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EVALUATION OF THE ROLE OF LIVING SPACES IN THE CITIZEN'S
QUALITY OF LIFE
(CASE STUDY: TEHRAN METROPOLIS, DISTRICT 12)

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ABSTRACT

As a primary need of human which creates the sense of satisfaction, housing plays a fundamental role in improvement of quality of life; so that, in addition to harmful effects on mind, inappropriate and nonstandard housing can directly and indirectly cause social consequences such as delinquency, crime commitment, and violation of rules and regulations. Ruined, crowded, and nonstandard houses and neighborhoods with low ownership rate are considered as some of the crime hot spot factors. The data obtained from the questionnaires were analyzed by statistical methods (Spearman's correlation and regression tests) in SPSS with the goal of investigating the role of living and residential spaces in citizens' quality of life in Tehran Metropolis, district 12. The population includes the neighborhoods of Tehran, district 12. Based on the performed field studies, 383 neighborhoods were randomly selected as the samples. According to the results of Spearman's correlation, in all the neighborhoods except Darvazeh Shemiran, housing quality is closely related to quality of life. The results suggest that among the 10 indicators of quality of life included in regression test, the five indicators of economic justice, personal wellbeing, access satisfaction, environment quality, and housing quality have been investigated in the model; these indicators explain 46 percent of the changes of the dependant variable. Regarding the significance value, the research hypothesis is approved. Among the quality of life components, economic justice has had the highest effect on the changes of housing quality in the neighborhoods of district 12.

INTRODUCTION

Since the mid 1960s, with the emergence of negative consequences of development in one hand, and the highlighted concerns on the other hand, economic growth raised questions as the main goal of development. Meanwhile, some efforts were made for recognition of economic growth and its relevant policies as one of the tools for achieving development goals rather than a goal itself. In the early 1990s, social development components such as social capital, social solidarity, etc. were introduced in development literature. In other words, some fundamental changes were made in the

hierarchy of development goals, and social well-being and quality of life were considered as the main development goals emphasized by UN. These goals lead to realization of decreased poverty and environmental degradation, increased health and lifetime, and in general, promoted quality of life (Ghafari et al, 2012: 108).

In such as a context, the approach to promotion of the quality of residential places has been emphasized by researchers of urban development, sociology, and politics as a strategy for achieving optimal urban life (Mohammadi and Izadi, 2014: 78).

In fact, it can be stated that uncontrolled and rapid development, excessive population density and concentration in big cities have eliminated the healthy urban life in these cities; as a result, the cities will not have the capacity of providing necessary services for residents (Bazi and Afrasiyabirad, 2009: 111). Studies of quality of life will be useful in recognizing the regions faced with problem, the causes of people's satisfaction, the citizens' priorities in their life, and the effect of socio-demographic factors on quality of life (Santos and Martins, 2007: 413). In other words, the rapid growth of urbanization in the recent decades and lack of attention to qualitative dimensions of human life have led to unfavorable consequences affecting individual and social health in the cities. Furthermore, these phenomena have created an unfavorable cycle of socioeconomic and environmental imbalances and decreased quality of urban life (Ghadami and Motaghd, 2013: 33-34).

Residential areas in different districts of Tehran have different qualities. Obviously, neighborhoods with a higher quality attract more people's attention to live there, and neighborhoods with lower quality are considered as undesirable places. Various factors can be involved in choosing the residential areas. These factors include the hierarchy of major applications and services, performance of difference urban sectors, urban environment, the extent and quality of social services, social security in urban spaces, the current urban activities, access to urban spaces, the location of applications and the major urban spaces in the context of the city, the residents' native identity and culture, etc.

As one of the central regions of Tehran, district 12 is faced with problems such as land shortage, high price of land properties for housing construction, lack of service places, access and traffic problems, residential interference of different cultures, lack of green spaces, lack of the sense of place and vitality, inconsideration of construction, climatic and facility standards, housing facade problems, etc. All these problems have decreased the quality of life in this region and led to the residents' dissatisfaction. The present research is aimed at investigating these problems, the solutions for promoting the quality of life and residential environments in the studied regions.

The problems caused by decayed texture especially in down regions of Tehran such as district 12 have lowered the living standards in these areas and caused the expansion of social abnormalities, insecurity, lack of safety against expected and unexpected incidents, and other problems. This issue is discussed in this research. In fact, the fundamental subject of this research is the decreased quality of life in residential areas of district 12 as the residential area of low-income class; because with the increasing need to housing for

this class, the quantitative aspects of housing construction have dominated the qualitative aspects in this region. As a result, construction of small houses with the minimum area and lacking architecture and urban development standards has been considered as a priority to meet the people's quantitative needs. In other words, elimination of some of the residential functions in houses, inconsideration of residential properties in designing the new houses, and inconsideration of psychological, aesthetic, and social qualities in construction of collections are some of the causes leading to decreased quality of life for this class.

