Housing Planning for Lower Income Cities with Sustainable Development Approach in Mehregan Township of Mashhad Metropolis

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Abstract

Housing is the most important element of the city, which is of great importance in the sustainable development of the city. Therefore, achieving sustainable housing in order to enhance and improve the quality of life of the present and future generations is a major issue. Housing from various perspectives, including architecture, construction of buildings, residential buildings, land and building costs, housing loans, housing market, housing regulations, house prices, Desirable housing, etc., can be considered. On the other hand, housing is the most important concern of the present-day human being and its most important function is economic performance. And its most important function is economic performance. The housing situation and the analysis of housing prices are of particular importance, because the main goal of urbanization is to create human settlements and, among the various uses of urban land, residential use is of particular importance. Also the share of housing is also significant in quantitative term. One of the indicators for measuring poverty is housing. Good and adequate housing is a housing that does not have too much density. And, in many cases, housing and environmental conditions are the most important factor affecting on level of satisfaction of a person in a neighborhood. Apart from the social class and economic conditions of individuals, housing is always one of the most important needs and priorities of the household. The main factors that have led to provide a place to live become a crisis, especially for low-income groups, are: Rapid population growth, a sharp increase in urbanization rates, lower household size, higher rates of profitability of the land market and housing, reduced demand for housing, reduced access rates and poor financial capabilities of the poor, the plummeting market of land and housing to the detriment of low-income groups, the reduction of land and housing supply, the lack of attention of the private sector and, ultimately, unsuccessful government policies. In spite of various experiences to address the problem of disadvantaged low-income groups, the root cause of this problem is the need to examine its structural factors. This paper has been conducted with the purpose of providing a

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affordable housing pattern for vulnerable urban areas with a sustainable development approach in the Mehregan township of Mashhad Metropolis detachable area using a descriptive-analytical method of applied type. The population of the study is 366 people based on the Cochran formula. Using descriptive and inferential statistics from the completed questionnaires, experts have been analyzed using non-parametric and parametric statistical methods. Since housing is a cross-domain and multidimensional domain, the attitude to it must be all-round and multi-dimensional. Hence, effective policies in the field of housing for low income groups regarding the potential of the marginal areas of Mashhad for system effectiveness will be considered. Finally, in the city of Mehregan, we can solve this problem, By drafting urban planning, architecture and housing construction in accordance with international standards and enhancing their flexibility and encouraging activities in marginalized fabric for the benefit of low income groups and changing the views and plans of urban development projects.

Keywords: Sustainable urban development; Housing; Affordable; Marginalization; Mehraban Township of Mashhad

1 Introduction

Housing is one of the most important elements and factors for achieving sustainable development based on universal justice. How to achieve it for different groups of society, especially low-income groups and their quality and quantity, is one of the most important challenges facing governments and communities. Housing in addition to shelter, is also a durable economic asset. Contrary to consumer goods, therefore, it becomes a form of savings in the form of capital, after supplying the basic necessity and it open a very large area of demand that the provision of it has a different nature with the concept of housing as a shelter (Ziari et al., 2017: 212). In this regard, "In each country, in order to ensure the stability of the society's economy in order to promote financial development, housing is a matter of public importance" (Meshkini and Mirkaml, 2006: 91). Housing is an entity with multi-dimensional function more than the physical structure (Ziari and others, quoted by Barati, 2009: 338), which has different dimensions of spatial, architectural, physical, economic, social, financial, psychological and medical aspects. Since housing has different and fundamental roles for households, it has always been desirable to own, but several factors have made it difficult to access in cities. Some of these factors are:

High rates of population growth, commercialization and increased land market supervision, high construction materials costs, loan financing and household purchasing power reduction and increasing land plots and housing, and rigid standards.(Woodfield, 1989: 5). These factors have led to a lack of adequate housing for the lower income people of the community. "According to research conducted, every year the lower income group is getting away from access to housing. This issue is more severe in Third World countries, about one billion or one third of the urban population of the world live in non-standard housing ", (Ziari et al., 2015: 214). Lower income groups generally refer to three low income deciles of society, which it is very difficult to access affordable housing because of low income and lack of savings, as well as the inability to use the facility. Comparing different deciles in a given time frame shows some remarkable facts about the evolution of the conditions for access to housing among various income groups of the community.

