Journal of Posthumanism

2025
Volume: 5, No: 5, pp. 4256–4276
ISSN: 2634-3576 (Print) | ISSN 2634-3584 (Online)
posthumanism.co.uk

DOI: https://doi.org/10.63332/joph.v5i5.1899

Assessing the Impact of Architectural Quality on Enhancing Quality of Life in Residential Complexes, with Consideration to Residents' Health Status (A Case Study of Shiraz's Residential Complexes)

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Abstract

The rapid growth of urbanization has caused designers and architects to neglect the quality of residential complexes, and the residents of these complexes have faced many problems, including decreased quality of life (QOL) and even threatened health status. This paper aims to evaluate architectural quality, QOL, and health quality as independent, dependent, and mediating variables, respectively, as well as the relationship between them. Health quality evaluated with three indices, including physical, mental, and social health; architectural quality considered while embodying three criteria, including environmental, structural, and functional quality; and, finally, QOL defined as a constant multilateral concept. In the analysis of data, both quantitative and qualitative techniques are used. Surveys, interviews, and field observations were used to collect data. The researcher-made questionnaire was used to collect data on architectural and health quality, while the standard questionnaire was used to collect data on quality of life. Participants were residents in ASATID, DERAK, and CHOWGAN residential complexes (Shiraz, Iran), all with the same social contexts and geographical locations but different environmental and architectural indices. The results confirmed that enhancing architectural quality can dramatically improve residents' QOL, mainly through promoting their health status. In other words, environmental, structural, and functional quality promotes physical, mental, and social health, respectively; and all of them improves QOL in residential complexes.

Keywords: *Architectural Quality, Quality of Life, Health Dimensions, Residential Complexes, Shiraz.*

Introduction

The quality of life (QOL) is the most prominent loss of architecture today; this topic has attracted the attention of many researchers and theorists in various fields, particularly architecture and urban planning, for many years; Yet, no clear definition provided. The first responsibility of designers and architects is to transform natural environments into living spaces for humans (Mugerauer, 1995, 1); therefore, achieving spatial desirability and creating a better quality environment to improve the quality of life of people is always one of the essential design goals. As the home is the most significant place in a person's life, and people spend most of their time in residential environments, the quality of housing plays an important role in improving the quality of life. This study investigates how the quality of housing is related to the quality of life of its residents, and also analyzes the mechanism behind the relationship. The environmental quality of the house is considered an independent variable, and the quality of life is considered a dependent variable. Since the quality of the house is an objective issue while the quality of life is a subjective one, a mediating variable with both objective and subjective aspects is needed to

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analyze the relationship between these two concepts. Hence, health is considered a mediating variable in this study. By examining its relationship with different dimensions of environmental quality and its relationship with quality of life, on the other hand, the relationship between the main variables of the research examined. With this explanation, the research questions presented as follows:

- What is the relationship between the environmental quality of housing and the quality of life of residents?

- How does the environmental quality of housing improve the health status of its residents?

- What is the relationship between the health dimensions of residents and their quality of life in a residential complex?

Theoretical Literature

Quality of Life

The concept of Standard Living first appeared among social science critics in the twentieth century, following the most tragic events of the nineteenth century. People's dissatisfaction with slums, poverty, disease, and the waste of resources and facilities were among the problems of the time. During this period, a concept called "quality of life" formed, and concepts such as public health, social relations, and self-esteem became part of the public demand (Devine, 1917). This concept encompasses many areas of life today, such as housing, education, employment, and the environment, but a comprehensive and plausible definition doesn't yet provide. Quality of life defines as a multidisciplinary and interdisciplinary subject (Ulengin and Guvenc, 2001) and in some cases with terms such as a good life, happiness in life, satisfaction and some Similar have been reported (Szalai and Andrew, 1980). However, among the various descriptions related to the quality of life, the definition of the World Health Organization (2006) in this regard is significant. In this interpretation, the meaning of quality of life is a person's perception of his life situation according to the cultural systems and values in which he lives and formed following the goals, expectations, criteria, and daily concerns of the person. According to this definition, "quality of life is a multidimensional structure that encompasses various physical, sexual, social and emotional areas of a person's life and is related to his physical, social and psychological health" (Victorson *et al*., 2007).

Architectural Quality

Quality is a term that widely uses within the discourse of all professional areas, including art and industry, as it appears that the purpose of all fields is to improve their products (Sameh, 2018). This concept means "A set of distinctive features and attributes that distinguish an object from other objects and enable us to judge the superiority, inferiority, or similarity of one thing over another." And judge aesthetically about being beautiful or ugly, good or bad, and functionally determining whether it is efficient or inefficient (Golkar, 2001). This concept demonstrates how well a product meets the required qualifications (Worth Vegan, 1392: 8) and how it has an emotional or intellectual impact on humans (Sameh, 2018; Pakzad, 2002, 103).

Quality is a broad multidimensional concept that covers many aspects of a notion and is not easily defined. However, in the environmental field, the concept of quality examine in two dimensions; the objective and the subjective dimension:

In the objectivist approach, "quality refers to those specific features of a thing or phenomenon

that have a special emotional and intellectual impact on human beings" (Pakzad, 2002, 103). Accordingly, every physical environment has characteristics that appear as an external reflection of its inward nature. The quality of the physical environment interprets as an intrinsic characteristic of the physical environment in user's minds. (Moeini and Islami, 2012, 51). In the subjectivist approach, the creation and control of quality consider as an internal matter concerning manufacturers, and quality defines as the ability of anything to use (Montgomery, 2005, 6). Therefore, the quality of the artificial environment refers to a set of fundamental and especial attributes of a specific phenomenon that is formed based on mental images of everything with the interaction between the individual and the physical environment (Golkar, 2007, 70).