Nowadays, quality of urban life is considered as the most important key concept in urban planning. Accordingly in most developed countries, planners try to investigate the levels of quality of life in different geographical levels to find optimal solutions for improving quality of life in mean areas (Lotfi, 2009: 43).

As the humans' primary need which is so effective in their satisfaction, housing plays a fundamental role in quality of life. Since housing is considered as one of the important dimensions of quality of urban life, investigation of housing quality levels in different urban regions is an effective step towards determining the levels of quality of life and the residents' satisfaction (Seyfoldini et al, 2013: 212-214).

In fact, housing is a fundamental component of quality of life and sustainable development (Winston, 2008: 212).

If we consider the human's fundamental material needs including biological, economic, and social needs, housing plays a major role in meeting all these three needs (Pourmohammadi, 2003: 23).

One of the most important components of urban planning is housing development; economic factors such as cost of living, employment, and unsustainable income play a major role in housing planning (Sendich, 2006: 185).

Furthermore, these changes in living spaces lead to social, individual, and psychological harms. So, nowadays the government and housing authorities seek for solution to counter this problem. As a result, in order to propose appropriate solutions, we should first become aware of the current situation and the quality of people's life. Tehran is currently faced with such problems. The problems caused by decayed texture especially in down regions of Tehran such as district 12 have lowered the living standards in these areas and caused the expansion of social abnormalities, insecurity, lack of safety against expected and unexpected incidents, and other problems. This issue is discussed in this research. In fact, the fundamental subject of this research is the decreased quality of life in residential areas of district 12 as the residential area of low-income class; because with the increasing need to housing for this class, the quantitative aspects of housing construction have dominated the qualitative aspects in this region. As a result, construction of small houses with the minimum area and lacking architecture and urban development standards has been considered as a priority to meet the people's quantitative needs. In other words, elimination of some of the residential functions in houses, inconsideration of residential properties in designing the new houses, and inconsideration of psychological, aesthetic, and social qualities in construction of collections are some of the causes leading to decreased quality of life for this class.

BACKGROUND

In the second half of the 19th century, emergence of industries and the Industrial Revolution started a new era and made significant changes in architecture and urban development. Population growth besides the migrations from villages to cities and the change in production forces led to rapid growth of the cities' population. In this situation, cheap houses were built without any principled planning and design in order to respond to the housing needs. Semi-open two floor buildings were replaced for one floor buildings in order to save costs and lands. These buildings were constructed for residence of low-income households (Oliver & Huxley, 1996: 13).

The first study on quality of life was reported in the University of Manchester; in this study, Shuttleworth investigated the workers' moral and physical condition in Manchester spinning factory in 1836 (Oliver, 1996: 47).

In all societies, improvement of quality of life has been considered as an explicit and implicit goal of general policies over all centuries. In some advanced societies, this term is accompanied and sometimes equivalent to other terms such as public well-being, social welfare, social security, etc. From historical viewpoints, the first efforts for evaluating the quality of life have mainly originated from social movements. Since 1930, research works in different areas have been started in order to define, investigate, and measure the quality of life by different approaches. In 1933, a sociologist proposed a report of people's social attitudes in Chicago. This report significantly contributed to the perception of practical notions of social indexes and the concepts of quality of life in social sciences.

Over time, the concept of quality of life included all humans and their desires for achieving the maximum welfare in their life (Amini, 2006: 3). Taghipour et al(2015), studied Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor. Rezvani Befrouei & Taghipour (2015), discussed Identification and Management of Risks in Construction Projects. Taghipour et al.(2015), studied Construction projects risk management by risk allocation approach using PMBOK standard. Taghipour et al(2020), studied Evaluating CCPM method versus CPM in multiple petrochemical projects. Seddigh Marvasti MA et al(2015), studied Assessing the Effect of FRP System on Compressive and Shear Bending Strength of Concrete Elements. Jalili et al(2015), studied Utopia is considered to be the physical form of an ideal human society where the goals are met. Rezvani Befrouie A et al(2015), discussed the design of high-rise building with ecological approach in Iran (Alborz Province). Taghipour et al(2015), Seismic Analysis (Non-Linear Static Analysis (Pushover) and Nonlinear Dynamic) on Cable-Stayed Bridge.. Taghipour et al(2018), studied the Study of the Application of Risk Management in the operation and Maintenance of Power Plant Projects. Taghipour et al(2020), studied Assessment and Analysis of Risk Associated with the Implementation of Enterprise Resource Planning (ERP) Project Using FMEA Technique. Taghipour et al(2015), studied Necessity Analysis and Optimization of Implementing Projects with The Integration Approach of Risk Management and Value Engineering. Taghipour et al(2015), studied Risk assessment and analysis of the state DAM construction projects using FMEA technique. Taghipour & Ahmadi Sarchoghaei (2015), studied

