

The Qualitative and Quantitative Changes of Housing in Iran (1966-2006)

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Abstract: Housing is one of the most important and impressive elements in human life influenced by various social and economic factors like the rate of population growth, household dimensions, the expenses of running a family, the scales of immigration, income average, technical knowledge of constructing, government policies, occupation and etc. This article analyzes the 40-year-changing process (1966-2006) of housing in Iran with the consideration of 10 qualitative and quantitative indicators. Findings show that government sector has rolled back in construction during the last decade and has paid its attention on supporting policies in minimizing and mass housing construction. From the quantitative point of view, during the last 40 years, the rate of construction developments has been 3.5 percent, while the average of population growth, during this period, was 2.5 percent. From the qualitative point of view the rate of durable housing in 1966 from 11.7 percent increased to 74.8 percent in 2006 and the rate of house owning has been more than 67 percent as usual. According to the estimation, Iran would require 7.8 million residential units until 2025 that means averagely 411 thousand residential units should be constructed annually.

Key words: Iran • Housing • Qualitative and Quantitative Indicators • Developmental Program • Trends • Homeless

INTRODUCTION

Human population growth and residential area expansion are contributing to landscape and habitat transformations, changing the environment, affecting flora and fauna survivals, as well as biotic components of the Earth [1]. Much more than shelter, housing is the address from which we launch our daily lives, the largest financial transaction of a lifetime for most of us and the place most people call home [2]. Housing is a process and product that goes back to the early development of forms of shelter and has related to various aspects of a broader social, economic and cultural context [3].

Not only has the importance of housing been the main concentration of public thoughts, but also it has been considered as a primitive tool for implementing economic policies owing to its relationship with economic sectors and employment [4]. Housing has a strong relationship with population density as if any change in the number, composition and location of a nation or population will affect the demand for housing. Housing needs increase more rapidly than population as a result of socioeconomic development and demographic changes leading to increases in smaller household [5].

Iran, as a developing country in the last decade, has had an inclination towards urban dwelling especially after land improvement in 1962 and changing in production system. Subsequently, its problems especially in housing sector emerged [6].

This article aims at evaluating the process of changes of housing in Iran during the last 40 years both qualitatively and quantitatively to portrait the future perspectives.

Background: There have been so many studies in the field of housing and its changes in Iran and throughout the world. One of these seminal articles in world scale is “the housing indicators program” which was carried out by UN habitat and World Bank. In that article, 50 housing indicators of major cities in 53 countries have been applied [7].

In 2006 a book named “Housing and social transition in Japan” was published. It is a book which seeks to gather a number of perspectives on the Japanese housing system in order to provide a comprehensive and multifarious account of the dynamic role of the housing system during the period of unprecedented social and economic systems in the industrial/post-industrial world.

The authors explore the nature of Japanese housing system, focusing on how it is embedded in the wider structure of social and economic transformation [8].

The article titled "Housing and health transition in Thailand" was published in 2004 in *Reviews on Environment Health*. This paper explores, using published data, how using conditions, such as one set of environmental health risks, has undergone transition in recent years [9].

There is another article titled "Changing housing policy in Vietnam: Emerging inequities in a residential area of Hanoi" published in *Cities*, which explains housing changes in Vietnam.

Katherine and Tran discuss the housing situation of urban dwellers in Hanoi in transition period from state housing provision to privatization and market-driven housing. Based on field studies in a residential area of Hanoi with Soviet-style apartment blocks, the paper shows how new housing policies are contributing to strengthening inequity as 'winners' and 'losers' emerge [10].

Owusu-Ansah and O'Connor in 2010, in a article named: '*Housing demand in the urban fringe around Kumasi, Ghana*' analyze the changing values ascribed to traditional villages and urban locations, the changing preference for single-household housing and increased expatriate housing demand [11].

Buckley and Kalrickal (2005) in their article "Housing policy in developing countries: conjectures and Refutations" discuss housing policy in developing countries. This paper examines recent research findings in light of earlier arguments as to the benefits of more market- oriented approaches. It also looks at whether the recommendations of earlier work have been refuted or developed in subsequent analyses and policy measures [12].

Some authors have conducted different investigations in this field like Azizi (2004) who studied the status of housing indicators in planning process and Ziyari *et al.*, (2006) who carried out some research into changes of housing in Maragheh, a city in Iran, with the application of 12 housing indicators and felt the positive changes in all indicators during 20 years [13].