The quality of architecture examines in three areas, which include environmental quality, structural quality, and functional quality. Environmental quality is the first level and the most fundamental system that creates quality in architecture, especially in residential environments (Rossi, 1982, 114). This level of quality indicates the structural or physical aspect in which responding to the basic human needs include the shelter need consider. This aspect is essential, and clear that if this level of quality doesn't provide in the construction, it will not be possible to achieve other architectural qualities (Voordet & Wegen, 2005, 4). At this level, concepts such as safety, health, environmental comfort, and proper lighting of the building recognize.

Structural quality is the next level in defining the quality of architecture, which arises concerning the type of building structure and the spatial arrangement of its components. This aspect of quality refers to the physical space or artificial environment that is a set of objective phenomena or realities perceive through mental experience (Moeini and Islami, 2012, 50). The result of this level manifested in different feelings of people from the environment, which include the sense of security in space, feeling of confinement or non-confinement of space, privacy, and spatial hierarchy (Sameh, 2013, 53 ; Voordet and Wegan, 2013).

The third level of quality of the residential environment is its functional quality. Although the function is a fundamental concept in the definition of architecture, the functional dimension of environmental quality is an issue that deals with how space responds to different levels of human needs, including individual and social needs, and above all concerning the efficiency of the building. Its applicability and use in response to these needs are significant. In an article entitled "Architectural Quality" Jared Dijkstra links such quality in architecture with "applicability" and defines attention to functional requirements as an essential factor in determining the quality of an environment (Dijkstra, 2001). Therefore, the functional quality of a building should consider as its ability to make possible and provide the necessary support for various ongoing activities in it (Voordet and Wegan, 2013, 9). At this level, space responds to issues such as spatial zoning, orientation, legibility, territory, flexibility, permeability, and access to services consider (Dijkstra, 2001)

The Concept of Health and Healthy Housing

The World Health Organization (WHO) is one of the United Nations agencies. The main goal of this organization is to coordinate and improve the public health situation in the world. According to the definition of this organization, the concept of health is defined as "providing complete physical, mental and social well-being, the meaning of which doesn't limit to the absence of disease and disability" (Rahimi, 2010). Accordingly, health has three dimensions: physical, mental, and social, and any defect and damage to any of these three parts can lead to imbalance and thus threaten his health (Hakimian, 2012). Each of the three dimensions of health is related to the subject of housing and introduces terms such as healthy housing, healthful

housing, or housing Hygiene in architecture. In these definitions, healthy housing means a house that can provide all three dimensions of health, including physical, mental, and social health for its residents. In the following, each of these three dimensions about the issue of housing will introduce.

Physical Health

The physical dimension of health in housing means keeping people free from any disasters and dangers caused by fire, suffocation, injury, or diseases such as asthma, skin allergies, respiratory and overweight (Ghaffari *et al*. 2011). In a residential environment, this dimension is affected by factors such as the proper orientation of the building (Asefi *et al*., 2016; Ghaffari *et al*., 2011), thermal comfort of the building (Ghiasi *et al*., 2013), sound comfort of residential units (Zabihi *et al*., 2011), Reduction of environmental pollution in a residential environment (Khaef & Zebardast, 2016), the safety of residential spaces (Kawakami et al., 2011; Miller et al., 1980) and finally the possibility to help in emergencies (Campell, 1996; Khaef & Zebardast, 2016).

Mental Health

The psychological aspects of health in housing include all the psychical effects that the physical environment of housing has on its residents. Low-quality homes reduce the mental health of their occupants (Shaw, 2004), and, in contrast, improving the quality of the home environment has a positive effect on promoting their mental health (Thomson & Petticrew, 2005).

Social Health

The model of social health, first proposed by Reef (1996). In this model, the concept of social health introduced the positive ability of the mind to create appropriate social relationships with other peers. This concept includes a set of social norms such as self-acceptance, personality development, positive relationships with others, mastery of the environment, purposefulness in life, and independence (Rafiei *et al*., 2010). According to Kinsey, outstanding performance in life is more than just physical and mental health. It also includes social responsibilities and challenges (Kinsey & Lane, 2015).

Theoretical Framework

According to the research objectives and hypotheses, architectural quality, quality of life, and health quality are considered independent variables, dependent variables, and mediating variables, respectively. Research literature indicates that architectural quality is measured by three different indicators: environmental quality, structural quality, and functional quality. Health will be analyzed in three physical, mental, and social dimensions as well as a psychological-semantic concept of quality of life. Based on the theoretical research framework, the table below shows the variables used in this study.

variable	Dimensions	indicators
Architectural quality	Environmental quality	Orientation of the building, thermal comfort, sound comfort, Reduction of environmental pollution, the safety of residential spaces, possibility to help in emergencies
	Structural quality	Space organization, Spatial configuration, feeling confined in space, privacy, and spatial hierarchy

	Functional quality	spatial zoning, orientation, legibility, territory, flexibility, permeability, and access to services and public transportation, Pattern and criteria / proportions ,various materials
Quality of life	psychological-semantic quality	Social interactions, sense of belonging, creating vitality, relation with nature, Social identity, individual memories, social memories, cultural-historical events
health	physical	safety, open space, climate, hygiene
	mental	Safety, perspective, extent, lighting, green space, visual privacy, acoustic privacy, Noise, light, visual pollution, Separation of public and private space, flexibility, Unwinding environment
	social	Social safety, Similarity with neighbors, A space to communicate with the family, A space to interact with the neighbor, Willingness to associate with neighbors

Table I- Theoretical Framework of Research

Research Method

The purpose of this study is to investigate how the architectural qualities of residential complexes affect the quality of life of their residents. Architectural quality is an objective issue, and quality of life is a subjective issue, so to measure the effectiveness of this relationship mediating variable has both an objective and subjective aspect needed. Accordingly, the concept of health considered as a mediating variable, which, on the one hand, is influenced by architectural qualities, and on the other hand, reflects the quality of life in residential complexes.