Evaluation of Tourist Attractions in Borujerd County with Emphasis on Development of New Markets by Using Topsis Model. Abdollahzadeh & Taghipour (2015), studied Identify and Priorize Suitable Area for Ecotourism Development using Multi-criteria Analysis for Development of the Tourism Market in Iran (Nathanz City). Mirzaie et al(2015), studied The Relationship Between Social Bearing Capacities with Conflict as a Result, in the Perception of the Visiting Historical Sites. Taghipour et al (2015), studied Analysing the Effects of Physical Conditions of the Workplace on Employees Productivity. Taghipour et al(2020), studied Application of Cloud Computing in System Management in Order to Control the Process. Khodakhah Jeddi et al(2016), studied The Analysis of Effect Colour Psychology on Environmental Graphic in Children Ward at Medical Centers.

Up to 1970s, quality of life was considered fundamentally related to material concepts and the consequences of economic growth. In 1970s, the efforts resulted in various research works for recognizing the social indicators of quality of life (Massam, 2002: 16).

In 1970s, David Harvey investigated these issues in 4 papers. Food, housing, health services, education, social services, environmental services, consumer goods, recreational facilities, neighborhood favorability, and transportation vehicles are considered as 9 categories of human needs; Harvey believes that people need at least a minimum level of these categories. In the book "Justice, Nature, and the Geography of Difference" (1996), Harvey has mentioned factors such as income, different living spaces, race, etc. and their effects on poisoning, anemia, healthcare, etc. (Harvey, 1996: 394).

"The theory of citizen satisfaction" was proposed in 1975. This theory is an analytical model that is based on the citizens' satisfaction with their residential environment from the aspects of physical, social, economic, environmental, aesthetic components, etc (Orang, 2006: 30).

Campbell and Fiske (1978) investigated the components of marriage and family life, health, friendship, job, urban life, unemployment, education level, and living standards (Flangan, 1982: 64).

1990s was the starting point of the issue of quality of social life with an emphasis on social constructs such as social capital, social solidarity, etc. Tendency to urban environments unprecedentedly expanded during 1990s. Along with the new flow of sustainable development, many international, national, regional, and local institutes developed some plans for the quality of urban life. Meanwhile, many international organizations accepted the development of indicators of sustainable city environmental quality as the requisite of effective planning for urban environmental management. Although it seems to be a familiar concept to all, it has no accepted definition (Massam, 2002: 8).

The construct of quality of life has significantly attracted the attentions in Iran since the early 2000s. It can be mainly due to the growing intervention of different scientific areas in quality of life issues. Since the late 1990s, quality of life issues moved beyond medical and psychological areas, and other scientific areas especially social sciences found the opportunity to propose new approaches to this construct by changing the indicators and components of quality of life (Ghafari et al, 2012: 121). Table 1 presents some of the recent studies investigating environmental quality.

Table 1. Studies investigating environmental quality (resource: the author)

Authors	Research title	Year	Indicators	Results
Bonaiuto	Residents' perception of the quality of their residence place in seven neighborhoods of the city of Rome	2003	Green space, access, individual and social interactions, welfare services, recreational services, transportation services, trade services, etc.	When buildings have a higher aesthetic quality, people feel more satisfied with the building density (Bonaiuto, 2003: 76).
Hasan	Evaluation of the quality of residential areas in residential projects of Penang, Malaysia	2003	Housing possession, individual characteristics, housing price, demographic characteristics, and project location	Age and possession manner are considered as effective variables in housing satisfaction (Hasan, 2003: 123).
Lee	Evaluation of quality of life in Taipei	2008	Subjective indicators	Residence place, marital life, education level, and income are effective in different components of satisfaction; social status, local attachment, and satisfaction with neighborhood are the most effective factors in satisfaction with the quality of life (Lee, 2008: 135-170).

Rafeieyan	Evaluation of residence satisfaction among the residents of Navab neighborhood	2009	Collection facilities, view, physical properties, neighboring relationships, hygiene, and security	Residents' satisfaction in Navab neighborhood is at a medium level (Rafeieyan, 2009: 78).
Azizi & Arasteh	Analysis of residence satisfaction in Yazd	2011	Physical indicators, urban and regional arrangements, environmental and ecological conditions	The highest levels of satisfaction with the quality of residential environments have been respectively reported in the central, outer, and inner (historical texture) parts of the city (Azizi & Arasteh, 2011: 100).
Radermacher	Quality of life, facts and theories	2015	Financial situation, employment, health, education level, social relationships, leisure, physical and economic security, government and constitutional law, natural and living environments	Quality of life is a concept beyond economic production and living standards. Quality of life is a multidimensional concept (Radermacher, 2015).
Zainal et al	Investigation of the relationship between housing conditions and quality of life among low-income people in the cities of Malaysia	2012	Physical properties of housing, possession manner, welfare and service facilities,	A significant relationship was found between housing quality and quality of life (Zainal, 2006: 18).

