and view

and landscape. Natural light and building form have the highest score, respectively, in evaluating three components.



**Fig. 5. Quantitative Features of the Residential Units**

The quantitative features of the residential units include the dimensions of the residential unit, and separating the public and private realms in the residential unit. These two factors are of high significance in residential

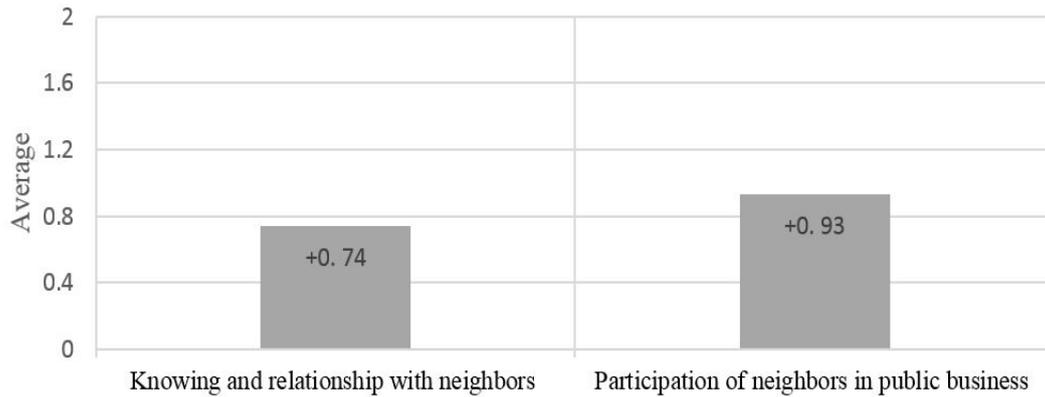
satisfaction. The dimensions of the residential unit have a higher degree of significance than the other factor. Human aspects are among the other influential aspects on the satisfaction that include social relations and

neighborhood. Due to the growing population in the metropolitan of Tehran and the need for housing, the trend of construction of the residential space is towards complex construction (Azizi & Malek Mohammad

Nejad, 2008, p. 28). Knowing neighbors and social relations and interactions are of a significant place in such a condition.

**Table 7. Influential Factors on Residential Satisfaction (Human Aspects)**

Influential Factors on Residential Satisfaction (Human Aspects)	Very Little -2	A Little -1	To Some Extent 0	Much +1	Very Much +2	Average
Knowing neighbors and relationship with them	2	6	32	36	24	+0.74
Neighbors participation in the public business	4	3	17	48	28	+0.93



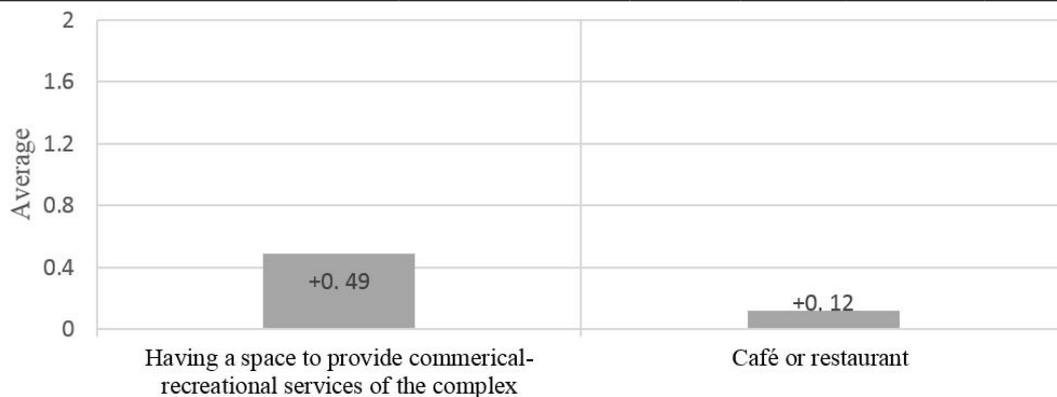
**Fig. 6. The Effectiveness of the Social Interactions and Neighborhood on the Residential Satisfaction**

The social interactions and neighborhood include knowing and relationship with the neighbors and the participation of neighbors in public affairs. According to the answers to the questionnaire, these two factors are of high significance. Neighbors' participation in

the public business is of a higher significance than the other factor. The third aspect affecting residential satisfaction is the functional aspect that includes recreational-commercial services and facilities that are investigated in the following sub-sets.