The theoretical framework for the research is presented after reviewing the literature and extracting indicators related to each variable. Three residential complexes in Shiraz were examined using observation, interviews, and questionnaires. A standard questionnaire (Soleimani, 2016, 574) was used to assess quality of life. Based on the indicators provided in this regard, the quality of architecture was assessed through observation, interview, and a researcher-made questionnaire; finally, the residents' health status was assessed through a researcher-made Likert scale multiple-choice questionnaire. The validity and reliability of the questionnaires were determined by first designing and providing the professors with indicators for each variable. After modifying and removing some items, 26 items were designed for the final questions, and Cronbach's alpha coefficient was calculated separately for each group. Across all questionnaires, this value was equal to 0.815, indicating high reliability.

indicators	**Number of questions**	**Cronbach's alpha**	**Standard deviation**	**average**
Architectural quality	8	0/793	0/759	2/94
Health dimensions	18	0/931	0/880	2/91

Table II - Cronbach's Alpha for the Proposed Indicators of the Research Variables

As mentioned, case studies in this survey include three complexes of ASATID, DERAK, and

CHOGAN in Shiraz. These complexes have almost similar states in geographical location and socioeconomic characteristics of the inhabitants; but in spatial-architectural qualities, they are different. These varieties are also moderately evident in people's perceptions of these complexes.

Figure 1. Asatid residential complex

Figure 2. Derak Residential Complex

Figure 3. Chogan Residential Complex

By interviewing the residents of the studied complexes and also the authors' direct observations of the spaces, the socio-spatial qualities of the complexes extracted. Results presented in Table 4.

Residential complex **Socio-spatial Qualities**	**Chogan**	**Derak**	**Asatid**
Green space	Lack of green space Use the tree	Medium extent Use trees and shrubs	**proper extent** **Use trees, shrubs, flowers, and grass**
Building's orientation	North-South, East	North-South, East-West	**North-South**
Acoustic comfort	Inappropriate, Located close to the main street	Inappropriate, Located close to the main street	**appropriate, quiet location, retreating blocks from the street**
safety	Almost appropriate, reach some standards	Almost appropriate, reach some standards	**Appropriate, compliance with standards**
Suitable lighting	One-way lighting of units, northern units Southern Units, Eastern Units	Two-way lighting of units, north-south units, south-west units	**Two-way lighting of units, north-south units**
Open space per capita	Less than Standard per capita	Almost Standard per capita	**Standard per capita**
Public services	supermarket	-	**Supermarket, laundry**
Visual privacy	there is not appropriate visual privacy	Some efforts had made to maintain visual privacy, but it is not appropriate in some spaces	**Visual privacy maintained in most units**
perspective	Surrounding streets and other blocks	Drake Mountains, Cityscape	**surrounding gardens**
Complex security	security office in some of entrances, Fences around the complex, There is easy access to the complex from the surrounding streets.	building security, Fence around the complex, lack of control over entrance and exit	**building security in different parts, fence, and wall**
Separation of public and private space	There is no separation for the open space of the	Separated open space for each block, in the	**Separated open space for each block, a private**

	blocks, In interior spaces, the circulation in corridors and entry to the units do simultaneously	interior spaces, the circulation separated from the entrance of the units	**lobby for each block, The corridor separated from the entrance of the units on floors**
Similarity with neighbors	Some of the blocks were for the residence of some organizations. but the relocation of residents, there is no similarity with residents	There are no similarities between the population	**Most residents are of the same job category.**
Lobby	without lobby	The entrance space is slightly open, but the definition of lobby is weak	**defined lobby on the ground floor**
Public spaces for interaction	Open and public spaces dedicated to the circulation and passage of cars	open and green spaces provided for group sitting or social interactions	**Open spaces designed for neighbors' gathering**
privacy	Suitable privacy in units, In the open space, due to the circulation, there isn't enough privacy	Suitable privacy in units, privacy in corners of the open space and the pavilion.	**Suitable privacy in units and public open space**
Spatial hierarchy	There is no spatial hierarchy of public space. Separation in units is moderate	The spatial hierarchy from the public to semi-public space is a bit problematic, but the units are well separated	**The spatial hierarchy from the public to semi-public and private space in blocks and units is well designed**
legibility	The similarity of blocks and spaces confuses access to spaces	The similar elements make the accessibility and legibility of the space difficult	**accessible spaces**
Separation of open space for blocks	Open spaces are not separated	Space provided for each block	**appropriate**
Observing the urban planning patterns and policies	Inappropriate	Almost appropriate	**appropriate**

Variety of activity	Playground for children uses for some activities	The site has a variety of spaces that uses in different situations. But no arrangements have made for the blocks	**Variety of activity in open space**
Accessibility	Access is possible from several streets, heavy Traffic on surrounding streets	Access is possible from several streets, heavy Traffic on surrounding streets	**Access is possible from several streets, No heavy Traffic on surrounding streets**

Table III- Socio-Spatial Qualities of the Case Studies

Results

In this study, first, the indicators of architectural quality, quality of life, and health status of residents evaluated separately concerning each of the mentioned complexes. Then the correlation between each of the variables to achieve the objectives of the study analyzed.

Evaluating the Health Status of Residents

To assess the health status of residents in each of the residential complexes, the F test (ANOVA analysis) used. Table 5 presents the results of this test individually for each dimension of health, including physical, mental, and social health.