			health, and security	
Mills	Housing quality is a key issue in achieving a sustainable society and promoted quality of life	2006	Social, economic, environmental, and health indicators of housing	Sustainable societies require sustainable housing from the aspects of technical and health components and consistence with the environment (Mills, 2006: 34).
Brereton and Bullock	Analysis of the quality of rural life in Ireland	2011	Economic indicators (income security, housing possession, etc.), social indicators (the sense of belonging to the society), and environmental facilities (access to green space and environmental quality)	In rural regions of Ireland, satisfaction with life continuously grows due to the existing conditions. The most significant changes in attitudes are related to the way of provision of facilities and services. Also, rather than housing cost, problems of rural life mainly include access to healthcare and public transportation (Brereton, F and Bullock et al, 2011, 227).
Lim wan et al	Quality of life in Chinese Metropolises	2019	Financial situation, employment, health, education level, social relationships,	The authors consider their research presenting different aspects of well-being and combining

			leisure, physical and economic security, government and constitutional law, natural and living environments	the objective indicators and subjective assessment of quality of life aspects for the first time.
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Theoretical backgrounds

Attitudes towards the quality of life

Quality of life is basically characterized by different criteria one of the most important of which is explanation of physical quality and security in living spaces. Paying attention to these criteria leads to decreased risk of decline of the residents' vitality and lack of peace in living spaces.

These criteria are defined from both objective and physical attitudes such as access to facilities, construction quality, building façade, materials, and installations, and also subjective attitudes including sustainable peace, the sense of security, and satisfaction with the access to facilities, etc.

Quality of life is literally defined as the way of living. Nevertheless, it has a unique meaning for every individual. Depending on the context in which the way of living is investigated, quality of life can have different definitions.

Studies suggest that the concept of quality of life is so expanded that includes other concepts such as a good, valuable, satisfactory, and happy life (McCrea et al, 2004: 77).

So, it is necessary to pay attention to social, cultural, environmental, physical, and mental factors from both objective (quantitative) and subjective (qualitative) aspects to plan for promotion of the quality of urban life. In other words, in addition to objective measurement of the indicators, subjective aspects and the citizens' attitudes towards these indicators should be also paid attention (Kokabi et al, 2005: 6).

Lim Wan et al considered their research presenting different aspects of well-being and combining the objective indicators and subjective assessment of quality of life aspects for the first time. Quality of life is a concept beyond economic production and living standards. Quality of life is a multidimensional concept including 9 dimensions. 8 dimensions are related to the individuals' capabilities in their definition of happiness based on their values and priorities in their life. These 8 dimensions include financial situation, employment, health, education level, social relationships and leisure, physical and economic security, government and constitutional law, and natural and living environments. The last dimension is related to every individual's overall experience based on his/her understanding of quality of life (Chyi Lim Wan et al, 2018: 1122).

Aparecida et al (2018) defined quality of life as the individual's perception of his/her family and social life, job, and health. Shalouk defined quality of life as a subjective concept originating from the individuals'

perception of their personal life and their perception of others' satisfaction (Aparecida, 2018: 102).

Housing quality

As a primary need of human which creates the sense of satisfaction, housing plays a fundamental role in improvement of quality of life. So, since housing is considered as one of the most important dimensions in studying the quality of urban life, recognition of the levels of housing quality in different urban regions is an effective step towards explaining the levels of quality of life and the residents' satisfaction in cities (Seyfoldini et al, 2013: 212-214).

In fact, housing is a fundamental component of quality of life and sustainable development (Winston, 2008: 212).

If we consider the human's fundamental material needs including biological, economic, and social needs, housing plays a major role in meeting all these three needs (Pourmohammadi, 2003: 23).

One of the most important components of urban planning is housing development; economic factors such as cost of living, employment, and unsustainable income play a major role in housing planning (Sendich, 2006: 185).

Regarding the wide effects of housing on urban environments, housing sector plays a major role in realization of the goals of sustainable urban development. Accordingly, housing sustainability is considered as an important step towards sustainable urban development (Bezy et al, 2010: 25).

As already stated, residential elements and spaces have a limited lifetime and they become affected by decay over time, and it can lead to the decline of optimal living conditions. Furthermore, these changes affect the quality of human life from different aspects such as residence, employment, health, etc, and lead to the households' residential relocation. Therefore, these changes affect the optimal living conditions such as housing, welfare facilities, satisfaction with residence, quality of life, and social status (Winston, 2008: 215).

Housing sector can be considered as one of the most important development sectors of a society. With its wide economic, social, cultural, environmental, and physical dimensions, this sector is so effective in presentation of the society's image properties (Azizi, 2004; 35).

So, it is important to investigate living spaces due to their effect on important planning indicators such as quality of life.

