The Effect of Housing Density on Residents;
Case Study of some Residential Complexes in Tehran, Iran

Fatemeh Mortezaie Manesh[1]*, Kamal Rahbari Manesh[2], and Mostafa Kiani[3]

[1]Master of Architecture, Department of Architecture, Science & Research Branch, Islamic Azad University, Qazvin, Iran,
[2]Assistant professor, Department of Architecture, Science & Research Branch, Islamic Azad University, Qazvin, Iran,
[3]Associate professor, Department of Architecture, university of Architecture and Urbanism, Tehran, Iran,

ABSTRACT

Designing based on environment is meeting the physical psychological needs and of individuals in area to continue life in area. In this study, with the aim of providing more efficient and healthier environment and residential areas as well as satisfaction of residents from living complexes, the effect of housing density of residential apartment complexes, as one of the human - environment factors on peace and satisfaction of residents and the child growth is examined. With regard to the interdisciplinary approach to research, the field of environmental psychology to explain the hypothesis and test it properly diagnosed. This study seeks to answer the question: "does the residential density of apartments have any effect on comfort and satisfaction of users and their mental and physical growth? Research methodology is a kind of description of comparative correlation research. The results of ANOVA and Pearson correlation coefficient indicates that observing the proper residential density can lead to the user's consent and has no impact on children's anxiety.
KEYWORDS: Environment Psychology, Residential Complex, Residential Density, Satisfaction With Housing, Child Anxiety.

1.   INTRODUCTION

By developing human communities and changing in people's way of life and living, the attention of architects, designers and planners have increased to the quality of built spaces and environments, and the role of designing as a tool for shaping the environment and meet the expectations and needs of humans being became more important therefore a lot of research have been done on how built environment or space can have an interplay on human mind and behavior. New approaches of house planning and designing are based on comprehensive interdisciplinary. These approaches which have been considered in recent decades in many different countries of the world pay more attention to the coordination of humanitarian and environmental aspects of design. On the other hand, the problems of life in big cities, made inevitable the use of higher density and planned and coordinate design sets. Regarding to the human factors involving in planning and designing can improve lives in residential complexes [1].

In this study, residential density has been examined as one of the main human and environmental factors affecting on formation of residential complexes. In Islam, house is represented as a place to communicate with family members and strengthening family relationships. Also, holly prophet (peace be upon him) knows having a good and spacious home as a sign of joy and happiness [2]. But because of population growth, high prices of land and limitation of suitable land the housing developed vertically. The inability of individuals to achieve the desired position makes each person to suffer the most stress to adapt to the environment. Thus, with limitation of places, anxiety, depression, impatience, etc. emerged. One of the consequences of living in small apartments is feeling of congestion and the need to privacy. Density in housing and living environment aSWffects a large extent of family member's interactions. Since humans differ depending on the size, capacity, physical and mental power so, there is a difference between affecting and impressionability of density on each of us. For example, children have smaller capacity than adults to change their world and environment [3]. Children compare to adults have more and deep impressionability due to their psychological and physical limitations and in turn, have less affecting to their environment and thus they are necessarily subject to environmental conditions more than adults [4].

Lack of affordable housing, lack of a specific place for children at home and outside in its all dimensions, lack of urban facilities such as health, recreation and a variety of social and educational deprivation and many other factors can damage directly the people [5]. As mentioned, children are more sensitive to environmental stress than other members. Health and education for children can result in healthy and happy society. Healthy children constantly show curiosity on various issues and are always interested to test new ways to solve the problems. Children anxiety cause that he could not learn new behaviors and appropriate to different situations [6].

Corresponding author: Fatemeh MortezaieManesh, Master of Architecture, Department of Architecture, Science & Research Branch, Islamic Azad University, Qazvin, Iran; Email: f.mortezaie@gmail.com

2. REVIEW OF LITERATURE

The life of psychology is not more than five or six decades. During this period, researchers achieved many results about designing environment and its effect on human behavior. Among this, we can refer to Irwin Altman. Altman [7] represents in his book, environment and social behavior, an analysis of the 6 concept of privacy, overcrowding, territory and personal space. In this book he examines human social behavior in relation to the physical environment and the use of the environment in the process of social interaction, particularly on the key concepts of privacy, personal space, territory and overcrowding were studied. The content of this book has been adapted from the research and current theories in several domains. The domain of environment and behavior is inherently resulted from multi-disciplinary [7].

