

Analyzing Housing Indices in Informal Settlements of Mashhad (Sample study: Shahid Rajae Town)

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ABSTRACT

Housing is a number one priority for a majority of people, no matter how much they earn. However, it takes more significance in informal settlements as the people's migration from villages to cities and their settling at the margins of the cities has turned into a widespread problem. Since any planning in this regard requires an introduction of the present condition and the quality and quantity of the issue of the housing, it has been tried in the present paper to have a survey on the characteristics of housing in Shahid Rajae town as the largest informal settlement in Mashhad with a descriptive-analytical method. Data was gathered through fieldwork and questionnaire. 5% of the total housings in the town, that is, 622 housings were randomly studied. The findings indicate undesirable quality and quantity of the settlement and a lower condition compared with the average in Mashhad. In quantity specifications, high population density, high dimension of the housing, shortage of the rooms available for the housing, high density of individuals in one room, small area of the residential units are among the most significant points. Shortage of housing in this town is the result of informal and illegal market and spontaneous housing supplying relying on family work can hardly be seen. The quality specifications in different aspects include type of building materials, the strength and durability of the building, time and the manner it has been constructed, the condition of its ownership and available facilities indicate an undesired condition. Thus, having in the mind that the physical condition and inappropriate housing can bring about other social, cultural and economic issues, improving the condition of these settlements through approaches such as remediation and empowering the residents by manipulating their potential talents should be put into consideration.

KEYWORDS: Housing, Informal Settlements, Mashhad

Introduction

Housing is a number one priority for a majority of people, no matter how much they earn. Without the security and comfort of housing, release from the problems caused by poverty is impossible. Housing is one of the physiological needs of the man essential for his survival. (Okoye, 2007, 82). Housing and its environmental conditions is the most significant factor in the individual's satisfaction of living in a neighborhood. (Westaway, 2006, 187); moreover, it is considered as one of the most important economic goods in the household's consumption basket. Thus any improvement in it will lead to improvement in the condition of the household in social and economic aspects. Improvement in housing will lead to enhancement of welfare and society in both qualitative and quantitative parameters not only through providing an essential shelter, but also by presenting space for upgrading health, education and nutrition. (Nallathinga, 2007, 72). But today with increase in population and urbanization development in developing countries, it has turned into one of the most critical issues of the communities.

Inequality and poverty in these countries and paying little attention to low paid groups in planning has caused widespread migrations from peripheral regions to the cities especially large cities. Since absorbing the new migrants within the urban texture is not possible, their settlement is realized in the margins of the cities as informal settlement. Hence, migration from rural areas to cities and settlement of a large number of people and households in slums and margins of the city indicates urgent need for housing which requires consideration and planning. (Shabirchima, 2000, 174)

One of the most significant indices in recognizing the status of settlement in these areas, is the attention paid to the physical indices of the housing. (UN-Habitat, 2005, 1). Poverty of housing in Iranian urban areas is mainly manifested and is developing as informal settlement. (Athari, 2005, 113). Informal settlements include wild housings which have no legal identity irregularly scattered around the cities. (Hadizadeh Bazaz, 2003, 15) the residential units in them have been built by unstable and worn out materials with insufficient urban services (Kazemi, 2004, 376)

The problem of housing is mainly the challenging problem of people with low and average income. Absence or shortage of suitable urban residential units in qualitative and quantitative aspects, not only deprives a vast number of people of a suitable housing, it also imposes huge costs of housing on the budget of urban households. (Aghasafari, *et. al.* 2010, 69)

On the other hand, our country's economic transformations and the impact it has had on housing sector, has turned housing into a widespread issue for the majority of people in the society –although with different strength and weaknesses- and has brought about an increasingly crisis. (Varesi, 2001, 186) Hence, it seems that preventing the current trends and solving the issues concerning the shortages of housing is not something to be solved in a short time and demands planning. However planning in housing sector in Iran lacks an effective and updated statistical system. Lack of integrity of organizations and administrations responsible for housing data and indices (Statistical Centre of Iran, Central Bank, Ministry of Housing and Urban Development, municipalities and so on) is not something that can be ignored. (Azizi, 2005, 34). In spite of contradictions, shortages and inconsistencies in statistics and data in housing sector, achieving a comprehensive and well-defined program to remove the obstacles in housing sector in Iran is far from expectation. (Ziari, *et. al.* 2010, 32) Since any planning won't succeed without correct statistics and information accompanied with a good knowledge of the current conditions, recognizing the current status and the quality and quantity condition of it is a priority in planning for housing. The present paper, therefore, tries to recognize the qualitative and quantitative conditions in Mashhad informal settlements (Shahid Rajaei Town) in order to be able to offer a primary tool for successful planning in this regard.