Qualitative housing indicators are considered as housing facilities that have been used by population crisis committee for evaluation of quality in metropolises of the world; these indicators significantly affect health, safety, and living conditions (Aghasafari et al, 2010: 75).

Housing is the main element of people's sociability containing symbolic values representing for the dignity of urban life and the most important qualitative and quantitative urban application. Housing quality indicates the socioeconomic situation of the cities and most of the realities of a society (Schewartz, 2006: 5).

The modern issues in the area of housing including "mass housing", "governmental housing" or "public housing" are considered as the modernists' innovations. The primary ideas of these phenomena are currently seen in the form of regular and uniform concrete cubic rectangles with a

balcony. It was not unusual that such an extreme and non-human condition in 1920 would lead to the abnormal situation in 1990. In this regards, some of the contemporary architects such as Moshe Safdie from Canada (in Habitat-2 project) tried to integrate the two mentioned ideas to create a more common approach (Soaita, 2019: 33).

In advanced countries, housing is considered as a dimension of social welfare, and housing development programs are focused on qualitative improvement. However in developing countries, lack of resources, poor economic management, lack of comprehensive national plans, and the increasing population growth have changed housing supply into a complex and multidimensional problem (Wood Field, 1989: 5).

In addition to negative mental effects, inappropriate and non-standard housing has direct and indirect effects such as social consequences, delinquency, crime commitment, and violation of rules. Ruined, crowded, and nonstandard houses and neighborhoods with low ownership rate are considered as some of the crime hot spot factors (Walmsly, 1988: 141-143).

Studies have shown that providing housing for low-income classes helps to improvement of children's life in these families (Lovell & Isaacs, 2008: 21). From historical viewpoint, the policies emphasizing housing construction for low-income classes have paid less attention to its environmental consequences (Turner, 2008: 319-358).

A review of housing condition in different societies suggests that no country can claim to having solved the problem of housing. Nevertheless, developing countries such as Iran are faced with more problems such as lack of housing, low quality of housing, high prices, marginalization, informal settlements, etc. Indicators and criteria of measuring quality of life are investigated in subjective and objective dimensions. Regarding the social, economic, physical, environmental, and psychological effects of housing on urban environments, it can be found that most of the goals of sustainable development and quality of urban life can be realized by housing quality and sustainability. Investigation of qualitative and quantitative indicators of urban housing can be an appropriate solution for evaluation of the quality of urban life and the citizens' satisfaction; because the role of housing in people's life is beyond a shelter and housing quality is effective in people's identity, physical welfare, and mental peace.

Various factors are involved in choosing a neighborhood for living. Although some of the qualitative indicators of a residential place (such as better access, more favorable green space, better services, etc.) may be relatively prioritized, it may not be easily possible to compare residential places due to various reasons such as common cultural, social, and economic characteristics among the residents. So, it seems more rational to investigate the favorability of a residential place by comparing that to itself. In other words, increased or decreased favorability of residence in a neighborhood can be presented in terms of time, and it can be achieved by comparing the quantitative indicators that present the increased or decreased favorability of that place (Ren et al, 2019: 320).

The effective components in increased quality of sustainable housing that lead to increased quality of the residents of a neighborhood include the following: population, residents' persistence coefficient, the balance between occupations and housing, multiple applications of lands, decay, efficient

building design, walking to work, recreation, controllable housing costs, variety of designs and housing type, increased density of residential places, social spaces, the sense of place, transportation integration, the residents' satisfaction, employees, safety and security, environmental protection, and maintenance of natural and environmental processes and functions (Samantha et al, 2019: 45).

So in recent decades, paying attention to housing properties has become an important issue in qualitative studies of housing. Qualitative study of housing efficiency and its components is considered as a basis of developing practical policies and strategies for promotion of housing quality. Regarding the factors mentioned in theoretical foundations, the conceptual model of the research is developed as the following.

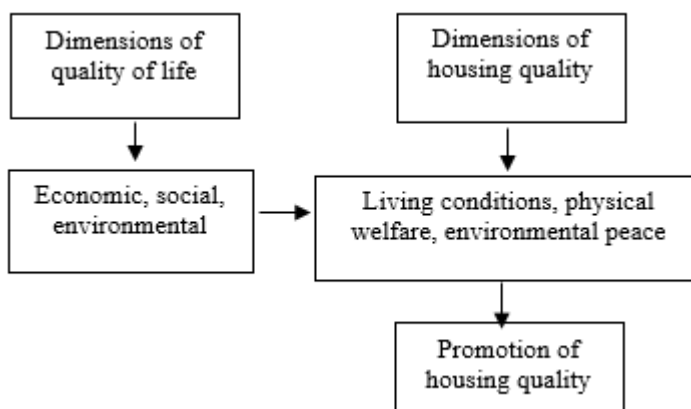


Figure 1. Conceptual model of the research

METHOD

In terms of purpose, this research is an applied developmental study, and in terms of method, is a descriptive-analytical one. Data collection has been done by library studies and survey. The theoretical literature was investigated by descriptive and documentary methods and reviewing the literature of quality of life and housing quality. Analytical methods were used for quantifying the variable of quality of life and its effect of housing quality. The criteria were selected based on the theoretical foundations, the previous studies, and the research goal. In this research, the independent variable included 10 indicators in the 3 dimensions of economic, social, and environmental factors, and the dependant variable included 10 indicators in physical, environmental, living, economic, and welfare dimensions. Table 2 presents the dimensions and indicators of the research variables.