Environmental psychology can lead to use the knowledge of environment and behavior "in real world" and to solve the practical problems of designing environment. The relationship between people and their residential environment is an important issue in environmental psychology, because the residential environment is one of the most prominent places in the history of mankind. Thus, many researchers have tried to discover the factors affecting on user's assessments on residential environment satisfaction. In general, in internal and external investigations, factors affecting on residential satisfaction were evaluated at two physical and social levels. The most important variables included beauty, extent and natural area, social interaction, safety, services and facilities, maintenance and environmental comfort. In addition to these factors, the characteristics of population are also effective on their satisfaction of environment [8].

House or living space should have two applications in two aspects; one of them is related to physical aspects like creating an environment with good access, good facilities, good temperature, good pressure, humidity, light and so on. Another aspect is related to meeting the spiritual needs of people like creation of spaces suitable for lifestyle and culture and social customs. If these two conditions combined with the most complete way, they can create a sense of satisfaction and provide a degree of personal satisfaction [9]. The building conditions and event the number of floors, quality and appearance of apartments including enough light, health, the position of tranquility, noise pollution, adjacent applications, access situation, physical exhaustion and the overall quality and safety of residential complex impact on life quality and safety [10].

Many studies have shown that living in apartments is not suitable place for the growth of children and the progress and prosperity of adults. Living in apartments is associated with suffering and affliction in this age group. These include the retardation of mobility skills, respiratory diseases, violence and unusual neurological disorders, insomnia, loss of social skills and disorder in playing [11]. Also, "Research conducted by the Housing Agency of America Federal Government showed that unsuitable houses are important factors in all forms of social deviations especially juvenile delinquency. The houses that deviator children are dependent to them are usually inappropriate place and they don't have any facilities" [10].

Murray deal with the issue of housing in another dimension. The main hypothesis of his study is that, children of families who do not have adequate housing space show behavioral abnormalities and they face to failure and lack of success in terms of educational attainment. Aggressive and offensive behaviors as well as the insecurity are mentioned as the characteristics of this group of children. Murray conducted his study on children of fourth and fifth grade of primary school. The children's aggressive behavior and feelings of safety subjects was measured by psychological tests. Then, the index of density (the ratio of family members to the number of rooms) and an index of "Family Interaction density" were calculated. The research shows that children who do not have adequate housing space reveal more aggressive and nervous behaviors. These groups of children are more unsuccessful in terms of educational attainments and fell less secure compare to those children who have sufficient space in their house [12].

Li [13], examined the effect of house designing factors on educational achievements of children in Hong Kong. The results show that, the effect of house and type of living in this city is not like other places. For example, children of private housing and social housing do not show significantly different behavior at school and when children have their own private space in their homes, the size of housing units is not important and it can compensate the lack of space in most Asian cities that have dense and compact development [13].

Behrouzfar et al. [3], examined the relationship between the density adjustment in housing and educational status of the primary school children in an internal research. However, in this project, density was examined only by defining the ratio of the number of people living in a house to the number of rooms in a house. The results showed that the density of people in the house has no direct negative impact on the educational status of children.

3. Research body

The study aims to provide efficient and healthier residential environment as well as the satisfaction of the residents of the complex in the domain of psychological environment. This paper examines the effect of residential density as main causes of human and environmental focuses on users that the child development has been examined in the case of children and the satisfaction of housing have been examined for adults. This study is going to answer this question: "does residential complexes density have any impact on tranquility and satisfaction of users and their physical and mental development?" and based on these assumptions, following hypotheses have been developed:

1. There is a relationship between children's anxiety and density of apartment residential complexes (in public and private sector).
2. Observing proper density in the private sector leads to life satisfaction is complexes.