MATERIALS AND METHODS

This articles attempts to evaluate the qualitative and quantitative housing indicators during the last 40 years in order to find the housing changes and the applied indicators' advantages and disadvantages. The present

study is of descriptive-analytical and its purpose is applied-developmental research. The population considered in this article is the 70 million people of Iran. The main research question is that with the consideration of various political, social and economic events during the recent decades, whether the housing changes have had positive process and relative recovery both qualitatively and quantitatively. The current hypothesis, along with having all the progressive indicators, considers that in spite of different pressures like the Iran-Iraq War, post-war damages, economic sanctions and many other factors, some positive changes have also been made in housing. For improving the previous hypothesis, the required information have been gathered from the five census records of population and housing in Iran (1966, 76, 86, 96, 2006) and then the indicators have been analyzed in both qualitative and quantitative groups. Following are the applied indicators: a) The quantitative indicators which include the population density in residential units and rooms, the household density in residential units, the average of rooms, shortage of residential units and the ratio of household growth to the growth of residential units. b) The qualitative indicators which include facilities, the quality of holding property, the ratio of durable housing and their durability.

Housing Policy in Iran: One of the most notable recent changes in housing policy in developing areas is the fundamental change in the spatial dimension of poverty. Though the majority of the world's poor people continue to live in rural areas, poverty is rapidly becoming an urban phenomenon. Today, unlike in the mid-1980s, most poor people in large developing countries such as Brazil, Mexico and Russia already reside in urban areas. Moreover, although most poor people in India remain in the countryside, in many of the country's larger states the poverty rate is higher in urban areas than in rural areas for the first time [14].

Housing construction in Iran is done by government, private and cooperative sectors. But we should find out which one had the most dedication and helpfulness in it. The overall housing policy has been formed in five-year economic and social development program which have been designed and run in 5 programs before Islamic Revolution and 4 programs after that; for instance in the last five-year program (2005-2009), i.e. the forth program, which runs its final executive program, the Ministry of Housing and urban development is required to provide the comprehensive housing plan by the end of the first year of forth program with the consideration of interaction

between Housing sector and National Economy as well as the balance-creating role which improve the life and decrease the imbalances [15].

The public sector has decreased its share in housing construction during the last decade as it has been reduced from 20 percent in the years before the Revolution to 4 percent in the years after Revolution. Mojtahedzadeh (2004) believes that in Iran the government policy is decent and the government has intended to do nothing more to intervene in housing and decided to provide little support to social rental sector and rental acquisition [16]. The content of the second and third programs after the Revolution proves this reality.

Currently the public sector's measures in housing include the following: constructing housing for the charities by Imam Khomeini Relief Committee, providing the financial support for banks in housing construction, offering encouragement for mass housing builders and the government's attempts for providing housing for low-income classes with Mehr housing project during which housing is provided for them in the form of 99-year rental duration.

The cooperative sector has subordinate role in house building as it just takes 3 percent. In this sector some workers or employees take the action of making a housing cooperative company to buy a land and make identical houses. Although the overall spent money for different parts like planning, having the land got ready and the building process itself is to some extent saved, yet it hasn't been welcomed. One of the most active cooperative sectors for house building is the educators' which, in most of cities, are made in the form of similar 50 to 100-unit apartments.

According to the Fourth Development Plan (2005-2009) and due to the interaction between national economy and housing sector and its role in promoting the quality of life and reduce inequalities, Ministry of Housing and Urban Development has required to prepare a comprehensive housing plan until the end of first year of IV Development program and approved by the Cabinet. The approaches of the design are sustainable development, social justice and empowerment of low-income strata and includes the following axes: a) Strengthening of housing cooperatives and producer organizations, charities and non government actives in the housing sector. b).

Integrated management of land for housing and development projects within the urban and rural Development. c) formation of the secondary mortgage market, according to legal regulations approved by the

parliament seems. d) increase the share of mass-construction building at three times the rate of development of the country's third program. e) development of capital market and take necessary measures for housing funding in the sector [17].

Iran cooperative sector in housing production activity recently given a broad and positive results in low-income housing is achieve. Mehr housing cooperative charter based on cooperative economics law of Iran has been approved in September 1991 and are inspired by principles of 43 and 44 of the Constitution of Islamic Republic of Iran. The goals of Mehr housing cooperatives are: a) providing housing for homeless people with priority to low-income strata, b) Provide residential land with the help of Housing and Urban Development Organization for members in the form of 99-year lease contract [18]. The latest decision made by the government is privatizing the government-provided housing. However, a part from the socialist public ownership of urban housing in China and Vietnam, Hongkong, Singapore and South Korea all have very powerful housing authorities which have built, distributed and managed urban housing stock [19].

The private sector has dedicated 93 percent of house building in Iran to itself. This sector's members can be divided into three categories: a) individual housing builders (for their own residency) b) mass housing builders (constructors), c) housing builders who pay the rent themselves [20].