The Necessity and Importance

As Informal settlement causes reproduction of poverty, threatens the quality of environment and imposes huge expenses, it is regarded a serious threat for stability and solidarity of urban community and demands special strategies for organizing current condition and preventing it to develop in future. (Ministry of Housing and Urban Development, 2003, 1). Meanwhile, paying attention to physical characteristics and improvement of housing conditions receives particular priority. In a report released by a group of experts in UN, the key role of housing in enhancing the community's solidarity has been emphasized. The role of housing is also of great significance in the economy of the countries. It will lead to improvement of housing conditions and urban services ,increase in social stability ,improvement of environmental conditions ,improving the total conditions of life and motivation to involve in the community.(Satarzadeh, 2003, 86).

Due to hasty growth, widespread migrations and development in financial relation, Mashhad has witnessed great changes in recent years. Available urban texture and the planning made within comprehensive and detailed plans have not been able to meet the demands of newcomers and new urban requirements. Therefore, the formation of marginal textures grown like mushrooms mostly without any definite mechanism has brought about critical problems for the city. One-seventh of the habitants of informal settlements of 25 large cities live in Mashhad and the rate of population of informal settlements to the whole population is higher compared to the national average (28% kfdxx compared with 20% national average). (National population and Housing census report, 2006, Alaedini and Naseri 2008, 81) has caused even more worse conditions of housing in marginal areas and this demands a precise recognition of the issue.

Since the most evident aspect of this type of settlement is the poverty of housing, that is, people settle in these types of areas solely because they can't afford any other place for living and since this type of living can definitely affect other aspects of their life and even their physical and mental health ,solving the issue seems to be a preliminary requisite. On the other hand, compiling a comprehensive plan in housing sector requires identifying and analyzing different aspects of housing which itself involves general qualitative aspects such as justice, flexibility, coordination, satisfaction, financial affordability and environment. Since the evaluation of these aspects is somehow challenging ,housing indices are proposed as measurable variables in order to define the quality of different aspects of housing.(Azizi 2004,32).Accordingly, organizing and problem solving requires data and statistics related to the issue and recognizing the qualitative and quantitative aspects of housing in these areas so that one can take decisions for future relying on concrete and accurate data .The present paper tries to recognize these specifications in a sample area (Shahid Rajae Town). The reasons why this town has been chosen for the study can be listed as follows.

- Shahid Rajae town has the second rank among 160 population spots in margins of Mashhad.
- Measuring 176 acres ,it has the first rank in area amongst all population spots in the margins of Mashhad.
- It is located in the entrance and exit rout of Mashhad in Neishabour-Mashhad road .The most number of habitants of the town have come from Khorasan Razavi province (Torbat Heidarieh, Torbatjam and Neishabour).
- The average of population growth in this town within 1976 to 1986 is 8.2 which indicate rapid development of the town within the last decade. Due to lack of supervisions on the constructions, the majority of residential buildings in the town lack required strength. Since most of these buildings have been built at night, no technical and engineering principle has been observed in the construction and the majority of buildings contain low quality and low durability materials.

Goals

The main goal in this study is to know the quality and quantity specifications of Shahid Rajae Town as the largest informal settlement in Mashhad so that we can achieve the following sub-goals.

- Defining the relations governing different aspects of housing caused by the previous policies
- Providing an appropriate means for policy-making and planning

Questions

According to the goal of the study which is recognizing the qualitative and quantitative specifications of housing, the following questions are proposed:

- What is the quality and quantity of housing in Shahid Rajae Town?
- What differences do exist between Shahid Rajae Town and the average in Mashhad in the quality and quantity of housing?

Research Method and Statistical Community

This is a descriptive-analytical study based on fieldwork. The research method for recognizing the area under study and gathering information related to the subject included physical interpretation and questionnaire. According to statistical community which included 12244 residential units, the population of 51050 people and 12436 household based on census report of the year 2006, the questionnaire was distributed among 5% of the households in the town including 622 households.