In this regard, after understanding the concept of density from the perspective of the study, a review of the residential satisfaction and optimal conditions for children development has been done and aforementioned factors were examined in "Apadana", Ekbatan" and "Shahid Fakuri" residential complexes. The research method is descriptive and comparative correlative and the library resources were used to describe the criteria and survey studies were used for analyzing the principals by questionnaire and field observations. The population of this study is: residents of "Apadana", "Ekbatan" and "Shahid Fakuri" residential complexes located in district 5 in Tehran and children 8 to 11 years old who live in these residential complexes. The method of sampling in this study is stratified sampling. Data were collected through library studies and survey. The instruments used for data collection was researcher-made questionnaire and Spence anxiety test for children and observation. It should be noted that the statistical processing of the score of the questionnaires was performed using SPSS software.

In this study, the meaning of residential complexes is complexes that are planned, designed and performed together and at the same time in populous cities of Iran under different terms such as mass housing such as buildings that are constructed with an aggregated mode in a separated piece. In these complexes, usually the ownership of public and semi-public places is joint ownership and their use is subject to special and collective regulations. The density in this study is the size of residential units and the ratio of number of people living in a house to the number of rooms in private sector.
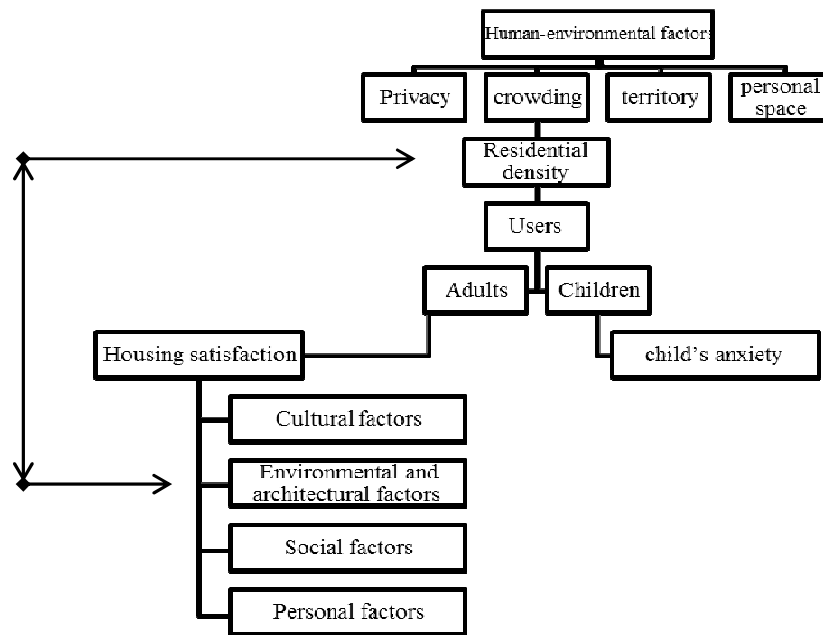
Fig. 1. Theoretical model of the study. Source: authors.

3.1. Crowding

"Crowding" and "overcrowding" are today's social issues that are important as well as energy crisis and environmental pollution. Some believe that crowd leads to physical and physiological and psychological damages and these damages will be appeared in form of disease, aggression, suicide, crime and other social pathology. Some others believe that crowd is not the result of huge increase in the number of people, but the result of mutual interaction between the size of population and characteristics of social structures [7].

In short, crowd occurs when an individual or group establish too good mutual relations with others, it means the acquired privacy be less than optimal privacy [7].

3.2.Density

Various definitions of density can be presented. According to Churchman [14], and Alexander [15], measurement and presenting a global standard for measuring the density is a difficult task due to its complex characteristics, differences in the expression and its use in different countries and differences in policies related to it. But, two conventional methods in this way included: population density which is determined based on the number of residents per hectare and residential density which is determined based on residential units or the area of residential floors in a given area. Two concepts of "crowding" and "density" are closely linked to each other and some psychologists have applied these two concepts interchangeably [12]. The distinction between crowding and density can be noted that crowd is a personal and subjective reaction not a physical variable. Crowding is a motivational state that often leads to a targeted behavior to reduce discomfort. Crowding is resulted from the lack of space but density is a physical quality, it doesn't have psychological concept and it refers to the number of persons in each unit [7]. Although the population density has a

main role in development of the crowd feeling but this feeling is a subjective phenomenon, because it is under the influence of psychological factors on the one hand and environmental and cultural factors on the other hand [12].