Indicator	**Chogan**	**Derak**	**Asatid**	**parameter**
	Average			
Physical health	3.27	3.01	3.29	**safety**
	3.32	3.55	3.96	**Open space**
	3.10	3.12	3.32	**hygiene**
	3.62	3.84	3.87	**climate**
	4.13			**Between group**
	103.488			**Within group**
	1.30			**Mean square**
	2.55			**F**
	0.056			**sig**
Mental health	4.14	4.57	4.71	**safety**
	3.44	3.71	3.99	**perspective**
	3.04	3.36	4.72	**extent**
	2.18	3.62	3.85	**lighting**
	2.14	2.87	4.05	**Visual privacy**
	2.40	2.41	3.83	**Green space**
	2.44	2.51	3.02	**Noise, light, visual pollution**

	2.30	2.40	3.59	**Acoustic privacy**
	2.33	3.11	3.79	**Separation of public and private space**
	1.92	2.16	3.30	**Unwinding environment**
	2.47	3.54	4.80	**flexibility**
	20.593			**Between group**
	79.256			**Within group**
	6.86			**Mean sruare**
	13.55			**F**
	0.00			**sig**
Social health	3.95	4.21	4.33	**Social safety**
	2.25	3.01	3.92	**Similarity with neighbors**
	3.01	2.36	3.01	**A space to communicate**
	2.05	2.25	3.01	**Space for interaction**
	87.838			**Between group**
	223.536			**Within group**
	29.279			**Mean sruare**
	25.149			**F**
	0.00			**sig**

Table IV - F Test (ANOVA Analysis) Evaluating the Health Status of Residents in Each of the Cases

According to the above table, the affirmative physical health situation in all three residential complexes of Asatid, Drak, and Chogan, has been observed. The high level of significance of the test from 0.05 indicates that there is no significant difference in the physical health dimension between the studied complexes. In other words, the physical health status of residents due to the high level of averages in all three complexes is satisfactory and in a similar condition to each other.

However, on the mental health status of the residents, the level of significance obtained in the F test shows that the mental health status of the residents of the groups in question has significant deviations. Therefore, to determine differences, the Tukey post hoc test used. The results in Table 5 showed that the mental health status of residents in the Asatid and Drak complex is similar to each other. However, It is different in the Chogan complex. Considering that the averages obtained in Asatid and Derak Complexes are often higher than average, so it seems that the mental health in these two complexes is optimal but, this indicator does not seem very appropriate in the Chogan residential complex.

		Chogan	**Derak**	**Asatid**	
Sig.		0/00	0/009	Significant different in mental health with Chogan	**Asatid**
Mean Difference		-0/312	0/1096		
95% Confidence	lower	0/532	0/619		
	upper	0/699	0/838		

Interval of the Difference				and Derak complexes	
Sig.		0/959	Significant different with Asatid complex	0/009	**Derak**
Mean Difference		-0/1408		-0/1096	
95% Confidence Interval of the Difference	lower	-0/884		0/838	
	upper	0/602		0/619	
Sig.		Significant different with Asatid complex	0/959	0/00	**Chogan**
Mean Difference			0/1408	0/312	
95% Confidence Interval of the Difference	lower		-0/602	0/669	
	upper		0/884	0/532	

Table V - Tukey Post Hoc Test, Comparison of Mental Health Indicators in Case Studies

The evaluation of social health in residential complexes and the amount of their significance level in the F-test show that there are significant differences between the acquired means of social health dimension in the three complexes. The results of the Tukey post hoc test regarding the comparison of social health indicators in the studied complexes (Table 6) show that the mean of social health in the Asatid complex is significantly different from Drak and Chogan complexes. Also, the values obtained in the Asatid complex are above average, but in the Drake and Chogan complexes, this amount is lower than expected. Therefore, it seems that the social health situation in the Asatid complex is optimal, but this parameter is not very desirable in the Drake and Chogan complex.

		Chogan	**Derak**	**Asatid**	
Sig.		0/00	0/607	Significant different in social health with Chogan complex	**Asatid**
Mean Difference		-0/86	-0/17		
95% Confidence Interval of the Difference	lower	-1/2	-0/55		
	upper	-0/49	0/19		
Sig.		0/00	Significant different with Chogan complex	0/607	**Derak**
Mean Difference		-0/68		0/17	
95% Confidence Interval of the Difference	lower	-1/05		-0/19	
	upper	-0/31		0/55	
Sig.		Significant different with Asatid and Derak complexes	0/00	0/00	**Chogan**
Mean Difference			0/68	0/86	
95% Confidence Interval of	lower		0/31	0/49	
	upper		1/05	1/24	

the Difference					

Table VI - Tukey Post Hoc Test, Comparison of Social Health Indicators in Case Studies

Measuring the Quality of Architecture in Case Studies

Architectural quality is an independent variable in this study that, according to the theoretical framework of the research, can be measured using three factors: environmental quality, structural quality, and functional quality. The ANOVA analysis F test used to evaluate the status of these qualities in the studied complexes. The table below presents the results.

Indicator	**Chogan**	**Derak**	**Asatid**	**Parameter**
	Average			
Environmental quality	3.84	3.87	3.93	**orientation**
	3.81	3.89	3.91	**Thermal comfort**
	3.61	3.54	4.25	**Acoustic comfort**
	3.54	3.51	3.62	**Reduce pollution**
	3.27	3.11	3.29	**safety**
	4.731			**Between group**
	109.625			**Within group**
	1.43			**Mean sruare**
	3.37			**F**
	0.061			**sig**
Structural quality	2.84	3.51	3.87	**Spatial configuration**
	2.01	3.27	3.72	**Spatial organization**
	2.97	2.60	3.91	**privacy**
	2.85	3.42	4.01	**Space hierarchy**
	20.403			**Between group**
	115.996			**Within group**
	6.801			**Mean sruare**
	11.257			**F**
	0.000			**sig**
Functional quality	2.58	3.05	4.18	**orientation**
	2.91	3.09	4.72	**legibility**
	2.73	2.89	3.91	**Territory**
	1.77	2.15	3.84	**Access to services**
	2.61	3.72	4.84	**proportions**

	2.59	2.54	4.51	**Pattern and criteria**
	1.61	2.74	4.49	**flexibility**
	1.57	3.68	4.33	**permeability**
	72.388			**Between group**
	173.635			**Within group**
	18.397			**Mean sruare**
	17.491			**F**
	0.000			**sig**

Table VII- F Test (ANOVA Analysis), Measuring the Quality of Architecture in the Case Studies

According to the results of the above table, the significance level of the environmental quality variable of the complexes is 0.061, which compared to the fixed value of 0.05; this quality does not show a significant difference between the compared complexes. In other words, all three of these complexes have a similar situation with the environmental quality parameters. The average obtained in the parameters such as the orientation of the blocks, the thermal and acoustic comfort in the buildings, reduction of pollution, and the safety of the spaces in the complex shows the ideal condition of cases.