Accordingly, in order to meet the increasing demand for housing, especially housing for low-income groups, it has to be integrated into a coherent system of planning, with a hierarchy of macro-to-peasant settlements, from all local conditions. Parts of the cities of Iran, including Mashhad, have undergone physical and environmental burnout for several reasons, including changing needs, loose physical, social and economic foundations (marginalized areas), mismatch with the functions of the day, the inefficiency of facilities, facilities and equipment, the natural process of exhaustion, the serious neglect of officials and planners, the migration of particular classes and ecological replacement, and so on. And it lacks the attraction and stretch to catch the dynamic population. The city of Mashhad, influenced by the general events and trends of the country since the 1940s onwards, has witnessed rapid population growth and a sharp increase in the number of immigrants that due to its topographic conditions (flattening), land prices and housing were much higher than those of the same size. For this reason, we see the formation of vast areas of informal settlement (about one-third of the total area of the city and 32% of the population according to the census of 2017) and the intensification of the housing problem of low-income groups. To the extent that this issue now faces a serious threat to the city. In the last decade, with the rise of migrations to the city of Mashhad, settlements of a new and much more dangerous nature than neighborhoods with traditional informal settlements with the astronomical development of villages near the city are in the process of being formed, that physical development can be tracked daily. This organization is due to a lack of housing supply and an increase in the gap between effective demand and potential demand, especially among low-income groups. These issues trigger alarms for the city of Mashhad and the entire Razavi Khorasan province .Due to this, the author had to systematically and accurately address the root causes of the problem and examine the factors influencing it. The housing sector, especially the low-income housing sector in Mashhad, is facing a lot of challenges. So that about a third of the population of this large and important city lives in informal settlements and most of the habitats of the primary tissues (primary urban nuclei) have a long history, also the texture is constructed with unstable structures and materials.

2 Theoretical framework

In fact, the root of the word "Housing" from the substance of sedentary means to calm down after movement, residence, tranquility, and humor. Housing is the object of the word "resident". That is where the place is calm and settled. So the most used housing will be the peace of mind of the people being seated there. This peace involves both physical and mental aspects (Inanlou, 2001: 11). At the first human settlement conference held in Vancouver, Canada, in 1976, the first human settlements agenda was launched for the first time internationally. At the conference, global attention was focused on the issue of human settlements and its security. Until then, this problem had not been seriously addressed. In the national programs, the issue of settlement was of lesser importance and even in most countries, the official body responsible for this matter was not exists. But at the 2nd World Conference on Human Settlements held in Istanbul in 1996, the two issues were "Provision of adequate shelter for all" and "Sustainable urban development" in a globalized world. The final document of this conference, called the Human Settlement, has proposed policies and actions to guide national and international efforts over the next two decades to achieve the two main goals (Kharat Zebardast, 2006: 35). The term "sustainability" is now widely used to describe a world in which the natural and human systems together can survive in the long run. Sustainable development with the complex foundations that accompany it has been under review for many years in global texts. The concept of "sustainable development", the "development of the ecosystem", was introduced by the United Nations Conservation Union and the UN Environment Program from the early 1970s. Although the concept of sustainable development was used in the early 1970s on the environment and development, the use of this term for the first time in the middle of the decade goes back to Barbara Ward. At the United Nations Conference on the Environment and Development (1987), sustainable development is defined as follows: it is a process that meets the current needs without compromising the capabilities of the next generation to meet their needs (Tosun, 2008, 289-303). So far, there are several definitions for sustainable development. For example: according to the definition of the World Commission on the Environment, "development

that enables today's needs without losing the ability to meet the needs of the next generation is sustainable development", (Chapman, 2005, 24). Sustainability can have many meanings, which consists of an ecological and an ecological goal for various economic and social activities (Azizi, 2001: 8). Adams discusses sustainable development as a green development and green policy. And it is essential to protect natural resources for the survival of the human race and future generations as the basis for sustainable development (Adams, 1999, 25-50). The theory of health and psychology regards citizens' participation in shaping the city, proper access to services and urban sustainability (Ziari, 2008, 16).

3 Sustainable Urban Development

Sustainable urban development does not mean the sustainable development of any of the economic, social, or environmental sub-systems alone, and that does not mean the sustainability of these subsystems alone. Instead, it tries to balance economic growth, ecology rehabilitation, environmental protection and social progress and the difficulty of this challenge has made it a major focal point of research around the world (Tajik, 1998).

4 Sustainable development in architecture

Sustainable development in architecture is the same as a sustainable architecture or green architecture. Sustainable architecture dates back to the 17th century. John Ruskin, William Morris and Richard Letabi are among the pioneers in the movement of sustainable architecture. In general, the following definitions of sustainable architecture can be raised:

A building that has the slightest inconsistency with the natural environment around itself and in a wider area with the region and the world (Yazdan Dad, Emami, Hashemi, 2008);

Creating a human environment and managing it commensurately with the principles of ecology adaptability and resource efficiency. These principles are: Minimizing non-renewable resources, promoting and improving the natural environment and minimizing ecological damage to the environment.