Altman [7], based on Daniel Estockols, suggests that density is the necessary condition of crowding, but not sufficient condition. In other words, the increase in the number of persons in space unit is the main conditions in crowd feelings but it always does not lead to the creation of this feeling.

In explanation of various densities, this point is notable that there are different approaches to the analysis of density. The most general meaning of density is the number of people in each unit. In sociological research conducted since the 1920s, some of the indicators of density have been attributed to the social behavior. These indicators include: the number of people in the city, the number of persons per census, the number of people in residential units, the number of buildings in the neighborhood and so on [7].

3.3.Satisfaction

The concept of satisfaction which is defined as a function of the success and satisfaction of one's physical and psychological needs is a concept derived from the theory of motivation and psychological needs that cover all fields and aspects of life. In fact, the concept of satisfaction refers to a wide range of interest and utility to meet the basic or high needs of human beings. One of the aspects of life satisfaction is the satisfaction with the residential environment as well as residential satisfaction. Today, with the development of human society and changing the lifestyle and living of the people, the focuses of planners and designers on the quality of the spaces and built environment increased to provide residents satisfaction [14].

One of the missions of designers and architects is to create the appropriate relationship between human beings and their around environment. To achieve this, the creators of space should have a good understanding of human behavior in different environments, so that they strengthen the relationship between human and places [8].

 In architecture, the people are the most basic element therefore the meaning of each architecture work depends on how this work can provide comfort, peace and satisfaction of people and how much is it efficient in responding their needs [9].

People are always looking for following subjects in housing:

1. Safety and stability, 2. Suitable price and cheap, 3. Beauty and elegance, 4. A house that provides physical and mental comfort, in other words it should be in a harmony with biological and behavioral patterns of course these several factors usually have rarely come together, because a cheap and affordable house doesn't have safety, utility and beauty or vice versa. Thus, throughout history there has been less time in which human beings truly have the full satisfaction of their housing and usually this satisfaction is partial in the most cases [9]. Satisfaction of residential environments depends on the amount of satisfaction of both residential units and neighborhood or neighboring units directly and depends on personal, cultural and social characteristics of person indirectly [15].

Based on the previous investigations, the effective factors in creating satisfaction are presented as follows:
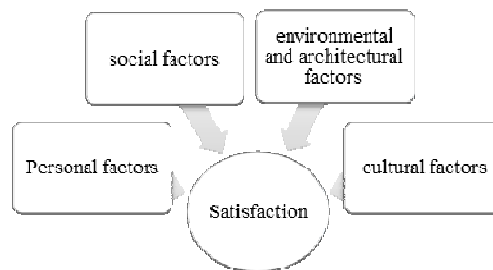
Fig. 2. Factors contributing to satisfaction, [9].

In this study the effect of residential density is concerned as one of the architectural and environmental factors on the consent of the people.

3.4.Children's development and their needs

Residential areas should be able to provide necessary conditions for personal growth of each individual including small or big persons. Today, our residential areas do not have the ability to accept and respond to the needs of our children and this allows children to stay away from some useful experiences and events, while investigating their age and mental state prove their needs to these experiences. About the interaction between the environment and the role of environmental factors in physical and mental development of children it should be noted that: "the core of all development theories is interaction or mutual influence. All psychologists endorse this belief that psychological phenomena and their changes are the result of the interaction between the human organism and the environment. The only difference in views is that what factors are emphasized" [4].

Also, Abraham Maslow believe that "the formation of indifferent character which does not have any sensitivity and curiosity about their environment, is not involved in life, and has no appetite for the living resulting from unsuccessful

and failure to satisfy their childhood motivated and enthusiastic curiosity. Gordon Allport after expressing the continuity of the process of self-evolution confirms that favorable circumstances and experiences of childhood are important in the development of a healthy personality. But explains that a healthy and trained personality try to act independently of past tensions in different stages of life" [4].