In structural quality parameters, the significance level of the F test shows a value of less than 0.05, which confirms the existence of differences in this parameter among the complexes. Therefore, to analyze the differences between complexes regarding their structural qualities, the Tukey post hoc test used, the results presented in Table VIII.

		Chogan	**Derak**	**Asatid**	
Sig.		0/00	0/13	Significant different with Chogan complex	**Asatid**
Mean Difference		-0/51	0/64		
95% Confidence Interval of the Difference	lower	-0/81	-0/16		
	upper	-0/21	0/43		
Sig.		0/00	Significant different with Chogan complex	0/64	**Derak**
Mean Difference		-0/64		-0/13	
95% Confidence Interval of the Difference	lower	-0/94		-0/43	
	upper	-0/35		0/16	
Sig.		Significant different with Asatid and Derak complexes	0/00	0/00	**Derak**
Mean Difference			0/64	0/51	
95% Confidence Interval of	lower		0/35	0/21	
	upper		0/94	0/81	

the Difference					

Tablevιι - Tukey Post Hoc Test, Comparison of Structural Quality in Case Studies

The results of the above table show that this record is quietly similar in the Asatid and Drake complexes; while the structural quality of the Chogan complex has a significant difference with these two complexes.

Regarding the functional quality measurement of the studied complexes, the results of the F-test emphasize the significant difference between the acquired means of the three complexes (sig<0.05). Therefore, the comparison of the obtained means related to the functional quality in the complexes examined in the Tukey post hoc test; the results presented in Table IX.

		Chogan	**Derak**	**Asatid**	
Sig.		0/047	0/011	Significant different with Chogan and Derak complexes	**Asatid**
Mean Difference		0/1575	0/3202		
95% Confidence Interval of the Difference	lower	-0/81	0/16		
	upper	-0/21	0/43		
Sig.		0/951	Significant different with Asatid complex	0/011	**Derak**
Mean Difference		-0/1627		-0/3202	
95% Confidence Interval of the Difference	lower	-0/94		-0/43	
	upper	-0/35		0/16	
Sig.		Significant different with Asatid complex	0/951	0/047	**Chogan**
Mean Difference			0/1627	0/1575	
95% Confidence Interval of the Difference	lower		0/35	0/21	
	upper		0/94	0/81	

Table IX - Tukey Post Hoc Test, Comparison of Functional Quality in Case Studies

According to Table 10, the functional quality in the Asatid complex has a significant difference with Drak and Chogan complexes. Considering the higher average of the Asatid complex, it seems that it has a desirable situation in functional quality parameters; while this quality in the Derak and Chogan complexes is not at an adequate level.

Evaluating the Quality of Life Among the Residents of the Studied Residential Complexes

Quality of life is the dependent variable of this study, which assessed using a standard

questionnaire among the collections. In the analysis of this questionnaire, the weighted mean used that values above 3 indicate the desired level, values between 3 and 1 are moderate, and values below 1 are weak. With this description, the results of the test performed concerning the quality of life in the three complexes showed that the quality of life among the residents of the Asatid complex is at a suitable level, Derak complex is at a medium level, and Chogan complex is at a low level.

Weighted mean	Residential complex
3/30	**Derak**
2/21	**Asatid**
1/49	**Chogabn**

Table X- Quality of Life Among the Residents of Case Studies

Discussion

In this section, the research hypotheses about the relationship between the mentioned variables tests. There is a hypothesis in the research that has investigated the relationship between architectural quality and quality of life in residential complexes. Also, the health status of residents and how it relates to the dimensions of environmental quality and quality of life are the subject of sub-hypotheses that addressed in this study. To start the discussion, in the first step, the correlation between these three variables examined in pairs; The results presented in Table 11:

	Health dimentions	**Quality of life**	**Architectural quality**	
	0/607	0/582	1	**R**
Architectural quality	0/00	0/00		**sig**
Quality of life	0/813	1	0/582	**R**
	0/00		0/00	**sig**
Health dimentiona	1	0/813	0/607	**R**
		0/00	0/00	**sig**

Table XI- Correlation Test Between Research Variables

According to the table, all three variables of quality of life, quality of architecture, and health status of the residents of the complexes have a significant relationship with each other in pairs. In other words, the quality of architecture has a meaningful relationship with the quality of life and health of residents, and also the quality of health of residents has a significant relationship with their quality of life. Therefore, with these explanations, the research hypothesis based on the existence of a significant relationship between architectural quality and quality of life in residential complexes is confirmed. However, what needs to consider in this section is an analysis of the mechanism of architectural quality affects the quality of life. For this purpose, the relationship between the parameters of these variables with each other analyzes in pairs. This

issue will discuss the following.