The area under study

The area under study in this research is Shahid Rajae Town in Mashhad measuring about 176 acres. It is located in Southeast of Mashhad in district 3, region 6 of Mashhad municipality. The town also known as Ghale Sakhteman is one of the big settlements in the margin of Mashhad. The formation of the town turns back to 1976 when a village called Ghale Sakhteman was located in Mashhad-Neishabour road. As it was located in entering and exit route of Mashhad and due to low price of lands and lack of any supervision on the construction there, it found an astonishing development within the last decades. It is the second informal settlement after Golshahr town regarding the number of population. As it is shown in table1, the town had a population more than 4722people in 1976 which increased to 11200. The rate of population growth in 1976-1986 was 9. Within 1986 to 1996 the population raised to 34880 with the rate of population growth of 12. This means that the population of the town increased more than 3 times within this decade. The rate of population growth in 1996 to 2006 was equal to 3.8 raising the population to 51050 consisting of 50.1% men and 49.9% women. Thus the gender index had been 100.52. The population of the town in the year 2011 was 59919. According to the census report of the year 2006, the population density in this town was 290 people per hectare which is more than 3.5 times of Mashhad population density. Among the reasons for high population density in the town, low price of land and rental, location in the entrance of Mashhad and the high size of the household can be pointed out. Since housing is directly related with population density, any change in number, composition and situation of a population will affect the demand for

housing. (Annamoradnejad and Zarabi, 2011, 350) Due to social and economic development and population changes, the demand for housing grows more rapid than the population and this can lead to increase in smaller households which are dealt with now.

Table 1. Population changes in Shahid Rajaei Town

Rate of growth	Population	Year
-	4722	1355
9	11200	1365
12	34880	1375
3.8	51050	1385
1.6	59919	1390

Source: General Census of population and housing in different years

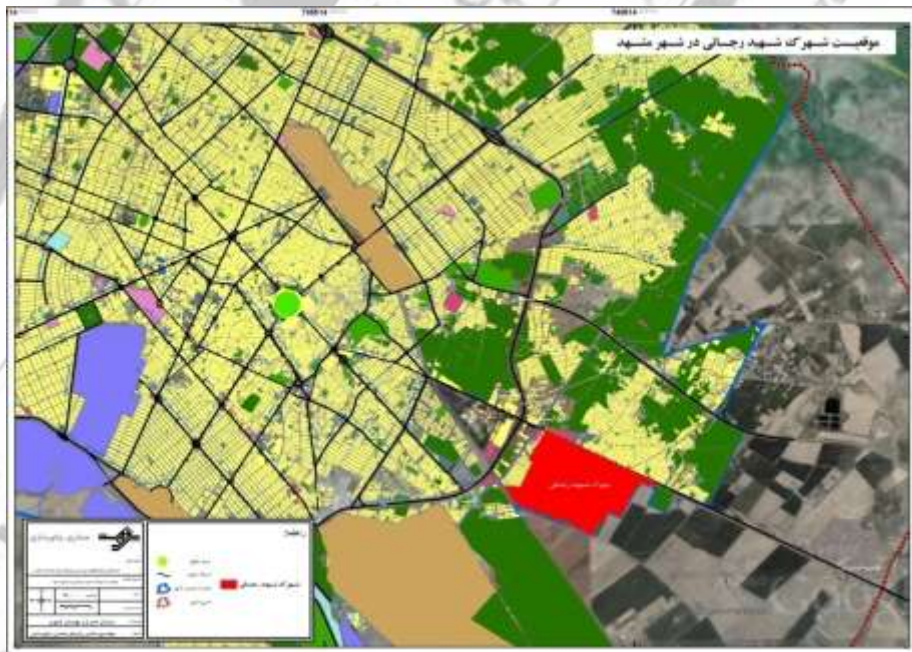


Figure 1. Location of Shahid Rajaei Town in Mashhad

Findings

The main characteristics of housing can be studied in two groups of quantitative and qualitative indices of the residential unit. The quantitative indices mainly deal with types of density in

the unit and the qualitative specifications deal with the materials used in the construction of the building, ownership of the residential units, age of the building and the facilities available in the residential unit. Thus the specifications of housing in the present paper will also be studied in two parts of quality and quantity.