From the above we find that the interaction between the child and the environment is of paramount importance so that this interaction includes the formation of personality and physical and intellectual development of children. Therefore, it is clear that negligence in establishing appropriate situation and lack of understanding of the psychological needs of children can be caused irreparable damage to their future.

High poverty, lack of a suitable house, lack of a specific place for children at home and outside in all its aspects, lack of urban facilities such as health, recreation and a variety of social and educational deprivation are all factors that are involved directly in harm to a human. Mental health is an equivalent category with physical health and its negligence leads to many diseases that are caused to weed out the most important part of human capabilities [5].

3.5. Children's anxiety and its consequences

Based on Rolmy's point of view, "anxiety is the fear of jeopardizing a person's fundamental values of life". Anxiety may be considered as a kind of inner pain that causes excitement and disruption in the balance and since human constantly tries to make balance, so it can be said that anxiety is a very strong stimulant [6].

The consequences of anxiety in children can be noted as follows: anxiety is one of the main causes of repression of emotions and preventing the learning. Healthy children are happy and joyful and constantly show curiosity on various issues. He is always interested in new ways to solve test problems. Unhealthy child is sad and timid and have fears in curiosity. The reason is that he is anxious. The incomplete learning with immutable and insufficient emotional growth resulted from anxiety [6].

6.Questionnaires

The researcher-made questionnaire has been set up into two parts that include closed questions aimed at assessing the basic variant of the study and the discovery of its truth in the views of the experts (professors in architecture and psychology), respectively. The first part includes 2 questions which are related to the assessment of residential density in the private sector and the second part examined the amount of residential satisfaction in the form of seven questions. To measure anxiety, the Spence children anxiety test (parent version) is used. This test consists of 45 items and has an open question designed for ages 8 to 15 years to evaluate the 6 sub-scales: 1. Panic and fear of open spaces, 2. Separation Anxiety, 3. Fear of physical injury, 4. Social phobia (Phoebe), 5. Compulsion-intellectual fear and 6. General anxiety [16], To summarize the questions, 2 subscales (panic and fear of open spaces, compulsion-intellectual fear) have been removed. First, the questionnaire of the study has been performed in a small sample (pilot study) and in a small scale. Then, the main questionnaire distributed in three large residential complexes in intended scale. The reliability of the test was examined using Cronbach's Alpha. The obtained Alpha value indicates the reliability of the research instruments.

Table 1. Satisfaction scale data of location, Source: Authors

Case Processing Summary			N	%
Cases	Valid		23	100.0
	Excludedª		0	.0
	Total		23	100.0
a. Listwise deletion based on all variables in the procedure				

Table 2. Satisfaction scale data of location, the reliability of research instrument, source: Authors.

Reliability Statistics	
Cronbach's Alpha	N of Items
0.780	8

Table 3: The anxiety scale data, source: Authors.

Case Processing Summary			N	%
Cases	Valid		23	95.8
	Excludedª		1	4.2
	Total		24	100.0
a. Listwise deletion based on all variables in the procedure.				

Table 4: Anxiety scale data, the reliability of research instruments, Source: Authors.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

RESULTS

In this section, after describing the data based on the demographic characteristics of the sample, indicators of central tendency and distribution of the data provided and to test the hypotheses of the study, one-way ANOVA and Pearson correlation coefficient was used.

Data description

Table 5, represents the distribution and the percentage of the sample based on the father's education.

Table 6, represents the distribution and the percentage of the sample based on the mother's education.

Table 7, represents the distribution and percentage of sample based on father's job.

Table 8, represents the distribution and percentage of sample based on father's job.

Table 9, represents the distribution and percentage of sample based on the number of children.

Table 10, represents the distribution and percentage of sample based on the density.

Indicators of central tendency and distribution of anxiety scores and housing satisfactions are presented in Table 11 with the separation of residential cities.

The indicators of central tendency and distribution of anxiety scores and housing satisfactions are presented in Table 12 in terms of density.