**Table 8. Influential Factors on the Residential Satisfaction (Functional Aspects)**

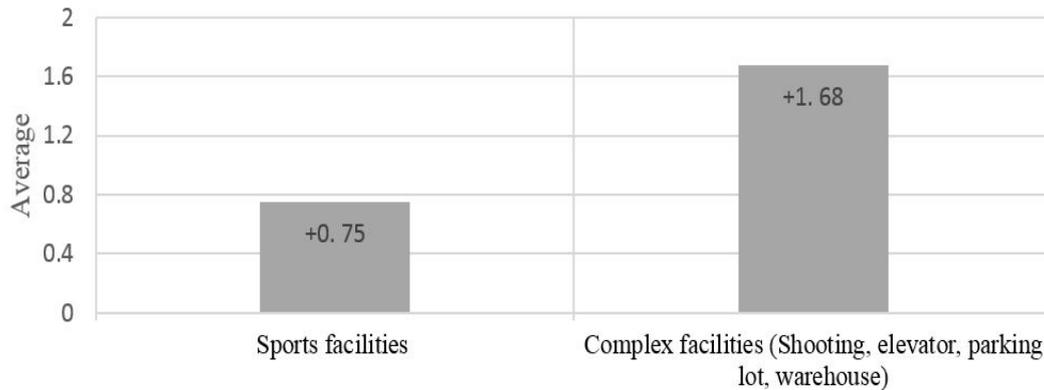
Influential Factors on Residential Satisfaction (Functional Aspects)	Very Little -2	Little -1	To Some Extent 0	Much +1	Very Much +2	Average
Having a space to provide the recreational and commercial services in the complex	11	8	19	45	17	+0.49
Café or restaurant	13	19	26	27	15	+0.12
Sports facilities	3	14	24	23	36	+0.75
Complex facilities (shooting, elevator, parking lot, warehouse)	0	2	5	16	77	+1.68



**Fig. 7. The Effect of Having Recreational-Commercial Services on Residential Satisfaction**

Recreational-commercial services include having a space to provide recreational and commercial services in the complex, café, or restaurant. These two components are of high significance in residential

satisfaction. However, having a space to provide the recreational and commercial needs and services of the residents satisfies the residents more than another factor.



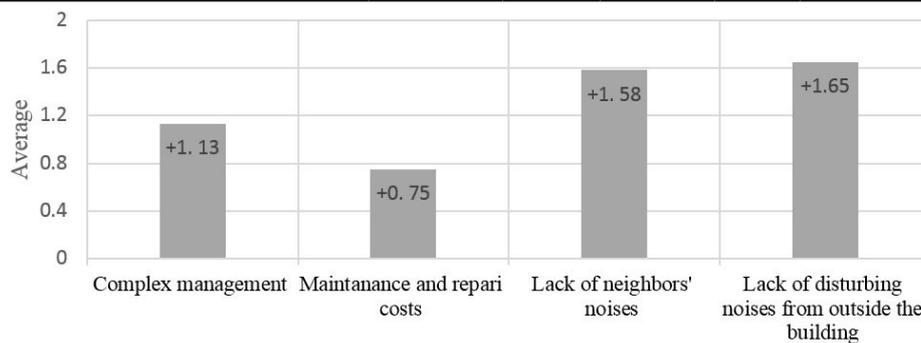
**Fig. 8. Facilities in the Complex as One of the Functional Aspects**

Facilities in a complex include facilities and advantages of a complex and sports facilities. Having shooting, elevator, parking lot, and warehouse are of the highest importance in improving the sense of satisfaction among the respondents.

The last influential aspect on satisfaction is the contextual aspects that include hygiene and complex maintenance and preferring to live in a complex to a single house. The importance of the contextual aspects ranks after the physical aspects.