Investigating the Relationship Between Architectural Quality and Health Dimensions

According to the theoretical framework of the research, the quality of architecture consists of three dimensions of environmental, structural, and functional quality; and the health of residents in residential complexes is also affected by physical, mental, and social health dimensions. Therefore, the relationship between the dimensions of architectural quality and health dimensions investigated using the correlation test; the results of which presented in the following table:

			Health dimensions		
			Social health	Mental health	**Physical health**
Architectural quality	Environmental quality	R	Architectural quality	Architectural quality	**0/761**
		sig	0/041	0/03	**0/00**
	Structural quality	R	0/27	0/803	**0/41**
		sig	0/037	0/00	**0/024**
	Functional quality	R	0/798	0/561	**0/503**
		sig	0/00	0/021	**0/033**

Table XII - Correlation Test Between Architectural Quality Parameters and Health Dimensions

According to the above table and the values related to the significant levels between the variables, there is a significant relationship between all three dimensions of architectural quality and all three dimensions of health. However, observing the correlation coefficients between the mentioned variables, it is observed that the highest correlation coefficient between environmental quality and physical health dimension (0.761), structural quality with mental health (0.803), and functional quality with social health (0.798) obtained. Moreover, according to table 4, the residents of all three complexes are in an affirmative condition in physical health; In mental health, Derak and Asatid complexes are both in a desirable situation, and Chogan complex is in an unfavorable condition. Finally, in social health, only the Asatid complex is in proper condition, and the two Chogan and Derak complexes are in poor condition. Also, the results of Table 7 concerning the architectural qualities have presented similar conclusions. The environmental quality in all three sets assessed in a desirable condition; The structural quality in the Asatid and Drak complexes is in good condition; Finally, the social quality evaluated at the desired level only in the Asatid complex.

According to the explanations provided, it seems that:

1- The physical health of people in residential complexes is directly related to the environmental quality of those complexes. It means that parameters such as the proper orientation of the building, thermal and acoustic comfort, reduction of environmental pollution, and increase of safety are directly related to the physical health of individuals. Also, it relates to other dimensions of the health of residents, including mental health and their social health. Surveys conducted among the three complexes also confirm that residents consider the comfort and health issues in all three complexes. It has led to the desirability of physical health (affected by these factors) in all three complexes. Therefore, the relationship between the physical health of

residents and the environmental qualities of the complex, which raised in environmental comfort, safety, and health, is quite explicit.

2- The mental health of the residents in the residential complexes is directly related to the structural quality of the complexes. Structural quality influenced by spatial configuration, and in residential complexes specified with no excessive confinement of units, privacy in houses, the spatial hierarchy, acoustic and visual privacy, and separation of public and private areas. These features have the most impact on the formation of residents' sense of security and mental peace in residential complexes. This issue evident in the surveyed complexes; In the Chogan complex, due to lack of spatial zoning, lack of proper visual and acoustic privacy in the construction of units, sound, light, and visual pollution due to the location of the complex along the main traffic routes of the city and the lack of green space in the complex has significantly reduced the mental peace among the residents compared to the Derak and the Asatid residents. For this reason, we can acknowledge the relationship between the mental health of residents and the structural qualities of the environment, which is directly affected by the spatial configuration patterns in the complexes.

3- The social health of the residents is directly related to the functional quality of the complexes. As mentioned before, social health means the ability of individuals to communicate effectively with others and their willingness to participate in matters related to housing. Social integration among people living in a complex and the proficiency of space to provide appropriate conditions are influential in this matter. The Asatid residential complex designed for the accommodation of Shiraz University professors; This led to the formation of a kind of social integration among the residents of this complex in comparison with the two complexes of Drak and Chogan. Besides, social spaces for members' gatherings, children's playgrounds, gyms, furniture lobbies, as well as the benches and chairs in the complex open space, has enhanced the possibility of positive social interactions among residents. It is quite evident in the increase in the level of relations between the neighbors in the Asatid complex in comparison with the two Drak and Chogan complexes. Therefore, the function of space in creating a suitable platform for establishing constructive social interaction between residents is directly related to the social health of the residents. In this regard, spatial territoriality, spatial flexibility, and also providing spatial security in social environments are among the parameters of functional quality that can be effective in promoting social safety and creating space for social interactions.

Investigating The Relationship Between Health Dimensions and Quality of Life

The relationship between different levels of health of residents and their quality of life in the residential complex examined using a correlation test. Table 13 shows the results.

	HEALTH DIMENSION			
	Social health	Mental health	Physical health	
R	0/ 795	0/814	0/658	**QUALITY OF LIFE**
sig	0/000	0/012	0/027	

Table XIII - Correlation Test Between Quality of Life Parameters and Health Dimensions

According to the above table, there is a significant relationship between all three dimensions of health and quality of life. Therefore, it seems that the provision of health in residential complexes is directly related to the quality of life of residents. Examination of the values of correlation

coefficients between the variables shows that there is a strong relationship between social health and mental health with quality of life. In other words, the quality of life in residential complexes is greatly affected by the social health and mental health of their residents. The cause is related to the concept of quality of life and the factors affecting it. According to the research literature, environmental vitality, sense of belonging, the formation of social identity, memory, and social participation considerably influence the quality aspects of life. So, in the Asatid complex, where all three dimensions of health, including physical, mental, and social health, is in the best condition; the quality of life of its residents is at the highest level compared to the other two complexes. However, in Derak Complex, which is in the desired condition only in physical and mental health (and its social health is in a lower status than the Asatid complex), the quality of life is at a lower level than the Asatid complex. Finally, in the Chogan complex, which has only physical health characteristics in health dimensions, it is at the weakest level in quality of life compared to the Asatid and Derak complexes.

According to the above statements, the relationship between the variables of the research presents in the following diagram.