The quantitative specifications of the residential unit

-The size of the household (The index of person per household)

Growth and increase in the household and its size is significant in that the effect of population on the demand for housing is realized in the form of housing. By the size of household, we mean the number of persons who are considered as one household and the low number of whom is regarded as an appropriate condition to achieve welfare in the households in the society. (Satarzadeh, 2009, 88)

The regions of informal settlements normally have a larger size of household compared to other parts of the city. According to the census report of population and housing of the year 2006, the average size of household in Mashhad was 3.8 of which the municipality districts of 5 and 6 had the highest (4.4 and 4.1 respectively) and the municipality districts of 1 and 8 had the lowest size of the household. According to the census report of population and housing of the year 2006, the number of households in Shahid Rajaei Town was 12436 households. The average household size in this town was 4.1 persons. According to field studies, the households with the size of 5 persons and more consisted the most percentage of households in the town (31.2%). 31.2% of the households include households with more than 5 persons. The households with the size of 5 persons formed 23.7% and 4-persons households formed 21.5% of the households of the town. Therefore, more than half of the inhabitants in the town were households with 5-persons or more. Table 2 shows the population and household information of Shahid Rajaei Town compared with the city of Mashhad.

Table 2. Population and Household information of Mashhad and Shahid Rajaei Town

Shahid Rajaei Town	Mashhad	Index
51050	2427424	Population 2006 (persons)
59919		Population 2011 (persons)
290	82	Population Density (person per hectare)
12436	632331	Number of household
4.1	3.8	Household size

Source: General Census of population and housing-2006 and field studies

-Number of Households in Residential Units

Number of household in a residential unit is regarded as one of important indices of housing. The smaller it is, the more favorable it will be. The value for housing shortage is determined

by assigning one residential unit for one household. (Saeednia, 2004, 90) In case this index shows the value of 1, the condition for housing is desirable and there is no shortage of housing (Forrest and Lee, 2003). This index has been 1.09 for urban regions in the country in 2006 and about 1.08 in Mashhad, but it has been about 1.17 in poor regions of Mashhad. (Statistical Centre of Iran, 2006) which is higher than urban regions in the country and Mashhad. The number of household in a residential unit in Shahid Rajae Town is 1.02.

-Shortage in residential Units

According to statistical sections of the year 2006 issued by Statistical Centre of Iran in 2006, the number of residential units of Mashhad had been 581184 and the number of households had been 632331. The number of shortages in the units had been 51147 and 8.1% of the households did not own a housing. However, there have been 12244 residential units in Shahid Rajae Town in the same year and the number of households in the same year had been 12436. Accordingly, the shortage of housing in this town was equal to 192 units. In other words, only about 1.5% of the households lacked housing. Meanwhile, the rate of housing shortage in the whole country based on the same census had been calculated as 8.6%. (In national census report of 2006, the number of residential units was equal to 15895926 units and the number of households was equal to 17359576, that is 1499650 households were without a housing (Statistical Center of Iran, 2006)). Therefore, the rate of housing in this town was extremely lower than Mashhad metropolis and the whole country. The reason for this may be found in unstable non-normative constructions with no consideration of urban regulations and principles in the town.

-The number of rooms available for the household

According to field studies in Shahid Rajae Town, 37% of the households have one room in their residential units, 44.1% have 2 rooms and 13.2% have 3 rooms. 5.6% of the households lack any room in their residential units. In the urban regions of the country one-room units consisted 8.2% of the whole units and one and two-room units consisted only 24% of the units. (Arabi Balaghi, 2007, 74). Similarly, in urban regions of Mashhad, one-room units consisted 1.5%, two-room units, 11% and three-room and more 87.5% of the whole residential units. (Urban Development Studies Consulting Engineers, 2008, 209). In fact the habitants of the town own less number of rooms in comparison with the national urban regions average and Mashhad. Table 3 shows the number of rooms in Shahid Rajae Town as compared with Mashhad.

Table 3. The number of rooms in residential Units in Mashhad and Shahid Rajae Town

Percentage of residential units	Mashhad	Number of rooms
37	15.5	1
44.1	32.5	2
13.2	52	3 and more
5.6	-	No rooms

Source: General Census of population and housing-2006 and Urban development Studies Consulting Engineers, 2008, 209

-Density of Persons in a room

This index shows the number of persons in each room which is mostly more than one. As the number decreases, the more individual's independence in each residential unit will be supplied. Today the number of household member and the number of rooms they own is known as an index for development. In other words, The reasonable average number of people in the room is known as a health index. (Sheikhi, 1998, 85)

This index is one of the basic elements for evaluating the quality of life applied by the American Population Crisis committee (Anna Morad Nejad and Zarabi, 2011, 353) and it is the most important index that relates population crowd to nervous problems and psychological disease in people (Azizi, 2003, 49) gained by dividing the population of the household on total number of available rooms in residential units. An smaller result indicates more independence for household members inside residential unit. In fact, a big size household in which one has to meet all his demands in one room, is the realization of poverty and economic deprivation. (Azimi, 1995, 118). According to world standards, the desired value for this index is 1. In census report of population and housing report of the year 2006, this value was 1.34 in Iran and 1.38 in Mashhad. However the results showed that person density in one room in Shahid Rajae Town were 2.9 that is a rather high figure.