Sustainable architecture embodies a mixture of aesthetic, environmental, social, political and moral values.

Sustainable design in the inner sense will come from the place. A process that, more than destruction, leads to regeneration and, in fact, the sustainable development is the science and art of right communication between the human environment and the natural world.

5 Sustainable housing

Housing is the most important urban element in the sustainable development of the city, its sustainability is recognized as its most basic form. Housing development in addition to the environment affects the economy and culture and social issues. The main issue in the sustainable development of housing is to pay attention to the current needs of the housing community. In a way that providing today's housing with the smallest change in the natural environment allows the next generation to provide the right environment for themselves to optimize themselves. Housing that sustains the living needs of the current generation based on the efficiency of natural energy sources while at the same time providing attractive and safe neighborhoods while addressing ecological, cultural and economic issues is sustainable housing (Zaker Haghighi, 1998). Consideration of issues such as air inside and outside the building, the prevention of the entry and exit of sound, the coordination between housing and the natural landscape, diversity rather than uniformity, as well as reuse of them is necessary (the same source).

6 Sustainable housing features:

So sustainability is not only about physical problems, but also covers a broader range of social, aesthetic and economic considerations. It should be borne in mind that sustainability is not a punitive measure and it is the result of a continuous process that is the product's sustainability advancements. In the process of sustainable housing, we should consider the following five areas:

Conservation of natural resources (land, energy, water);

Rational use of human resources;

Preserving the ecosystem and its recovery potential;

Justice between products, humans and categories;

Health, safety and safety forecasts (Asad Pour, 2006: 653).

The sustainable development of human settlements and housing should have four aspects:

Housing should be economically sustainable;

Housing should be socially sustainable in accordance with the culture of its inhabitants;

Housing should be materially sustainable and take into account its functions (the same source).

7 Sustainable Housing Standards:

Criteria and Indicators of Sustainable Housing in European Countries:

- - Sustainable land use planning;
- - Resilient settlements;
- - Houses close to work and public transport;
- - High residential density;
- - Stable structures;
- - High standards of efficient energy in housing;
- - Residential access;
- - Quality of housing;
- - Access to high-quality green spaces and residential environments (Winston, 2006: 10).

Table 1 - Some of the main indicators of housing in different countries

Index / country	High income countries	Low-income countries
Household in residential unit	1.01	1.2

People in the room	0.66	2.74
Per capita residential infrastructure	35	6.09
Durable housing (%)	100	67
Plumbing water units (percentages)	100	56
Family size	2.5	5
Room in residential unit	5.2	2
Possession of property (%)	51	33
Standard residential units (no bathroom and toilet in percent)	2	26.6

Source: Hakimi et al., 2011, taken from the United Nations Center for Human Settlements and the World Bank (1991)

Physical dimensions as the physical crystallization of housing is the most objective and material issues in evaluations, analyzes and planning of housing (Sartipipour, 2010: 100). The physical dimensions of housing are of two dimensions; First, the housing unit as a residential unit. The second is the physical relationship of housing with its residential environment, which is a social indicator and raises the role and place of housing in urban development (Tawfik, 1990: 1). In general, the minds of experts have recently focused on the discussion of housing indicators (Arjomandnia, 1975: 54). Indeed, housing indicators are considered to be the most important and key tool in housing planning (Azizi, 1996: 112). Therefore, it seems that one of the best ways to understand different ways of life is to emphasize the type of housing and its indicators and structural conditions (Hataminezhad et al., 2006: 103). Housing indicators, on the one hand, are tools for recognizing the housing situation in different dimensions, and, on the other hand, are key tools for drawing the prospect of future housing and planning (Azizi 2005: 26).

(Continue...)

8 Research Methodology

The research method is a framework that is chosen according to the nature of the problem and the research is done within that context. The present research in terms of purpose is fundamental-applied. In terms of methodology, the research is descriptive-analytic. The collection of basic information in this research has been done through documentary (library) and field studies. In this research, two communities of citizens and experts (responsible managers in the field of urban management) have been used for questioning. Considering the size of the statistical population about the citizens of the whole city of Mashhad (3.057.679 people) and residents of Mehregan city of Mashhad (8000 people), using the Cochran formula, 366 questionnaires were completely completed from the study area. And 30 questionnaires were collected by experts using Delphi method. SPSS and GIS software and Delphi method are also used. Sampling is done in a systematic random manner. Selected samples are divided into three sections: household and residential questionnaires, people's questionnaires (people and authorities), and interviews with selected individuals. The sample size of the household sample is 366 samples, which is obtained through the following formula (Hafez Nia, 1976: 117).