Table 5. The distribution and the percentage of the sample, source: Authors.

Father's education	number	percentage	Congestion %
Under the diploma	13	4.1	4.1
diploma	94	29.9	34.4
Associate of arts	39	12.4	46.5
license	114	36.3	82.8
Master of arts	40	12.7	95.5
doctorate	14	4.5	100
Total	314	100	

Table 6. The distribution and the percentage of the sample, source: Authors.

Mother's education	Number	percentage	Congestion %
Under the diploma	10	3.2	3.2
diploma	138	43.9	47.7
Associate of arts	40	12.7	60.6
license	104	33.1	94.2
Master of arts	18	5.7	100
Total	310	98.7	
Removed	4	1.3	
total	314	100	

Table 7. The distribution and the percentage of the sample, source: Authors.

Father's job	Number	Percentage	Congestion %
Employee	220	70.1	71
Retired	6	1.9	72.9
Free	84	26.8	100
Total	310	98.7	
Removed	4	1.3	
Total	314	100	

Table 8. The distribution and the percentage of the sample, source: Authors.

Mother's job	Number	Percentage	Congestion %
Employee	88	28	28.5
Housekeeper	221	70.4	100
Total	309	98.4	
Removed	5	1.6	
Total	314	100	

Table 9. The distribution and the percentage of the sample, source: Authors.

Number of children	Number	Percentage	density %
1	88	28	28
2	181	57.6	85.7
3	43	13.7	99.4
4	2	6	100
Total	314	100	

Table 10. The distribution and the percentage of the sample, source: Authors.

Congestion	Number	Percentage	density %
Appropriate	166	52.9	52.9
Inappropriate	110	35	87.9
Very good	38	12.1	100
Total	314	100	

Table 11. Indicators of central tendency and distribution, Source: Authors.

Dependent variable	Residential complexes	Number	Mean	Standard deviation	Min	Max
Anxiety	Apadan	84	13.17	6.46	1	32
	Ekbatan	106	17.87	9.40	3	42
	Fakouri	124	17.10	8.71	2	35
	Total	314	16.31	8.61	1	42
Housing satisfaction	Apadana	82	17.49	3.54	9	23
	Ekbatan	104	16.96	4.08	9	24
	Fakouri	124	15.58	3.87	6	24
	Total	310	16.55	3.93	6	24

Table 12. Indicators of central tendency and distribution, Source: Authors.

Dependent variable	density	Number	Mean	Standard deviation	Min	Max
Anxiety	Appropriate	166	16.01	8.52	1	41
	Inappropriate	110	16.69	8.84	3	42
	Very good	38	16.50	8.53	6	42
	Total	314	16.31	8.61	1	42
Housing satisfaction	Appropriate	165	15.69	4.025	6	24
	Inappropriate	107	17.14	3.59	8	24
	Very good	38	18.61	3.47	11	24
	Total	310	16.55	3.93	6	24

Inference statistical data

In this section, to test hypotheses and answer research questions of the study, one-way ANOVA and Pearson correlation coefficient was used.

Research hypotheses: observance of density in private sector leads to housing satisfaction and reducing anxiety in children. To test this hypothesis, one-way ANOVA was used and its results presented in Table 13 and 14. Results of Table 13 shows that the variance between anxiety scores and housing satisfaction is equal.

Table 13. Results Levine test for equality of variances, Source: Authors.

Dependent variable	Levin's statistics	Degree of freedom of hypothesis	Degree of freedom of error
Anxiety	0.215	2	311
Housing satisfaction	1.900	2	307

Table 14. Summary results of one-way ANOVA for testing hypothesis, source: Author.

Dependent variable	Change resource	Total square	Mean square	Degree of freedom	F
Anxiety	Intergroup	32.665	16.33	2	
	Within the group	23213.98	74.64	307	0.219
	Total	23246.650		309	
Housing satisfaction	Within the group	319.56	159.78	2	
	Intergroup	4473.213	14.57	307	10.96**
	Total	4792.774		309	

**P<0.01

Statistical results

1. Observing proper congestion in private sector, leads to housing satisfaction with regard to P<0.01 and F (2 and 307) = 10.96.