_The infrastructure area in residential units

As it can be seen in table 4, based on the statistical sections of the year 2006 issued by Statistical Centre of Iran, there are 12244 buildings in Shahid Rajae town, the most number of the blocks measure between 51 to 57 sq.m .32.3% of the total buildings, that is, 3958 buildings measure between 5 to 75 sq.m 3151 buildings in the town measure below 50 sq.m consisting 25.7% of the total buildings of the town. Meanwhile the average of blocks below 50 sq.m in Mashhad was about 13.9% (*Urban development Studies Consulting Engineers, 2008, 78*). Totally, 87.8% of buildings in Shahid Rajae Town measure below 100 sq.m and the number of buildings measuring more than 100 sq.m consist only 12.2% of the total built buildings. This indicates that like other informal settlements, the blocks have been divided in low measurements due to poverty in the economy of the households. These figures indicate the undesirable condition in type of constructions and the manner of dividing the blocks.

Table 4. The infrastructure of Buildings in Shahid Rajae

Percent	Number	Buildings infrastructure/ sq.m
25.7	3151	below 50
32.3	3958	51-75
29.8	3652	76- 100
8.8	1087	101 -150
2.2	273	151- 200
0.87	107	201- 300
0.13	16	300

Source: General Census of population and housing-2006

_The height of floors:

In investigating the building floors of Shahid Rajae Town, two types of one and second- floor buildings can equally be seen consisting more than 99% of the texture. One-floor buildings consist 72% of the textures and two-floor buildings consist 27%. Meanwhile proximity to the routs has a direct relationship with the number of floors. Nothing has been observed in this case. Everybody has constructed the most infrastructure based on his budget. Table 5 compares the number of floors in Mashhad buildings in Mashhad and in Shahid Rajae Town.

Table 5.The height of floors in Mashhad and in Shahid Rajae Town

Shahid Rajae Town	Mashhad	Number of floors
72	14.4	1
27	13.9	2
1	24.6	3
	22.3	4
	24.7	5& more

Source: Farnahad Consulting Engineers,2007 and Field studies

-The Qualitative Specifications of Residential Unit

The index for housing stability is one of the most crucial elements in studying the quality of housing in a community. Few or no stable housing is regarded as one of the prioritized indices for urgent and deprived conditions in the society which leads people to live in informal settlements(Annamoradnejad and Zarabi,2011,353).In other words, all informal settlements are regarded as unsustainable housing .yet there, we can also see housings with different conditions of construction.

58.7% of the inhabitants of Shahid Rajae Town are the migrants ,43.4% have come from different parts of Khorasan Razavi and 15.3% from other provinces.6.6% are Afghan migrants. The population growth of the town between 1996 and 2006 had been 3.8%.3% of the population of Shahid Rajae town migrate seasonally. Considering the population growth in the town and low price of land and housing in comparison with other parts of the city and invasion of urban low-income groups to the town, increase in the population density on one hand and the inaccessibility of extending residential usage in the area on the other hand, has caused acceleration in buildings density and increase in the floors.

Population growth and increase in demands for housing have caused the constructions to extend up to the proximity of the agricultural lands, Razavi road and the wastewater canal passing at the end of the town .This has caused the interference of residential and agricultural usages and destroying part of agricultural lands and old gardens of the town as well as lowering the quality of residential units as will be discussed below.

-Type of building Materials

One of the most evident manifestations of the poverty in informal settlements realized within them is their appearance and the manner of their construction, the materials used and their strength. Economic poverty is the most important determining and direct factor affecting in constructing buildings without any plan and free from any technical principles. In fact in order to decrease the costs of construction in informal settlements, many basic principles of construction have been ignored.