Table 2. Dimensions and indicators of the research variables (resource: the author)

Quality of life			Housing quality		
Dimension	Cronbach's alpha coefficient	Indicator	Dimension	Cronbach's alpha coefficient	Indicator
Economic	0.64	Income quality	Physical	0.46	Durability and strength

		Employment status	Environmental	0.36	Saving energy
		Economic justice			Local materials
Social	0.82	Social capitals	Living situation and economy	0.83	Environmental degradation
		Participation (women and the youth)			Housing and production
		Population persistence			Quality of employment and housing
		Satisfaction with access			Technical and engineering
		Individual well-being			Environmental safety
Environmental	0.59	Environmental quality	Welfare	0.71	Behavioral welfare
		Housing			Public welfare
Total	0.81		Total	0.74	

In this research, the analysis unit is family. The data obtained from the questionnaires were analyzed by statistical methods such as Spearman correlation test and regression in SPSS software. Also, the research was done by using Excel software. The hypotheses were tested by multivariate analysis of regression. The population includes the neighborhoods of Tehran, district 12. Based on the field studies, out of the 239611-people population of the neighborhoods, 383 people were randomly selected by Cochran's formula. As presented in table 3, the number of households in the studied neighborhoods was 78506, and based on Cochran's formula and with the error coefficient of 0.065, the sample size was determined as 383 people. The number of samples was calculated relative to the share of households in each neighborhood. In order to make sure of reliability and validity of the concepts and items, the questionnaire was first distributed among 30 people, and then, Cronbach's alpha was calculated as presented in table 2. Table 2 presents the population, the number of households, and the sample size determined based on Cochran's formula.

Table 3. The selected neighborhoods, population, and households of Tehran, district 12 (resource: the author)

Neighborhood no.	Neighborhood name	Population	Households	Sample size
1	Abshar	22250	7380	32
2	Pamenar	2932	977	4

3	Emamzadeh Yahya	14024	4562	20
4	Iran	22044	7286	31
5	Bazaar	6179	2106	9
6	Baharestan	16505	5521	24
7	Takhti	22144	7207	31
8	Darvazeh Shemiran	33297	10596	47
9	Sanglaj	26829	8814	38
10	Shahid Harandi	22720	7469	32
11	Ferdowsi	8467	2768	12
12	Ghiyam	18190	5952	26
13	Kosar	24030	7868	34
Total		239611	78506	383

FINDINGS

Field survey and the descriptive data obtained from the observations and filling the questionnaires are some of the information resources that help to get a better recognition of the research area. So, the most important descriptive information obtained from the field studies are proposed in the following. This section includes the participants' individual characteristics and the descriptive statistics of the indicators.

Table 4 presents the statistics of the variables and dimensions of quality and life and housing quality in district 12. According to the results, the values of standard deviation for quality of life and housing quality are respectively equal to 0.26 and 0.30, and mean values are respectively equal to 2.92 and 3.31. According to table 4, the mean values of quality of life and its components are at a medium level except the living dimension (that is above medium). Also, the mean values of quality of life and its components are above medium.

Table 4. Mean, median, and standard deviation of the dimensions and variables (resource: the author)

		Mean	Median	SD
Dimensions of quality of life among the residents of district 12	Economic dimension	2.77	2.73	0.3
	Social dimension	2.88	2.92	0.37
	Biological dimension	3.27	3.2	0.36
Variable	Quality of life	2.92	2.94	0.26
Dimensions of housing	Physical	3.6	3.33	0.61
	Environmental	3.38	3.33	0.56
	Livelihood	3.12	3	0.59
	Welfare	3.32	3.31	0.37

quality in district 12				
Variable	Housing quality	3.31	3.31	0.3

The relationship between housing quality in Tehran, district 12 and the residents' quality of life

As the indicators have an ordinal scale, the correlation between the indicators is calculated by Spearman's correlation test (Gudarzi, 2009: 299). According to table 5, among the dimensions of quality of life, economic and biological dimensions have a direct relationship with housing quality. With the significance level of 0.000 (less than 0.05), this relationship is significant. With the significance level of 0.27 (more than 0.05), there is no relationship between social dimension and housing quality. In general, there is a direct relationship between quality of life and housing quality with a medium strength. Also, regarding the significance level of 0.001 (less than 0.05), the relationship is significant and it can be generalized to the whole population.