**Table 9. Influential Factors on Residential Satisfaction (Contextual Aspects)**

Influential Factors on Residential Satisfaction (Contextual Aspects)	Very Little -2	Little -1	To Some Extent 0	Much +1	Very Much +2	Average
Complex management	1	4	19	33	43	+1.13
Maintenance and repair costs	5	2	34	31	28	+0.75
Lack of neighbors' noises	0	3	7	18	71	+1.58
Lack of disturbing noises from outside the building	0	2	5	19	74	+1.65
Preferring to live in residential complex to living in a single house	11	12	16	20	40	+0.66



**Fig. 9. Complex Hygiene and Maintenance**

Complex hygiene and maintenance include complex management, maintenance, and repair costs, lack of neighbors' noises, and lack of disturbing noises outside of the building. Hygiene and maintenance are of the highest significance in residential satisfaction. The effective sub-criterial of this component, the lack of disturbing noises outside of the building, has the highest importance.

Preferring to live in a residential complex to living in a single house is of higher score among the respondents so that 60% of the sample size are satisfied with living in a complex.

## 7. CONCLUSION

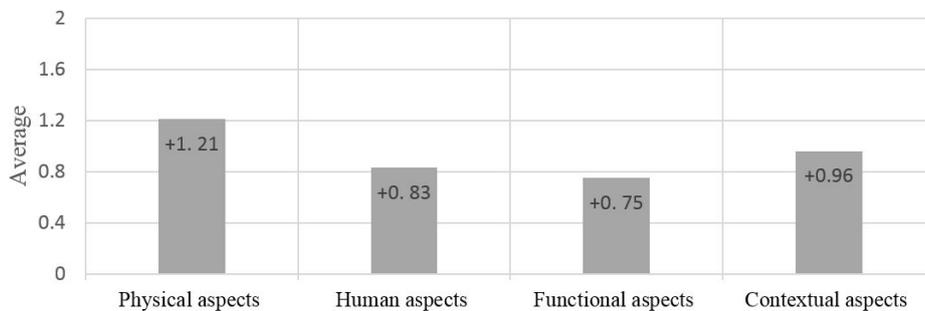
Since people are a key and fundamental factor in architecture and everything depends on them, one of the

most significant factors, their residential satisfaction, is of great importance. Considering the influential factors on the satisfaction of residents and improving their residential satisfaction was the aim of the study. First, the theoretical studies were done on the satisfaction and the importance of its factors. Then, according to these studies, four key factors were selected to study their significance in particular. The influential factors on the satisfaction are divided into four main groups of functional factors, physical factors, contextual factors, and human factor to facilitate the classification of the research materials. The factors then were identified and ranked by codifying a questionnaire and analyzing the answers. The questionnaires were distributed

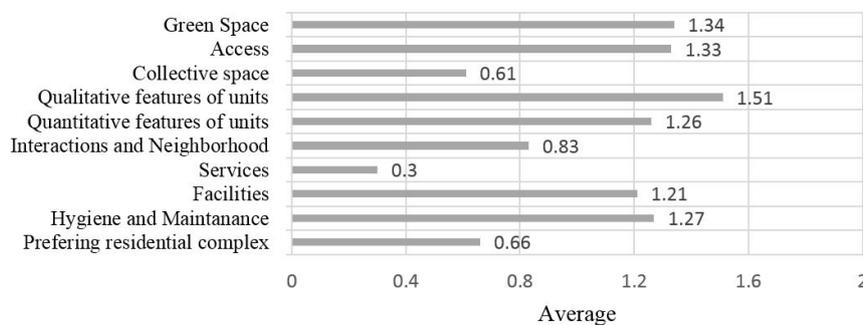
among the residents of the Elahieh residential complex (Asatid). The reason for selecting this residential complex was the heterogeneous texture of its residents. The residents of this residential complex are the academics who gathered from different parts of Tehran and have different perspectives and tastes. They also experienced living in various regions. Finally, the key influential factors on satisfaction were ranked by analyzing the answers, and the most significant factor was the physical aspects. Contextual aspects, human aspects, and functional aspects were then important factors, respectively. The people's opinion about each factor was studied separately in analyzing the answers. Table 10 presents the average of these opinions.