Housing Indicators and Their Changes in Iran: Azizi's investigation (2004) shows that the housing indicators are considered as measurable variables and required means for expressing various social, economic, cultural, environmental and housing conditions as well as being the fundamental elements in implementing a comprehensive program in housing sector. In the third socio-economic development program (2000-2004) seven housing indicators have been applied for inspecting the current status and making it purposeful. In this article 10 housing indicators have been considered that we are going to go through in two groups of qualitative and quantitative indicators.

Quantitative Indicators

Population Density in Residential Units: The application of this indicator in different periods can determine the rate of population and house building in a society. In Iran, the positive changes in decreasing the population and increasing the rate of house building have made this

indicator descending through which we can find the society's conditions much better. With the implementation of family planning policy since 1989 Iran's population have had a descending inclination from 3.9 percent to 1.5 percent. However, despite economic pressures on people, the rate of house building has been increasing (Table 1). So, with regard to both changes, the population density has been decreased from 6.61 individuals in 1966 to 4.41 individuals in 2006.

Population Density in a Room: This indicator shows the number of individuals in every room. This ratio is mostly more than 1. The more the value decreases, the more independence each individuals gain in a residential unit. This indicator is one of the outstanding elements for evaluating the quality of life, which is used by the United Nations Population Crisis Committee. This indicator in high-income countries is 0.66 individuals in a room and in low-income countries 2.47 individuals in a room. According to Table 1, this indicator during the investigation in Iran had a positive trend as if it was decreased from 2.52 to 1.34 individuals in a room. However, comparing with developed countries' population density in a room this rate is approximately doubled (Table 1).

Shortage of Residential Units: For Western governments, absolute housing shortages are seen generally as a thing of past. Housing policies are now more likely to be targeted on particular groups such as lone parents or lowest income households or on the new housing demands of demographic ageing rather than as general strategies to raise standards of housing policies or their accessibility [21].

In developing countries, owing to the rapid growth of population and due to some other economic depressions, the standard housing shortage has become one of the remarkable social problems. According to Table 2, during all the investigation periods in Iran the housing shortage was more than one million units.

Household Density in Residential Units: It is supposed that in a standard society every household possesses a residential unit. If this indicator shows number 1, the housing condition is favorable and there would be no housing shortage [22]. Although this indicator has had a positive trend during the 40-year investigation in Iran and its value has changed from 1.289 in 1966 to 1.094 in 2006 and has gotten closer to standard value, by the value of last indicator (1.094) it is meant 94 households out of every 1000 have no housing. In Table 2 you can find the changes of this indicator.

Ratio of Household Growth to Housing Growth: To determine the value of housing distribution with the consideration of household members during any special period like (1996-2006) you can use the following formula:

$$(h \text{ 2006} - h \text{ 1996}) / (H \text{ 2006} - H \text{ 1996})$$

Here h, shows the household members and H, the number of housing (residential units). For sure if the value of this indicator is more than 1, it shows that the household growth is more than housing growth namely it is the indication of housing shortage. You can find it in Table 2. Accordingly, this indicator has been reduced from 1.194 in the first decade (1966-1976) to 0.997 in the last decade (1996-2006). So it reveals the positive trend

Table 1: Changes in indicators of "population density in a room and residential units" in Iran

Year	Population	Housing (unit)	Room (unit)	Person/Housing	Person/Room
1966	25,788,722	3,898,719	10,244,329	6.61	2.52
1976	33,708,744	5,305,538	16,143,287	6.35	2.08
1986	49,445,010	8,217,379	27,682,898	6.01	1.78
1996	60,055,000	10,770,112	39,625,753	57.5	1.51
2006	70,495,782	15,859,926	52,348,916	4.44	1.34

Source: [32] Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

Table 2: The rate of housing shortage during the last 40 years in Iran

Year	Housing (unit) (1)	Households (2)	(1)/(2)	Lake of Housing	Household Growth/ Housing Growth
1966	3,898,719	5,029,320	1.289	1,130,601	-
1976	5,305,538	6,709,068	1.264	1,403,530	1.194
1986	8,217,379	9,626,945	1.171	1,409,566	1.002
1996	10,770,112	12,280,539	1.140	1,510,427	1.039
2006	15,859,926	17,359,576	1.094	1,499,650	0.997

Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

Table 3: Change in Distribution of Housing by room (1966- 2006)

Year	1-2 Room	(%)	3-4 Room	(%)	5 Room	(%)	6,+6 Room	(%)
1966	2,507,291	73.8	1,177,777	19.4	354,401	2.9	410,351	3.4
1976	2,321,201	43.7	2,028,918	38.2	428,606	9.9	784,250	8.2
1986	2,633,750	31.9	3,705,316	45.0	969,838	11.8	903,113	11.0
1996	1,845,709	21.0	5,333,326	49.4	1,757,145	16.3	1,346,564	12.5
2006	6,255,368	35.9	8,844,941	50.9	1,440,972	8.3	690,436	3.9

Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

and the relative efficiency of housing growth over household growth (Table 2). We can seek out its effective reason in the successful implementation of family planning policy and the population decline from 3.9 percent in 1986 to 1.5 percent in 2006.