9 Mashhad location and study area

The city of Mashhad is the center of Khorasan Razavi province, in the northeast of Iran and it is located 966 kilometers from Tehran. Mashhad extends at 35 degrees and 43 minutes to 37 degrees and 8 minutes latitudes and 59 degrees and 15 minutes to 60 degrees and 36 minutes longitude. The city is located between Binaloud and Hezarmasjed mountains. Its height from the sea level is 985 meters. The area is about 351.4 km2. And its population is about 3.057.679 people in 2017 and its population is about 3.057.679 people in 1396 (Municipality statistics of Mashhad, 2017). Mehregan is located as an isolated urban area within the territory of the three municipalities of Mashhad and its distance from the shrine of Imam Reza (AS) is 16 km. This area is located in the north-eastern part of Mashhad, in the way to the village of Gherghi.

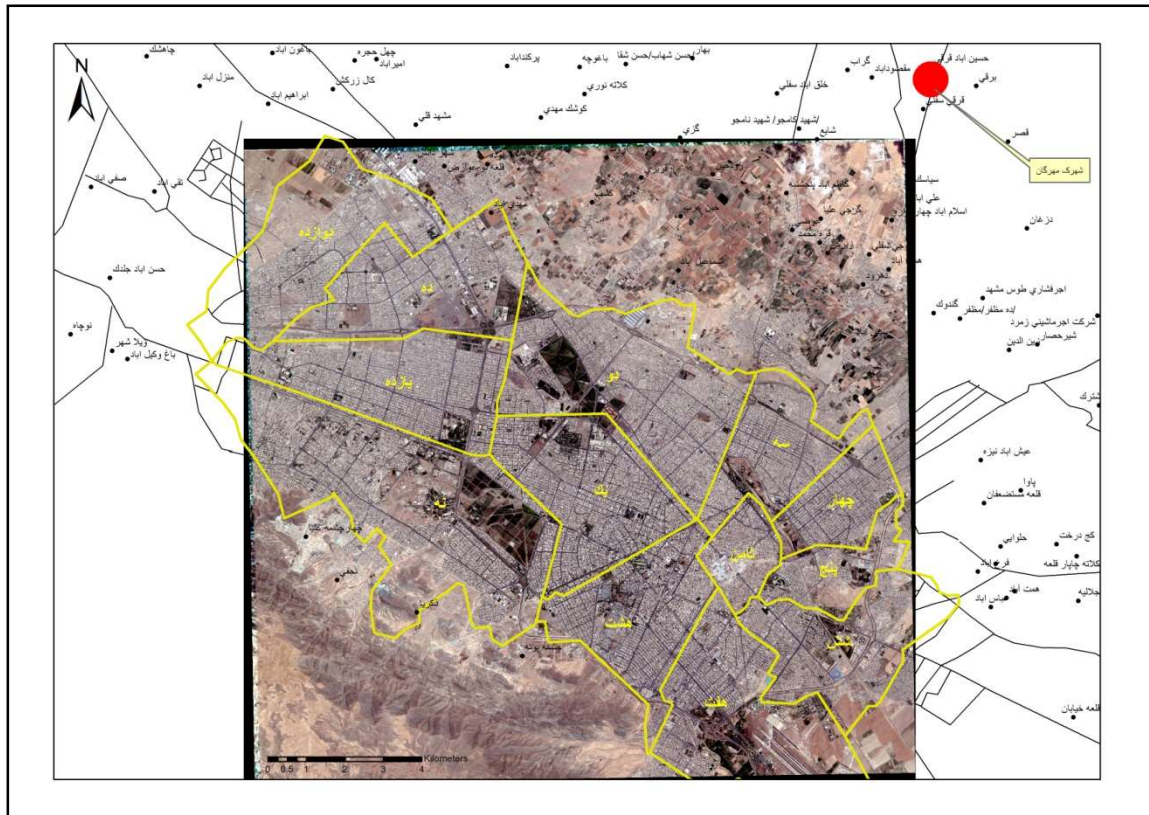Map 1 - Municipality zoning in Mashhad city and location of Mehregan town

Table 2 - The population of Mashhad from 1986 to 2006

Year	1969	1974	1979	1984	1989	1994
Number	1.463.508	1.759.287	1.866.300	2.427.316	2.766.258	3.057.679
Growth rate	3.75	1.41	1.73	1.6	1.3	1.2

Source: Municipality of Mashhad, Report on the status of the 5 year municipal

development plan, 2016: 14-2.