About 82% of the buildings in Mashhad have been built by brick and iron (Semi-durable), 17% of the units have been built by metal skeleton or enforced concrete (durable) and 1 percent are weak and fragile buildings. (general census report of population and housing report, 2006). However, the materials used in the residential units constructed in the margins of Mashhad are iron, brick and beam block (Urban development, Architecture studies consulting Engineers, 2008, 203). According to field studies made in the town, the condition of the buildings constructed in Shahid Rajae Town regarding the materials used is as follows. Only 1.4% of the buildings in the town have been made based on regulations by metal skeleton. 3.7% of the buildings have been of adobe and mud and 94.8% have been built of brick and iron. These differences in Mashhad and Shahid Rajae town indicates an imbalance between informal settlements and the city and emphasizes the necessity of more consideration to housing sector of the margins of the city (Table 6).

Table 6. The percentage of materials used in Shahid Rajae Town

Shahid Town	Rajae	Mashhad	Type of materials
1.4		17	Metal skeleton or concrete
3.7		1	Adobe and mud
94.8		82	Brick and iron

Source: General Census of population and housing-2006 and field studies

-The strength and Durability of the Building

Field Studies made on the quality of buildings and strength of the buildings constructed in Shahid Rajae town indicated that 69.2 hectares of the built area is newly-constructed and 87.7 hectares of the built areas are restored buildings and 4.6 hectares are in the group of buildings built in destroyed areas.

Table 7. The quality percentage of the buildings in Mashhad and Shahid Rajae Town

Shahid Rajae Town		Mashhad	The quality of buildings
Area/Hectare	Percent		
69.2	19.5	41	Newly-built
87.7	76	56	Restored
4.6	4.4	3	destroyed

Source: General Census of population and housing-2006 and field studies

A Comparison on the quality of buildings in Mashhad and Shahid Rajae Town (table4 7) shows that the status of strength and durability of the building in the town is lower than average condition of Mashhad.

-Duration and the Manner of Construction

The conditions of buildings concerning the time spent for construction in Shahid Rajae Town based on the studies and sampling (Table 8) indicates that 66% of the buildings have gradually reached their current condition. 9% of the buildings have been built at nights in less than one week .The reasons for this type of construction in informal settlements are low affordability of the residents and the municipalities measures to prevent unpermitted constructions in these settlements.

Table 8.The time spent for construction in Shahid Rajae Town

Percent	Time spent for construction
4	Night-constructed
5	Less than a week
24.9	Not-informed
66	Gradually

Source: field studies

-The manner of construction regarding the labor force

Studying the manner of construction in the town concerning the labor forces in table 9 indicates that 64.3% of the buildings have been constructed by the inhabitants themselves in fact as unskilled labor force. Only 8.1% of the buildings have been built of constructional contractors.

Table 9.The status of labor force applied in construction in Shahid Rajae Town

Percent	Labor Force
8.1	Contractor
64.3	By the inhabitant
27.5	Not-informed

Source: Field studies

-The condition of possession (Ownership of the land and residential units)

Security and feeling safe in possession of housing is a significant and affecting social and psychological aspect of housing. It helps families feel secure for the perspective of their settlement. On the other hand, in order that the low-income groups improve their condition of housing, the security of right of the possession is highly significant. (Hatamainezhad *et.al.* 2006, 138). Moreover, there is a significant relationship between possession and the quality of housing (Dadashpour and Alizadeh, 2010, 39).

An unchanging characteristic in all informal settlement is informality of the status of ownership and lacking an official title deed for the property. Due to people's religious beliefs almost nowhere has been possessed by the urban poor groups by violating the regulations of ownership, but almost all residential units have been built on the lands with no construction permit and construction termination certificate. As they are considered illegal based on the urban development regulations, an official ownership for them is extremely limited and not covering even 2% in some settlements (Alaedini and Naseri, 2008, 3). The findings show that in Shahid Rajae town, 98.1% of the buildings have a contracted ownership and only 1.9% of the buildings have an official and legal deed (Table 10).

Table 10. Type of buildings ownership in Shahid Rajae Town

Percent	Type of ownership
98.1	Contracted ownership
1.9	Official ownership

Source: Field studies

-The Condition of Settlement in Residential Unit

According to table 11, 72.3% of the households living in Shahid Rajae Town are the proprietor of their residential unit and 24.7% live in mortgaged or rental residential units. Moreover, 3% of the households live in residential units without paying rentals. Meanwhile the average of the housing ownership for "low-paid urban households" in the country is 64% (Peiman, 2007, 73). This indicates more ownership of the people in this town.