**Table 10. Influential Aspects on Satisfaction**

Influential Aspects on Satisfaction	Influential Factors on Satisfaction	Average	Total Average
Physical Aspects	Green space	+1.34	+1.21
	Accessibilities	+1.33	
	Collective space	+0.61	
	Qualitative features of the residential units	+1.51	
	Quantitative features of the residential units	+1.26	
Human Aspects	Social interactions and neighborhood	+0.83	+0.83
Functional Aspects	Recreational-commercial services	+0.30	+0.75
	Facilities	+1.21	
Contextual Aspects	Hygiene and complex maintenance	+1.27	+0.96
	Preferring to live in a residential complex to in a single house	+0.66	



**Fig. 10. Influential Aspects on Satisfaction**



**Fig. 11. Influential Aspects on Residential Satisfaction**

As presented in Figure 10, the influential factors on the residential satisfaction of residents are as follows in terms of significance, respectively: qualitative features of the residential units, green space, accesses, hygiene, and complex maintenance, quantitative features of the residential units, facilities, social interactions, and neighborhood, preferring to live in a residential complex to a single house, collective space, recreational-commercial services.

According to the obtained results, all the mentioned factors have a positive impact on the residential satisfaction of the residents. However, the qualitative features of units, including view and landscape, building form, and natural light, are of the highest impact on the residential satisfaction of the residents.

## REFERENCES

- Abbaszadeh, S., Gohari, F., & Askari Rabori, A. (2016). Analysis of Environmental Quality towards Satisfaction of Users in Mashhad Housing Complexes. *Geographical Urban Planning Research (GUPR)*, 4(4), 653-671. doi: [10.22059/jurbangeo.2016.62200](https://doi.org/10.22059/jurbangeo.2016.62200). [https://jurbangeo.ut.ac.ir/article\\_62200\\_en.html](https://jurbangeo.ut.ac.ir/article_62200_en.html)
- Amini, S., Hosseini S.B., & NorouzianMaleki S. (2014). A Comparative Study of Satisfaction Evaluation between Residents of Mid-Rise and High-Rise Housings. *ArmanShahr Architecture & Urban Development*, 6(11), 1-13. [http://www.armanshahrjournal.com/article\\_33461.html](http://www.armanshahrjournal.com/article_33461.html)
- Azizi, M., & Malek Mohammad Nejad, S. (2008). A Comparative Study of Two Models of Residential Complexes (Conventional and High-Rise) Case Study: Noor (Seoul) and Tehran Residential Complexes. *Honar-Ha-Ye-Ziba: Memory Va ShahrSazi*, 32, 27-38.
- Bahrampour, A., & Modiri, A. (2015). Study of Relationship between Residents Satisfaction from Living Environment and their Attachment Sense in Kowsar High-Rise Residential Complex. *Honar-Ha-Ye-Ziba: Memory Va ShahrSazi*, 20(3), 85-94. doi: [10.22059/jfaup.2015.56880](https://doi.org/10.22059/jfaup.2015.56880). [https://jfaup.ut.ac.ir/article\\_56880\\_en.html](https://jfaup.ut.ac.ir/article_56880_en.html)
- Bonaiuto, M., Fornara, F., & Bonnes, M. (2006). Perceived Residential Environment Quality in Middle - and Low-Extension Italian Cities. *European Review of Applied Psychology*, 56(1), 23-34. <http://www.sciencedirect.com/science/article/pii/S1162908805000812>
- Google Maps. (2018). <https://goo.gl/maps/og3YC8Nzba4HgSkc9>
- Jafari, A., & Bikayi, T. (2014). Principles of Design Residential Complex. Tehran: Tahan.
- McAndrew, F.T. (2012). Environmental Psychology (G. Mahmoodi, Trans.). Tehran: Vania.
- Mofidi Shemirani, S.M, Kamran Kasmyi, H., & Mofidi, M.R. (2016). Social Housing. Tehran: Royal Architect Science.
- Safari, H., & Khomirani, H. (2015). The Effect of Open Spaces on Residents Satisfaction with Living Space in Residential Complexes. Case Study: Pardisan Residential Complex in Rasht. International Conference on Architecture, Urban Planning, Civil Engineering, Art and Environment; Future Horizons, Looking to the Past, (ICAUCAE). <https://civilica.com/doc/608542/>
- Shahabian, P., & Saeedpour, S. (2013). Studying the Differences of Residential Satisfaction in Old and New Textures (Case study: Khahar Imam and Manzariyh Neighborhood in Rasht). *Haft Hesar Journal of Environmental Studies*, 1(3), 37-48. <http://haftesar.iauh.ac.ir/article-1-59-fa.html>
- Tebi Masroor, A., & Rezaei Moayed, S. (2015). Evolution Urban Satisfaction of the Quality of Living in the Residential Complex; Case Study: Residential Complexes of Hamadan. *Intentional Journal of Urban and Rural Management*. 14(40), 61-80. [http://ijurm.imo.org.ir/browse.php?a\\_id=616&slc\\_lang=fa&sid=1&ftxt=1](http://ijurm.imo.org.ir/browse.php?a_id=616&slc_lang=fa&sid=1&ftxt=1)
- Yaran, A., & Behroo, H. (2017). The Impact of Green Space of High-rise Residential Complex on Residents' Satisfaction, Case Study: A Residential Complex in Tehran. *Armanshahr Architecture & Urban Development*, 9(17), 151-162. [www.armanshahrjournal.com/article\\_44613\\_en.html](http://www.armanshahrjournal.com/article_44613_en.html)
- Zabihi, H., Habib, F., & Rahbarimanesh K. (2012). Study of Relationship between Satisfaction Rate of the Residential Complexes and their Impacts on Human Relations (Case Study of Some Residential Complexes in Tehran). *Hoviatshahr*, 5(8), 103-118. [http://hoviatshahr.srbiau.ac.ir/article\\_1153.html](http://hoviatshahr.srbiau.ac.ir/article_1153.html)