10 Research findings

The table below shows the area status, Population and urban density and per capita urban land during different periods of Mashhad metropolitan Population and Housing Census.

Table 3 - Population and Area of Mashhad in the Periods of 1891-2016

Year	Area (hectare)	Population (people)	Urban density (People per hectare)	Urban Land Capacity (m²)
1891	750	45000	60	167
1931	1040	100000	96	104
1956	1600	240000	150	67
1966	3200	400000	125	80
1976	7800	716000	92	109
1986	18500	1463000	79	127
1996	26100	1887000	72	129
2006	30000	2427000	81	124
2011	31500	2766258	88	121
2016	35147	3057679	87	115

References: Population and Housing Censuses of Iran's Statistics Center, 2016.

11 Integration of villages in the physical context of Mashhad city

Since the very beginning of the Mashhad city, it has many villages and places. Villages that have been merged into the city in the years ahead, from the 1956s to the 1966s, are now considered to be the old townships of the city, such as Ghale Abkooh, Shadkan, Alendasht, Samarghand, etc. (Sarrafi, 2000: 27). Over the past 50 years, due to urban and industrial development in the suburbs of Mashhad, 34890 hectares of agricultural land with varying degrees of quality have been removed from the agricultural production cycle and has gone into urban infrastructure. The population of the changed villages in Mashhad will reach over 700,000 in the next 50 years (Ahmadian and Qasemi, 2013: 162).

Table 4 - The contribution of integrated villages to population growth in Mashhad (1956-2006)

Year	At the end of the course	Integrated villages	Integrated population	Population growth in every decade	changed villages	Percentage of the changed village
1956-1966	409000	8026	4.4	1.96	8	8.9
1966-1976	667777	10464	5.7	1.57	23	25.6
1976-1986	1443508	47815	25.9	3.26	31	34.4
1986-1996	1886000	2404	1.3	0.12	14	15.6
1996-2006	2427216	115681	62.7	4.77	14	15.6
Total	-	184400	100	-	90	100

Source: Ahmadian and Ghasemi, 2013: 161

The economic situation of the people of Mashhad in 2016, based on the results of the Population and Housing Census of Iran's Statistics Center, is shown in the table below.

Table 5 - Average annual income of a household (1) in terms of income and province: 2017 (Thousand Rials)

Description	Khorasan Razavi
Average number of people in households	3.39
Average number of people with income in households	1.32
Coefficient of variation (CV) (2)	0.0479
Total	273129

Income from wages	92.832
Income monetary from public wages	28313
Non-monetary from public wages	4303
Monetary income from co-opmental wages	0
Non-Monetary income from co-opmental wages	0
Monetary income from private wages	54204
Non-Monetary income from private wages	6012
Income from Free Jobs	43038
Monetary income from free agricultural jobs	4529
Non- Monetary income from free agricultural jobs	270
Monetary Income from Non-Agricultural Free Jobs	37673
Non- Monetary income from non-agricultural Free Jobs	566
Miscellaneous Income	137259
Monetary Miscellaneous Income	80787
Non- Monetary Miscellaneous Income	56473

Source: Survey design of cost and the income of urban households in 2017

Table 6 - Advantages and Disadvantages of Mehr Housing Design in Iran

Benefits of Mehr Housing Plan	Disadvantages and Pathology of Mehr Housing Plan
-Cheeping while respecting the required standards	-Problems with locating and preparing
-Making housing in circulation, up and down the share of fixed costs per meter (Monitoring costs, manpower, etc.)	-Cultural Problems in Small Cities -Problems of management area -Scheduling in new cities
-Increasing the chances of being homeowners in low-income groups	-Not considering cultural conditions (different types of housing)
-Ability to use inexpensive facilities and prevent the Land Exchange	-Lack of infrastructure and urban services

Source: Habibi, Behzadfar et al., 2010: 13-6

Based on the above table, the lack of attention to cultural conditions and the severe shortage of service infrastructure in designed homes is one of the most important disadvantages of these buildings.

Statistical analysis of citizens and managers questionnaire

A) Analysis of citizen's views on the housing situation in the city of Mehregan

Table 7 - Number and percentage of respondents for the length of stay in this building

Duration of stay in this building	Frequency	Percentage
Less than 1 year	53	14.5
1 to 2 years	27	7.4
2 to 3 years	105	28.7
4 to 5 years	154	42.1
6 years and more	27	7.4
Total	366	100.0

According to the above table, the length of stay of the respondents in the building (42.1%) is 4 to 5 years.