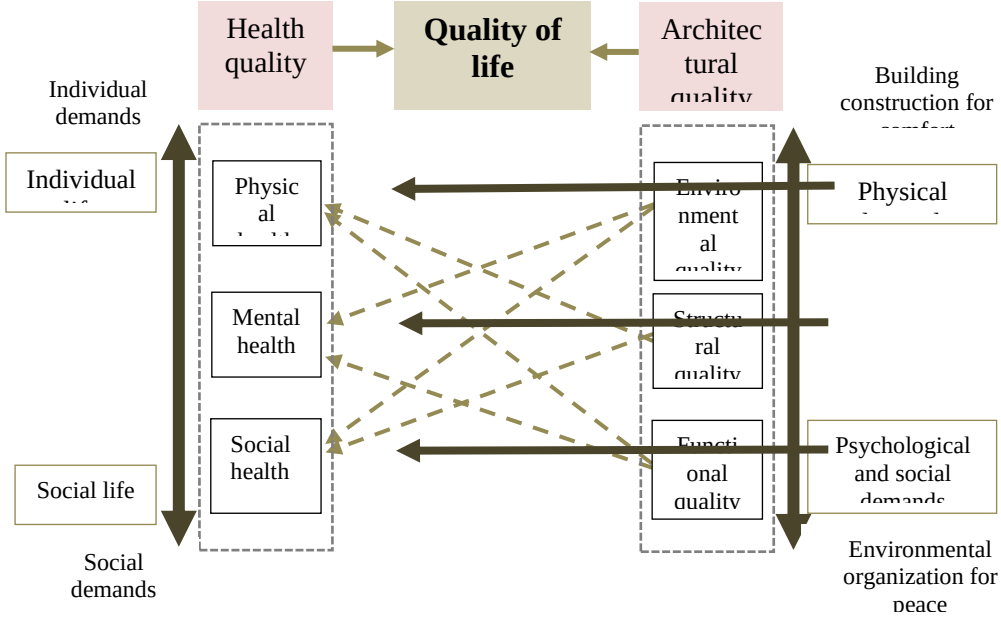

Figure 4 - Research Final Model, The Relationship Between Architectural Quality, Quality of Life, And Health in Residential Complexes

Conclusion

Improving the quality of life has always been one of the significant human goals in all fields. All activities, advances, and achievements throughout history had used to promote this goal. Therefore, one of the most important goals of architecture and environmental design has been to create a proper environment for humans and improve the quality of life. This issue is especially significant in designing housing as space where people spend most of their time.

Classifying the quality of space in housing architecture into two objective and subjective dimensions, In the objective dimension, more attention pays to the user's physical needs and providing physical comfort; And in the subjective dimension, the mental and psychological needs in the housing environment consider. Accordingly, the quality of architecture responding to physical requirements and mental and psychological needs of human beings includes various dimensions mentioned in the architectural literature in environmental, structural, and functional quality.

The health concept assesses the relationship between architectural quality and quality of life. In this concept, human health distributes into three dimensions: physical, mental, and social health, and achieving it depends on providing different levels of physical to spiritual needs of humans. To achieve the research aims mentioned variables analyzed in pairs, which eventually appeared in the following results:

1- Architectural qualities in residential spaces are directly related to improving the health status of its residents. The following are remarkable in this regard:

- Improving environmental quality promotes all aspects of health in housing, especially the physical health of residents. It means that providing health, creating environmental comfort in housing, ensuring the safety of residents, which in the environmental quality, are the most significant factors in assuring the physical health of residents.

- Improving structural quality in housing promotes mental health. It means that paying attention to the structural features of housing concerning the spatial configuration, proper spatial zoning, providing psychological security of residents, and creating appropriate visual space in the home, appear in psychological peace at residence. So their amount of mental health improves at home.

- Improving the functional quality promotes social health in residential environments; In this regard, we can refer to the capabilities of housing in providing both individual and social functions in the housing environment. The verification of social spaces in the residential spaces, a place with functional diversity to perform a variety of activities in public areas, spatial hierarchy, and individual and social areas are among these. By offering such solutions, the interaction between residents increases, and this leads to greater recognition among neighbors, the formation of social identity for residents, also increases the desire for social participation among them, which ultimately contributes to the social health of residents.

2- The quality of health of residents is directly related to improving the quality of life of people. Providing all three dimensions of health in residential environments increases their quality of life in all features. Therefore, disruption in providing any aspect of health in residential settings can reduce the quality of life in residential complexes.

3- The quality of architecture in residential spaces is directly related to the quality of life of the residents. This issue, which is one of the main goals of this study, is quite distinct and understandable in light of the above. On the one hand, there is a two-way relationship between architectural quality and health dimensions; On the other hand, the quality of health of residents in residential complexes directly related to their quality of life. Therefore, it argued that there is a direct relationship between the quality of architecture in residential complexes and the quality of life of their residents; In this regard, by improving the quality of architecture in residential spaces, various dimensions of residents' health increase, and this will ultimately lead to improving their quality of life.

References

Asefi, M. and Emani, E. (2016), "Redefining Design Patterns of Islamic Desirable Contemporary Housing through Qualitative Evaluation of Traditional Homes", Journal of Research in Islamic Architecture, vol. 4, no.11, pp. 56-75. Doi: http://jria.iust.ac.ir/article-1-486-fa.pdf

Campbell, S (1996), "Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development", Journal of American Planning Association, no.62, pp. 296- 312. Doi: https://doi.org/10.1080/01944369608975696

Devine, E.T. (1917), The Normal Life. Douglas c, New York

Dijkstra, T. (2001), Architectonic Quality. Hague: In Policy Note,Government Architecture.

Ghaffari, A. and Banaee, M. (2011), "what is healthy house", housing and rural environment journal, vol.30, no.133, pp. 15-28. Doi: http://jhre.ir/article-1-14-fa.html

Ghiasi, M.H. and Azimi, S. amd Shahabian, P. (2013), "Assessing the relationship between residential satisfaction and housing variables, a case study of Farabi Residential Complex" Hoviatshahr journal, vol.7, no.15, pp. 49-60. Doi: http://hoviatshahr.srbiau.ac.ir/article_2344_9f0f72da5686f91a5abd20e96f331064.pdf

Golkar, K. (2001), "Components of urban design quality", Soffeh journal, no.32, pp. 38-68. Doi: http://www.memarnet.com/sites/default/files/pdf/tarahi-shahri.pdf

Golkar, K. (2007), "The concept of quality of vitality in urban design", Soffeh journal, vol.16, no.44, pp. 66-75. Doi: https://www.sid.ir/fa/journal/ViewPaper.aspx?id=81523