### HOW TO CITE THIS ARTICLE

Khalkhali, S.Z., & Ayvazian, S. (2020). Investigating the Influential Factors on the Residential Satisfaction of Residents; Case study: Elahieh Residential Complex (Asatid). *Armanshahr Architecture & Urban Development Journal*. 13(32), 57-70.

DOI: 10.22034/AAUD.2020.120055

URL: [http://www.armanshahrjournal.com/article\\_120055.html](http://www.armanshahrjournal.com/article_120055.html)



## Appendix 1: Questionnaire (Personal Information)

Gender:	Male <input type="checkbox"/>	Female <input type="checkbox"/>		
Age:	20 years old <input type="checkbox"/>	20-40 <input type="checkbox"/>	40-60 <input type="checkbox"/>	Above 60 <input type="checkbox"/>
Education:	Lower than bachelor's degree <input type="checkbox"/>	Bachelor's degree <input type="checkbox"/>	Higher Education <input type="checkbox"/>	
Ownership:	Personal ownership <input type="checkbox"/>	Rental Ownership <input type="checkbox"/>		
Floor of the residence place:	First floors <input type="checkbox"/>	Middle floors <input type="checkbox"/>	Higher floors <input type="checkbox"/>	
Family population:	Less than 4 <input type="checkbox"/>	4 <input type="checkbox"/>	More than 4 <input type="checkbox"/>	

### Questions Related to the Satisfaction

Questions Related to the Residential Satisfaction of Residents	Very Little	Little	To Some Extent	Much	Very Much
- How much does green space affect your satisfaction with the complex?					
- How much does proper access to urban transportation lines affect your satisfaction with the complex?					
- To what extent does the availability of the shopping center and the necessary supplies affect your satisfaction?					
- As a resident of the complex, how important is the access route to the residential unit (entrance, staircase, elevator, corridor)?					
- To what extent does a meeting space for residents inside and outside the complex satisfy you?					
- How much does having space for children play affect your satisfaction?					
- To what extent does the view and landscape of a residential unit affect your satisfaction?					
- To what extent does the form of the building play a role in your satisfaction?					
- To what extent does the natural light in a residential unit affect satisfaction?					
- How much does the size of a residential unit affect satisfaction?					
- To what extent does the separation of private and public realms in units affect satisfaction?					
- To what extent does the level of knowledge and communication with neighbors affect satisfaction?					
- How much does the neighbors' participation in public affairs affect the residential satisfaction?					
- How important do you think it is to have a space for services, business, and recreation in the complex?					
- To what extent does the existence of a cafe or restaurant as one of the facilities of the complex play a role in satisfaction?					
- To what extent does the existence of sports facilities increase the residential satisfaction?					
- Are the facilities in the complex such as shooting, elevator, parking and storage, effective on the satisfaction of its residents?					
- How much does the presence of management in a residential complex affect satisfaction?					
- How important are repair and maintenance costs?					
- To what extent can the absence of neighbors' noise play a role in satisfaction?					
- Does the absence of annoying noises outside the building affect the satisfaction of residents?					
- To what extent do you prefer living in a residential complex to living in a single house?					