Table 5. The results of investigation of the relationship between housing quality and quality of life dimensions in Tehran, district 12 (resource: the author)

Spearman's correlation		Housing quality	
		Statistic	Sig
Dimensions of quality of life	Economic	0.362	0.000
	Social	0.1	0.271
	Biological	0.332	0.000
Variable	Quality of life	0.296	0.001

According to table 6, there is a direct relationship between quality of life and three dimensions of housing quality including physical, environmental, and welfare. Regarding the significance levels for the three dimensions that are respectively equal to 0.003, 0.000, and 0.016 (less than 0.05), this relationship is significant. Economic and livelihood dimensions do not have any relationship with quality of life (sig=0.551). In general, there is a direct relationship between housing quality and quality of life; the relationship is significant (sig=0.001) and it can be generalized to the whole population.

Table 6. The results of investigation of the relationship between housing quality and quality of life dimensions in Tehran, district 12 (resource: the author)

Spearman's correlation		Housing quality	
		Statistic	Sig
Dimensions of housing quality	Physical	0.266	0.003
	Environmental	0.333	0.000
	Livelihood and economy	0.055	0.551
	Welfare	0.218	0.016
Variable	Housing quality	0.296	0.001

Spatial analysis of the relationship between housing quality and quality of life in the neighborhoods of Tehran, district 12

Table 7 presents the relationship between housing quality and quality of life in each neighborhood. According to the results of Spearman's correlation test, housing quality in the 12 neighborhoods of Abshar, Pamenar, Emamzadeh Yahya, Iran, Bazar, Baharestan, Takhti, Sanglaj, Shahid Harandi, Ferdowsi, Ghiyam, and Kosar has a strong direct relationship with quality of life. In all the 12 neighborhoods, this relationship is significant and it can be generalized to the whole population. However, the relationship between housing quality and quality of life is not significant in Darvazeh Shemiran neighborhood (sig=0.0574) and it cannot be generalized (table 7).

Table 7. The results of investigation of the relationship between housing quality and quality of life in the studied neighborhoods (resource: the author)

Neighborhood	Abshar	Pamenar	Emamzadeh Yahya	Iran	Bazar	Baharestan	Takhti	Darvazeh Shemiran	Sanglaj	Shahid Harandi	Ferdowsi	Ghiyam	Kosar
Statistic	0.49	0.74	0.66	0.65	0.69	0.43	0.70	0.14	0.30	0.55	0.38	0.35	0.64
Sig	0.02	0.01	0.04	0.02	0.01	0.04	0.01	0.57	0.00	0.03	0.04	0.00	0.02

Investigation of the effect of residents' quality of life in Tehran, district 12 on housing quality

The effect of quality of life on housing quality was investigated by regression model. Table 8 presents the mean and standard deviation of the indicators and the variable based on regression model.

Table 8. Mean and SD of the indicators and the variable in the regression model (resource: the author)

Variables		Mean	SD
Dependant variable	Housing quality	3.31	0.3
	Income quality	2.74	0.37
Indicators of the independent variable	Employment status	2.57	0.41
	Economic justice	3.08	0.48
	Social capitals	3.1	0.64
	Participation (women and the youth)	2.46	0.61
	Population persistence	2.9	0.45
	Satisfaction with access	2.79	0.46
	Individual well-being	3.15	0.54
	Environmental quality	3.03	0.47
	Housing quality	3.50	0.50

Table 9 presents the correlation, the adjusted coefficient of determination, and the standard error for the indicators included in the model. According to the table, there is a strong correlation for the indicators included in the model. Also, the adjusted coefficient of determination that indicates the variance explanation and the changes of the dependant variable by the independent variable is presented for each of the indicators. So, the final value of the adjusted coefficient of determination is equal to 0.46, and it suggests that the indicators of the independent variable explain 46% of the changes of the dependant variable.

Table 9. Correlation, the adjusted coefficient of determination, and the standard error of the estimate (resource: the author)

Phase	Model	Correlation	The adjusted coefficient of determination	Standard error of estimate
1	Economic justice	0.533	0.278	0.25733
2	Housing quality	0.589	0.336	0.24681
3	Satisfaction with access	0.639	0.393	0.23589
4	Environmental quality	0.678	0.441	0.22636
5	Individual well-being	0.696	0.462	0.22212

Table 10 presents the variables included in the model in each phase, the estimated values of the parameters, standard deviation of the estimated parameters, the standardized regression model parameters, statistic, and significance level.