Hakimian, P. (2012), "Health in the urban designer", Soffeh journal, vol. 22, no. 56, pp. 88-100. Doi: http://sofeh.sbu.ac.ir/article/view/1781/1779

Heidari, A.A. and Amirhajlou, E. and Karkhane, M. and Ahmadifard, N. (2013), "Evaluating the Role of social Spaces in Urban Quality, Case Study: District One of Tehran", Armanshahr journal,vol. 5, no. 11, pp. 322-335. Doi: https://www.sid.ir/fa/journal/ViewPaper.aspx?id=241833

Kawakami, N. and Winkleby, M. and Skog, L. and Szulkin, R. and Sundquist K. (2011)," Differences in Neighborhood Accessibility to Healthrelated Resources: A Nationwide Comparison between Deprived and Affluent Neighborhoods in Sweden", Journal of Health & Place, no.17, PP.132–139. Doi: https://www.sciencedirect.com/science/article/abs/pii/S1353829210001346

Khaef, S. and Zebardast, E. (2016), "Assessing quality of life dimensions in deteriorated inner areas: a case from Javadieh neighborhood in Tehran metropolis", journal of social indicators research, no.127, pp. 761-775. Doi: https://doi.org/10.1007/s11205-015-0986-6

Kinsey, J. and Lane, S. (2015), "Race, housing attributes and satisfaction with housing", Housing and Society, vol.10, no.3, pp. 98-116. Doi: https://doi.org/10.1080/08882746.1983.11429932

Lansing, J.B. and Marans, R.W. (1969), "Evaluation of Neigborhood Quality", AIP Journal, vol.35, no.3, pp. 195-199. Doi: https://doi.org/10.1080/01944366908977953

Miller. F.D. and Tseraberis, S. and Malia, G.P. and Greg, D. (1980), "Neighbourhood satisfaction among urban. dwellers", Journal of Social Issues, vol.36, no.3, pp. 363. 101-117. Doi: https://doi.org/10.1111/j.1540-4560.1980.tb02038.x

Moeini, M. and Eslami, G.R. (2012), "An analytical approach to the quality of contemporary residential environment", Hoviatshahr, vol.6, no. 10, pp. 47-58. Doi: http://hoviatshahr.srbiau.ac.ir/article_1325_78bb814e7f233984a08b542788829b10.pdf

Montgomery, A. (2005), Introduction to Statistical Quality Control, John Wiley. U.S.

Mugerauer, R. (1995), Interpreting Environments: Tradition, Deconstruction, Hermeneutics, University of Texas Press.

Rahimi, G.R. (2010), "Evaluating the health issue in therapeutic areas", paramedical sciences and militaru healthjournal, vol.5, no.1, pp. 53-56.

Rafiei, H. and Samiei, M. and Amini Rarani, M. and Akbarian, M. (2010), "Iran's social health with consensus-based approach and evidence-based indicators", social issues of Iran, vol.1, no. 2 PP. 31-51. Doi: http://ensani.ir/file/download/article/20130611084022-9824-9.pdf

Sameh, R. (2013), Architecture and the quality of human life, explaining the concept of "quality in architecture" based on the Islamic epistemology, PH.D thesis, Tehran University, Tehran.

Sameh, R. (2018), "the concept of quality in architecture", journal of archirectural thoughts, vol.2, no.3, pp. 44-64. Doi: http://at.journals.ikiu.ac.ir/article_1424_818e4c55223c5b21978e7c06c01de0ad.pdf

Soleimani, E. (2016), "Evaluation of mental health and quality of life with the mediating role of spiritual health in students", journal of culture in the islamic university, vol.6, no. 4, pp. 565-584. Doi: http://ciu.nahad.ir/article_387_ba3cf40c8acf1faef5636c09af935556.pdf

Rossi, A. (1982), Architecture of the city. Cambridge Mass: MIT press, UK.

Shaw, M. (2004), "Housing and public health", Annual Review of Public Health, vol. 25, no.1, pp397-418. Doi: https://www.annualreviews.org/doi/pdf/10.1146/annurev.publhealth.25.101802.123036

Szalai, A, and Andrew, F. (1980), The Quality of Life. SAGE STUDIES IN INTERNATIONAL SOCIOLOGY: ISA.

Thomson, H. and Petticrew, M. (2005), Is Housing Improvement a Potential Health Improvement Straregy? Geneva: WHO Health Evidence Network (Geneva: WHO).

Ulengin, B. and Ulengin, F. and Guvenc, U. (2001), "A multidimensional Approach to Urban Quality of Life", European Journal of Operational Research,vol.130, no2, pp. 361-374. Doi: https://doi.org/10.1016/S0377-2217(00)00047-3

Victorson, D. and Cella, D. and Wanger, L. and Kramer L. and Smith M.L. (2007), Measuring Quality of Life in Cancer Survivors, Handbook of cancer survivorship, New York, Doi: https://doi.org/10.1007/978-0-387-34562-8_6

Voordet, D.J, and Wegen, H.V. (2005), Architectur in use. Oxford Elsevier: Architectural Press, UK.

Pakzad, J. (2002), "qualitative Criterias for evaluating the quality of space", journal of Abadi, vol.2, no.2, pp. 94-103. Doi: http://drive.mrud.ir/ms/Abadi/Abadi39/94-103/mobile/index.html#p=1

Voordet, T.J.V. and Wegan, H.V. (2013), "Architecture in use: an introduction to the programming, design and evaluation of buildings", Architectural press, London.

Zabihi, H. and Farah, H. and Rahbarimanesh, K. (2011), "Investigating the relationship between the level of satisfaction with residential complexes and the effect of residential complexes on human relations (case study: residential complexes in Tehran)", journal of hoviatshah, vol.5, no.8, pp. 103-118. Doi: https://www.sid.ir/fa/Journal/ViewPaper.aspx?ID=156073.