Table 8 - Number and percentage of respondents in terms of monthly household expenses

The amount of monthly household expenses	Frequency	Percentage
Less than 1 million toman per month	52	14.2
1 to 2 million toman	276	75.4
2 to 3 million toman	38	10.4
Total	366	100.0

According to the above table, the monthly household monthly income of most respondents is 1 to 2 million toman (75.4%).

Table 9 - The reason for immigration from the home country in the event of immigration

Indicator	Comments	Frequency	Frequency Percentage	Valid percentage
The reason for immigration from the home country in the event of immigration	Not having a suitable job	78	21.3	49.7
	Low income	52	14.2	33.1
	Marriage	14	3.8	8.9
	Other	13	3.6	8.3
	Total	157	42.9	100.0
	No answer	209	57.1	
	Total	366	100.0	

The reason for the migration of most citizens (about 49.7%) is due to lack of proper employment and then low income.

Table 10 - The reason for choosing the current location for life

Indicator	Comments	Frequency	Frequency Percentage
The reason for choosing the current location for life	The presence of relatives and acquaintances in the current location	38	10.4
	Lower housing costs in the current neighborhood	302	82.5
	Proximity to the workplace	26	7.1
	Total	366	100.0

According to the above table, most citizens (about 82.5%) chose the current location because of low housing costs.

(Continue)

Table 11 - Are you sure you want to leave this place?

Indicator	Comments	Frequency	Frequency Percentage
Are you sure you want to leave this place?	Yes	200	54.6
	No	166	45.4
	Total	366	100.0

According to the above table, most citizens (about 54.6%) are willing to leave this place.

Table 12 - The reason for the desire to leave this place

Indicator	Comments	Frequency	Frequency Percentage
The reason for the desire to leave this place	Long distance	95	47.5
	Lack of facilities	92	46.0
	Long distance- Lack of facilities	13	6.5
	Total	200	100.0

According to the above table, two reasons of "long distance" and "lack of facilities" have caused the citizens to leave the place.

Table 13 - Legal status of land ownership

Indicator	Comments	Frequency	Frequency Percentage
Legal status of land ownership	Official document	340	92.9
	Promissory note	13	3.6
	The proxy	13	3.6
	Total	366	100.0

According to the above table, the land of most citizens (about 92.9%) has an official document.

Table 14: How satisfied are you with your housing design?

Indicator	Comments	Frequency	Frequency Percentage
How satisfied are you with your housing design?	Very much	38	10.4
	Much	91	24.9
	medium	63	17.2
	Low	30	8.2
	Very low	144	39.3
	Total	366	100.0

According to the above table, most citizens (about 47.5%) are satisfied with their housing design "low" and "very low".

B) Analysis of managers' opinions on Mehregan Township housing which each of them is individually checked.

Table 15 - How do you think the housing design in this area is appropriate?

Indicator	Comments	Frequency	Frequency Percentage
How do you think the housing design in this area is appropriate?	Very much	2	6.3
	Much	9	28.1
	medium	5	15.6
	Low	16	50.0
	Very low	32	100.0
	Total		

According to the above table, most executives (about 65.6%) say that housing design in this area is not appropriate.

(Continue...)

Table 16 - In your opinion, what is the biggest problem of residential units in this area in order of priority?

Indicator	Comments	Frequency	Frequency Percentage
In your opinion, what is the biggest problem of residential units in this area in order of priority?	Structural type	5	15.6
	Facilities	15	46.9
	Use and operation	6	18.8
	Location and inappropriate position	6	18.8
	Total	32	100.0

According to the above table, for most managers (about 46.2%), "facilities" are the biggest problem in residential units in the area.

12 Checking the Normality of Variables

The hypothesis studied in this research is: Housing vulnerable groups in Mashhad do not seem to be consistent with housing standards. Using Kolmogorov-Smirnov and Shapiro Wilk tests, Normality of the variables related to the assumption of the research was examined. The results are showed in the table below.

Table 17 - Test results for normality of the variables

Group	The hypothesis variable	Kolmogorov-Smirnov test			Shapiro Wilk test		
		The statistics	Degrees of freedom	The significance level	The statistics	Degrees of freedom	The significance level
Citizens	Research hypothesis	0.082	366	0.000	0.968	366	0.000

Manager s	Research hypothesis	0.107	32	0.200	0.981	32	0.829

According to the above table, the significance level for the assumption of research in terms of citizens according to the two tests is less than 0.05. So variables are not normal and nonparametric tests should be used.