2. Observing the appropriate density in the private sector does not lead to reduce children's anxiety with regard to P>0.05 and F (2 and 307) = 0.219.

With regard to the significance of the effects of observing density on housing satisfaction in private sector, and not significance of this variable on anxiety, the only Post Hoc test results to determine the differences in housing satisfaction has been reported in the Table 15.

Table 15. The results of Post Hoc test, source: Authors.

Dependent variable	Groups		Mean difference	error of estimate
Housing satisfaction	Inappropriate appropriate		0.474	-1.449
	Very good		0.687	-2.914**
	Appropriate	very good	0.721	-1.465

**P<0.01

Based on the results of the Post Hoc test it can be conclude that the housing satisfaction is only different between appropriate and inappropriate groups but there is not any statistically significant differences between inappropriate-appropriate and appropriate-very good groups.

Secondary research hypothesis: type of residential complexes influence on anxiety and satisfaction of housing (compared settlements). To test this hypothesis, the ANOVA was used and its results reported in the Table 16 and 17.

Results of Table 16 show that the variance scores of the housing satisfaction are equal between the groups (type of settlements). But the variance of anxiety scores is not equal between the groups and rejecting this hypothesis is not serious.

Table 16. Results Levine test for equality of variances, Source: Authors.

Dependent variable	Levin statistics	Degree of freedom of hypothesis	Degree of freedom of error
Anxiety	3.65*	2	311
Housing satisfaction	0.615	2	307
Open space satisfaction	1.37	2	307

*P<0.05

Table 17. Summary results of the one-way ANOVA related to hypothesis, Source: Authors.

Dependent variable	Change resources	Total square	Mean square	Degree of freedom	F
Anxiety	Within group	1163.99	581.99	2	
	Inter group	22082.65	71.005	311	8.19**
	Total	23246.66		313	
Housing satisfaction	Within group	206.247	103.123	2	
	Inter group	4586.53	14.940	307	6.903**
	Total	4792.77		309	

**P<0.01

Statistical results

1. The type of residential settlements effect on child's anxiety, $P<0.01$ and F (2 and 311) = 8.19.
2. The type of residential settlements effect on housing satisfaction, $P<0.01$ and F (2 and 307) = 6.903.

Regarding to the significance of type of residential settlements on anxiety and housing satisfaction, the results of Post Hoc test is presented in Table 18 to indicate the differences between two groups

. According to the results of Table 18, children's anxiety levels between two residential settlements of Apadana-Ekbatan and Apadana-Fakouri is different in the case of statistics but there is not statistical difference between Ekbatan and Fakouri. According to the Statistics of Table 11, it can be concluded that the average anxiety in children in Apadana complex is lower than Ekbatan and Fakouri. Also, housing satisfaction of Apadana-Fakouri and Ekbatan-Fakouri is statistically different but it is not different between Apadana and Ekbatan. According to the results of Table 11, it can be concluded that the housing satisfaction in Apadana is more than Fakouri and Ekbatan.

Table 18. The results of Post Hoc test, Source: Authors.

Dependent variable	Groups		Mean difference	error of estimate
Anxiety	Apadana	ekbatan	1.231	-4.701*
		Fakouri	1.191	-3.930*
	Ekbatan	fakouri	1.115	0.771
Housing satisfaction	Apadana	ekbatan	0.571	0.526
		Fakouri	0.550	1.907*
	Ekbatan	fakouri	0.514	1.381*

*P<0.05

7.CONCLUSION

The spread of mass housing and integration in cities rather than residential complexes in accordance with individual and family needs caused residential dissatisfaction in complexes. The cause of this problem is that, in the designing and construction of mass housing there is not any relationship between designer and operator. The lack of this communication can make the difference between the conventional and the real needs of people more complex. One of the solutions is understanding the expected and conventional needs, participation of people and using the opinions of beneficiaries in the process of planning and designing. Public participation in this process will increase the accommodation of house with needs and raises the public satisfaction.