Table 10. The results of the effect of the obtained coefficients of quality of life regression on housing quality (resource: the author)

Phase	Indicators of the independent variables	Estimated parameters		Standard coefficient (beta)	t statistic	Sig
		Value	SD			
1	Constant value *	2.27	0.15	-	14.9	0
	Economic justice	0.34	0.05	0.53	6.89	0
2	Constant value	1.76	0.21	-	8.36	0
	Economic justice	0.33	0.05	0.52	7.04	0
	Housing quality	0.15	0.05	0.25	3.38	0
3	Constant value	2.1	0.22	-	9.4	0
	Economic justice	0.36	0.05	0.57	7.89	0
	Housing quality	0.16	0.04	0.27	3.76	0
	Satisfaction with access	-0.1	0.05	-0.3	-3.5	0
4	Constant value	1.78	0.23	-	7.58	0
	Economic justice	0.36	0.04	0.57	8.22	0
	Housing quality	0.15	0.04	0.24	3.57	0

	Satisfaction with access	-0.2	0.05	-0.3	-3.4	0
	Environmental quality	0.15	0.05	0.23	3.34	0
5	Constant value	1.56	0.25	-	6.31	0
	Economic justice	0.36	0.04	0.57	8.44	0
	Housing quality	0.15	0.04	0.25	3.75	0
	Satisfaction with access	-0.2	0.05	-0.3	-4.6	0
	Environmental quality	0.13	0.05	0.2	2.88	0.01
	Individual well-being	0.09	0.04	0.16	2.35	0.02
Dependant variable: housing quality						

According to the results, the model has been developed in 5 phases, and in each phase, the most effective variable has been included in the model (although the least important variable might have been excluded from the model, too). Finally, the five indicators of economic justice, housing quality, satisfaction with access, environmental quality, and individual well-being were included in the model and explained 46% of the changes of housing quality. All the significance levels are less than 0.05, and they indicate the significance of the variables. So, the null hypothesis (insignificance of the regression model) is rejected with the confidence level of 99%, and the regression model is statistically significant.

The changes in housing quality= satisfaction with access (-0.319) +housing quality (0.252) + economic justice (0.573) + individual well-being (0.161) + environmental quality (0.201) + 1.561



Figure 1. The relative importance of quality of life in the changes on housing quality based on the standardized beta values (resource: the author)

According to figure1, economic justice has the strongest effect on the changes of housing quality in neighborhoods of Tehran, district 12.

DISSCUSION AND CONCLUSION

Quality of life is basically characterized by different criteria one of the most important which is explanation of physical quality and security in

living spaces. Paying attention to these criteria leads to decreased risk of decline of the residents' vitality and lack of peace in living spaces. As a primary need of human which creates the sense of satisfaction, housing plays a fundamental role in improvement of quality of life. So, since housing is considered as one of the most important dimensions in studying the quality of urban life, recognition of the levels of housing quality in different urban regions is an effective step towards explaining the levels of quality of life and the residents' satisfaction in cities. In addition to negative mental effects, inappropriate and non-standard housing has direct and indirect effects such as social consequences, delinquency, crime commitment, and violation of rules. Ruined, crowded, and nonstandard houses and neighborhoods with low ownership rate are considered as some of the crime hot spot factors. The data obtained from the questionnaires were analyzed by statistical methods such as Spearman correlation test and regression in SPSS software. Also, the research was done by using Excel software. The hypotheses were tested by multivariate analysis of regression. The population includes the neighborhoods of Tehran, district 12. Based on the field studies, out of the 239611-people population of the neighborhoods, 383 people were randomly selected by Cochran's formula. As presented in table 3, the number of households in the studied neighborhoods was 78506, and based on Cochran's formula and with the error coefficient of 0.065, the sample size was determined as 383 people. The number of samples was calculated relative to the share of households in each neighborhood. In order to make sure of reliability and validity of the concepts and items, the questionnaire was first distributed among 30 people, and then, Cronbach's alpha was calculated. According to the results of Spearman's correlation test, housing quality in the 12 neighborhoods of Abshar, Pamenar, Emamzadeh Yahya, Iran, Bazar, Baharestan, Takhti, Sanglaj, Shahid Harandi, Ferdowsi, Ghiyam, and Kosar has a strong direct relationship with quality of life. In all the 12 neighborhoods, this relationship is significant and it can be generalized to the whole population. However, the relationship between housing quality and quality of life is not significant in Darvazeh Shemiran neighborhood ($\text{sig}=0.0574$) and it cannot be generalized. Among economic, social, and environmental dimensions of quality of life, economic and environmental dimensions had a significant direct relationship with housing quality. Among physical, environmental, welfare, livelihood, and economic dimensions of housing quality, physical, environmental, and welfare dimensions proved to have a significant positive relationship with quality of life based on Spearman's correlation test. The hypotheses were tested by multivariate analysis of regression. The results suggest that among the 10 indicators of quality of life included in regression test, the five indicators of economic justice, personal wellbeing, access satisfaction, environment quality, and housing quality have been investigated in the model; these indicators explain 46 percent of the changes of the dependant variable. Regarding the significance value, the research hypothesis is approved. Among the quality of life components, economic justice has had the highest effect on the changes of housing quality in rural regions.

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