For the group of managers, the significance level of Kolmogorov-Smirnov test for research hypothesis is equal to 0.20 and more than 0.05. Also, the significance level of Shapiro Wilk test was equal to 0.829 and more than 0.05. Therefore, the research hypothesis in the group of managers based on the Kolmogorov-Smirnov test and the Shapiro Wilk test is normal, so parametric tests should be used.

To test the above hypothesis, one- variable Chi-square test was performed in a group of citizens and t-test was used in the group of managers. The results of this test are presented in the following table:

Table 18 - Assessment of housing adaptation of vulnerable segments in Mashhad with sustainable housing standards (Citizens Group)

Group	Impact factor	Observed frequency	Frequency	Expected Frequency
	Low	118	32.2	122.0
	Medium	223	60.9	122.0
	Much	25	6.8	122.0
	Total	366	100.0	366
Citizens	Chi-square statistics	160.869		
	df	2		
	The significance level	0.000		

Based on the above table, the level of significance for the citizens group is 0.000 and less than 0.05. Therefore, with 95% confidence, there is a significant difference between the frequency of respondents in the "low", "moderate" and "high" groups. On the other hand, the observed frequency of citizens who have "moderate" and "low" opinions is 341 and it is much more than "much" opinion. That is, most citizens are of the opinion that: Adaptation of housing to vulnerable segments in Mashhad with sustainable housing standards is "low" and "moderate". So with 95% confidence, we can say:

In terms of citizens: Housing vulnerable segments in Mashhad are not sustainable according to housing standards.

To test the research hypothesis in terms of managers, one-variable t-test is used. This test compares the average of the variable's score with the appropriate number. Here, given the answers to the questions of the Likert spectrum of 5, the average of the responses is 3, so, we compare the variable with the number 3.

Table 19 - Assessment of housing adaptation of vulnerable segments in Mashhad with sustainable housing standards (Managers Group)

| Variable | Test number = 3 | | | | | |
| | Average | Statistict | df | The significance level | Confidence interval of 95% difference | |
					Lower bound	Upper bound
Assessment of housing adaptation of vulnerable segments in Mashhad with sustainable housing standards	1.937	-20.769	31	0.000	-1.166	-0.958

The level of significance level for comparing the view of the group of managers about the level of adaptation of vulnerable segments of housing in Mashhad with sustainable

housing standards is 0.30 and less than 0.05, also, the t-test statistic is 20- 769 and it is negative and the average rate of housing adaptation of vulnerable segments in Mashhad with sustainable housing standards for managers is equal to 1,937 and is less than the average of 3. So with 95% confidence, we can say that:

In terms of managers: Housing vulnerable segments in Mashhad are not accordance with Sustainable housing standards.

13 Comparison of research hypothesis from the perspective of citizens and managers

In this section, using Mann-Whitney U Test, the hypothesis of housing research in Mehraban township of Mashhad has been investigated for citizens and managers. The Mann-Whitney test is a nonparametric test which is used to compare two independent societies. The test results for the research hypothesis are presented in the following table:

Table 20 - The results of the Mann-Whitney test to compare the hypothesis of the housing situation survey in Mehregan Township, in terms of citizens and managers.

Hypothesis	Group	Number	Average ratings	Mann-Whitney	The significance level
Housing vulnerable groups in Mashhad do not seem to be consistent with housing standards.	Citizens	366	214.560	344.000	0.000
	Managers	32	27.250		

According to the results of the above table, the significance level for the difference between the views of citizens and managers on the research hypothesis is less than 0.05. The average rating for the citizens group is also 214.56 and it is more than the group of managers, which is 250/27. So, with 95 percent confidence, citizens are more likely to say

that housing in vulnerable segments in Mashhad is consistent with sustainable housing standards. The significance level for the difference between the views of citizens and managers about the second hypothesis is less than 0.05 and it is more than the group of managers, which is equal to 422/65. So with 95% confidence, we can say: Citizens are more likely to say that, the current construction site of Mehregan is in some cases compatible with the desired location criteria.