The results of one-way ANOVA and Pearson correlation coefficient shows that observing appropriate density in private sector leads to residential satisfaction and observing appropriate residential density does not lead to reducing child's anxiety.

Based on the results of Post Hock Test it can be concluded that housing satisfaction is just different between two groups of appropriate and inappropriate density but there is not any statistically significant difference between inappropriate-appropriate and appropriate-very good groups. The purpose of this article is to address the specific case of house designing concepts and to develop effective criteria in it. The results of this study can be the basis for the formulation of guidelines designed to improve the quality of residential areas.

*- This article comes from the researcher's MA thesis titled as "Designing residential buildings with a psychology of environment approach based on Erikson's Theory of Psychosocial Development." The supervisor of the thesis was Dr. Kamal Rahbarimanesh and the advisor Dr. Mostafa Kiani. The research study was carried out at the Science and Research Branch of Qazvin's Azad University.

REFERENCES

1. Einifar, A. 2001. The effect of human-environmental factors on designing residential complexes. Fine Arts Journal,. 8,109.

2. Akhvat, H., M.R., Bemanian and M. Ansari, 2012. Recognition of spiritual concepts of "residence" in traditional housing desert climate. Quarterly Iranian city of Islamic Studies, 5: 96.

3. Behrouzfar, F., Sh., Akbari, and M., Razjouyan, 1999. The relationship between density adjustment in housing and education status of children, Research report issue: G 297. Building and Housing Research Center, Department of Housing and Urban Development, Tehran. p.15.

4. Behrouzfar, F. and M., Razjouyan, 2001. Basics of open space designing in residential areas adopted with physical and mental conditions of children. Research report issue: K 339. Building and Housing Research Center, Tehran.p.13, 23.

5. Hedayat Nejad, M., 1995. Mental health, urbanization culture. The second seminar on the development of housing policy in Iran. Second volume. Department of Housing and Urban Development, Tehran.p.623.

6. Shamloo, S., Mental health. Roshd publication1388. Tehran.p.11,119.

7. Altman, I., 2003. Environment and social behavior: privacy, personal space, territory and crowding. Translator: A., Namazian, Shahid Beheshty publication center, Tehran. 3(4): 179-185.

8. Behzadfar, M. and N. Ghazizadeh, 2011. Case study of open space residential satisfaction: residential complexes in Tehran. Fine arts magazine. Architecture and urban planning,. 45,17,16.

9. Zabihi, H., H., Farah and Rahbari Manesh, K., 2011. Examining the relationship between satisfaction with residential complexes and impact of residential complex on human relationships. Hoviat Shahr publication,. 8(5), 104-107, 109.

10. Salehi, S., 1999. Environmental characteristics of safe urban spaces. Urban planning and architecture research center, Tehran.p.67.

11. Gifford, R., 1999. Residential environments psychology. Editing by Ghobadian, V., culture and architecture journal. 2 & 3, 13.

12. Mortazavi, Sh., 2001. Environmental psychology and its application. Editing by Sanjari, A., Shahid Beheshty University Press, Tehran. p.81.

13. H.Li L, 2011. Impact of housing design factors on children's conduct at school: an empirical study of Hong Kong, J Hous and the Built Environ, 26,427.

14. Churchman, A. 1999. Disentangling the concept of density. Journal of Planning Literature, 13(4), 389–411.

15. Alexander, E. 1993. Density measures: A review and analysis. Journal of Architectural and Planning Research, 10(3), 181–202.

16. Rezaee, M. and Y. Kamaee Zadeh, 2012. Case study of examining the satisfaction of residents from Mehr residential complexes: Mehr housing site, Fatemieh, Yazd. Urban studies of scientific-research quarterly, 5,15.

17. Javaherpour, H., B., Hosseini and S., Norouzian Maleki, 2012. Satisfaction of NARMAK residents of open spaces and public facilities of residential environment. Arman Shahr Journal of Architecture and Urban Planning,. 9,47.

18. Anisi, J., 2008. Spence children's Anxiety scale, Institute of Azmoon Yar Pooya, Tehran.