The figures mentioned above indicate that in spite of undesired conditions of residential units concerning the materials and small pieces used in the construction, people have been forced to buy and build such housings in order to escape rentals and find an ability to make a deposit and the possibility to improve the quality of life and meeting their demands in future. Therefore, assigning programs in accordance with the economic and social condition of the low-paid people have to be incorporated in the plans for organizing informal settlements.

Table 11. Percentage of type of settlement in residential units in Mashhad and Shahid Rajae Town

Shahid Rajae Town	Mashhad	Type of settlement
72.3	63	Personal
24.7	34	Mortgaged-rental
3	3.5	Without rental
	1.5	Others

Source: General Census of population and housing-2006 and field studies

-Available Facilities in residential Units

Access to facilities and basic services is considered as an important parameter in evaluating the quality of life. Deprivation of urban preliminary services is one of the consequences of not recognizing the settlement of the poor and it is one of the characteristics of informal settlements. Studying the services provided in informal settlements of Mashhad indicates their better conditions compared with similar cases in other countries. Alaedini and Naseri,2008,84).The conditions of water, electricity and gas in Shahid Rajae Town has a rather good condition but in other services like bathroom, kitchen and toilet it faces some shortages(Table 12).There is no urban wastewater system in the town.

Table 12.The percentage of availability of the facilities in a residential unit

Shahid Town	Rajae	Mashhad	Residential Facilities
99.5		100	Tap water
100		99.9	Electricity
99.1		98.7	Gas Piping
78.8		-	bathroom
83.1		-	kitchen
95.2		-	Toilet
0		62	Sewer System
-		84	Telephone line

Source: General Census of population and housing-2006 and field studies

-Residential Usage capitation

The dominance of residential usages in informal settlements is one of the main characteristics of these settlements. Absence or shortages of other usages needed for urban life in these settlements intensifies the concentration of residential usages and spaces in these settlements. Shahid Rajae town is not something exceptional. 97.2 hectare of the area of Shahid Rajae town has been assigned for residential usage. Table 13 shows that the residential capitation in this settlement is lower than Mashhad and the standard capitation. The residential capitation in this settlement is 19.04 sq.m. This figure is 28.1 sq.m in Mashhad .Meanwhile the residential usage standard capitation in low density is 50 square meter. Thus it can be seen that the residential capitation in this town much lower than the standard rate in Mashhad.

Table 13. Residential Usage Capitation in Mashhad and Shahid Rajae Town

Capitation /sq.m	Residential usage
50	Standard capitation in low density
28.1	residential usage capitation in Mashhad
19.04	Residential Usage capitation in Shahid Rajae Town

Source: Shiyeh, 2002, *General Census of population and housing-2006 and field studies*

Conclusion

Studying the specifications of housing in Shahid Rajae town as one of informal settlements indicates its low quality and quantity and the undesired condition compared with the average in Mashhad. In studying the quantitative specifications, even though high density of population, high size of the households, shortage of rooms available, high density of persons in a room and small area of residential units are among the most evident characteristics, the degree of housing shortage in this town is lower as compared with Mashhad. This indicates that the informal market –although illegally–the majority of people have spontaneously acted for supplying their housing relying on the family work. It means that there is a great potential among the inhabitants which needs to be guided and utilized in a correct path. On the other hand, the number of building floors in this town is low. But in case the infrastructure and pilot is strengthened, they can be an opportunity to meet future demands.

In qualitative specifications, the condition is unfavorable in all aspects including type of building materials, strength and durability, time spent for construction and the manner it is built, the status of possession and available facilities, all indicate the necessity of more consideration to the qualitative issues in the field of housing. In other words, some people have unwillingly chosen to live in these settlements because of their urgent need to shelter and have been able to solve the problem of housing relying on their own labor in a way that the status of personal settlement is higher than Mashhad. This proves the potential of the residents of informal settlements in supplying their own housing that can be utilized as an opportunity by the directors and authorities. Since the physical status and inappropriate housing can have other social, cultural and economic consequences, compiling and implementing a comprehensive program in this regard seems inevitable. Since it is predicted that the demand for this type of housing will continue in future as well and as the extension of these types of settlements in the margins of Mashhad is wide, using strategies like destruction, reconstruction, relocation and public housing seems impossible. Thus it seems that the only way to upgrade these types of settlements is the approach of enabling the inhabitants and utilizing their own potential capability and capacity.

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