Conclusion

Since housing is a multidimensional domain, the attitude to it must be all-round and multi-dimensional. According to various studies carried out in different parts of this paper, a systematic and integrated approach involving different spatial and based on spatial relationships, can be most effective in helping solve this problem. Therefore, effective policies on housing for low income groups and also in relation to the potential of worn-out and marginalized cities for systemic effectiveness will be considered. The housing problem has both macro dimensions and intermediate and local dimensions in terms of divisions and geographic areas. This section is also intertwined with other spherical, social, and cultural sectors and a series of cause and effect rings have shaped it; therefore, the suggested approach to the topic should be taken at different levels. At the highest level, it includes the implementation of macro policies, especially in the field of land administration and economic development. At the middle level, it includes the economic policies of the housing market and its financial system. At micro level, it includes policies related to development, urban planning and architecture and housing construction. Mashhad is ranked among the largest cities in the country and due to the political, administrative and service center, it has faced with the growing rate of immigration and unbridled development and due to the topographical conditions and the many restrictions of development, the price of land and housing is very high and on the basis of this, low-income groups are more vulnerable. Based on the results of the studies, the formation of the housing crisis and its transformation from Issue into challenge and then to crisis, is affected by various micro and macro factors in

different economic areas and at different geographical levels. The most important of these factors can be expressed in terms of geographic level and impact mechanism, as follows:

- Formation and imposition of the central unequal relations of the periphery in the international division of labor and capital;
- Existence of severe inequalities in the system of resettlement, activity and space in the spatial organization of the country;
- Top-down planning and considering the local conditions of developmental areas;
- The extreme decentralization of the activity and population system resulting from budgetary policies to strengthen large and middle cities;
- Conflicting the stable and healthy relationships between the city and the countryside and the depreciation of livelihoods of villages and small towns and consequently increasing immigration to Mashhad;
- Lack of suitable housing programs for low income groups in Mashhad;
- Not taking advantage of existing potentials (Worn texture) and misconceptions about Horizontal City Development;
- Not considering low-income groups in urban development plans;
- Land and housing stock exchange and as a result, the tremendous rise in land and housing prices;
- Mashhad's severe limitations for the supply of land in terms of topographic characteristics, the presence of military garrisons and artificial implications around the city;
- The weakness of the economic foundations in Khorasan province.

The combination of these factors, on the one hand, has increased demand and, on the one hand, has pushed up land and housing prices. In the meantime, the gap between effective demand and potential demand, especially in low-income groups, has deepened and has led to the isolation of lower-income groups in Mashhad. In addition to this, the environmental, physical and occupational conditions are also very unfavorable among these strata. As previously mentioned, the government according to the specifying the rules and

in terms of its supervisory role with different designs and policies, tried to organize the general conditions of housing, and especially the housing of low-income groups. The results of the surveys show that neither in the direct support sector nor in the lending and support sector have any success been achieved. And the conditions of these strata are far worse than in previous years. In the following, the past policies and in particular the Mehr housing plan has been considered. According to field observations, the project in Mashhad can be seen from various aspects and so far, it has not had any effect on improving the conditions. Inappropriate and unproductive location, lack of facilities, services, facilities and equipment, identity crisis, cultural-social disparity, target groups, environmental problems, over-warding of low-income groups from achieving it, etc., are the most important of these problems. Ultimately, solving the housing problem of low-income groups is possible, but it requires rational and principled actions. Pay attention to the strategies of the national and provincial affairs, Providing housing plans at the national and regional levels and Changing macro development policies in favor of deprived areas can be the starting point for the planning. The next step is to introduce changes or regulations in the field of financial markets for the financing of housing and the economic market of land and housing. In which the goal of controlling prices and adjusting policies should focus more on low-income groups. Finally, in the city of Mashhad we can solve this problem using formulation of urban planning, architecture and housing construction and enhance their flexibility, And encouraging activities in worn-out and marginalized tissues in favor of low-income groups and changing the views and plans of urban development projects. Housing planning of low income groups requires the development of an integrated and organized planning and management system, where all components of the system are connected vertically and horizontally and this communication will be managed at all levels.

Suggestions

- For the poor, housing is an economic place, so economic planning for them is made from the lowest level, that is, the neighborhood;

- With the collaboration of the public sector, appropriate strategic research is needed on the housing of vulnerable sectors;

- In the Housing and Urban Planning Organization of Mashhad in the context of identifying impoverished tissues, A community of urban planners, sociology, economics, management, and so on be formed and exchange views;

- It is suggested that the approach to improve housing indicators, along with participation and empowerment, be put into the agenda of the responsible organizations and inform local decision-makers in this regard;

- Plans for housing in the future should be developed and implemented in a comprehensive, integrated manner and under a single urban management;

- Obviously, planning to improve the status quo is not a quick return, but it is an activity that calls for government programs at the national and local levels and it needs to activate and co-operate with local people's institutions;

- In the design of housing, attention should be paid to the views and wishes of the people and it should be designed according to the needs;

- Placement of various types of facilities and services for the benefit of residents in the design of such housing should be prioritized.

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