Average of Housing Distribution by Room: By 1996, during the investigation in Iran the number of housing with 1-2 rooms was declining from 73.8 percent to 21 percent and instead there was an inclination towards increasing the number of rooms in housing. The groups of housing with 3-4 rooms, 5 and 6 rooms all have had an increment (Table 3). In the last decade this process has undergone fundamental changes namely the number of housing with 1-2 and 3-4 rooms has been increased and the others have been decreased, especially the housing with 6 rooms and more has approximately tripled. Its main reason can be the execution of savings policy, mass housing construction and diminishing the size of housing as if it is common among people. In the past, if 100 square meters was considered small in size nowadays 75 square meters is normal. Based on Table 3 in 1966 the average of rooms in Iran was 2.55 and then increased to 3.67 in 1996, but again decreased to 3.29 in 2006. This rate in high-income countries equals to 5.2 and in low-income countries is 2. So what we can conclude is that Iran is located between these two groups.

Qualitative Indicators

Proportion of Durable Housing: This indicator is one of the pivotal elements in scrutinizing the quality of housing in a society. Not being durable housing or the shortage of that is considered as one of the prior indications of distress and privation in a society, which leads to living in slum conditions. For the time being, in spite of developments in housing construction, there still is privation in large scales in different parts of the world due to the unaffordability of required budget for housing. In 2005, slightly more than one third of the urban population in developing regions lived in slum conditions; in sub-Saharan Africa, the proportion was over 60 percent [23].

In Iran, one of the 5-year socio-economic development programs' purposes is increasing the number of durable housing. The significance of this indicator can be twofold. Firstly, it accords with the favorable economic conditions and developed housing construction technology; secondly, the increment of durable housing increases its useful life and maintains the physical quality of housing. The scrutinizing of 40-year census of housing approves that the proportion of durable housing is constantly increasing from 11.7 percent in 1966 to 74.8 percent in 2006; even though, the proportion of substandard housing was 95 percent in 1956.

Residential Units' Lifespan: In order to analyze the housing lifespan, we should extract the census relating to five separate duration and then, based on the construction time, divide housing into four groups of lower than 5 years, 5-10, 10-20 and more than 20 years (Figure 1).

According to Figure 2, we can conclude that the rate of housing in four groups is approximately equal and none of them has major priority over the others. In the last period, 2006, the housing groups with more than 20-year-old age and 29.7 percent have a relative priority over the others. We can claim that for the time being, nearly one third of housing in Iran is composed of buildings which are more than 20 years old and if we add the housing of two groups, we conclude that 43.2 percent of all the housing in Iran has a lifespan shorter than 10 years. This finding might assure that most of the current investment is absorbed by the housing sector and the other sectors are deprived of that.

Availability of Infrastructure: Essential infrastructure, as an indicator, can be of paramount importance for evaluating the quality of life. More than 90 percent of Iranian households have access to essential facilities like electricity and piped water (Table 4). In 1966, accessibility to electricity and water was 37.1 and 14.3 percent respectively. The rate of accessibility to gas, which was

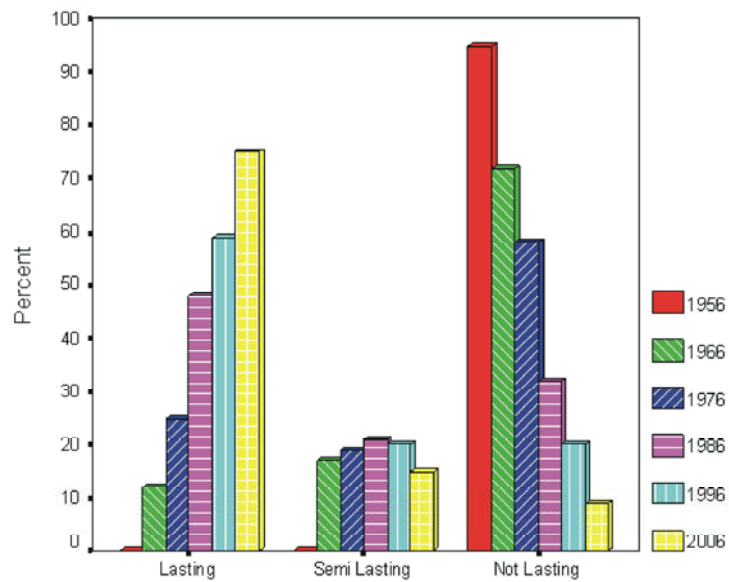


Fig. 1: Changes in housing durability assessment in Iran
Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

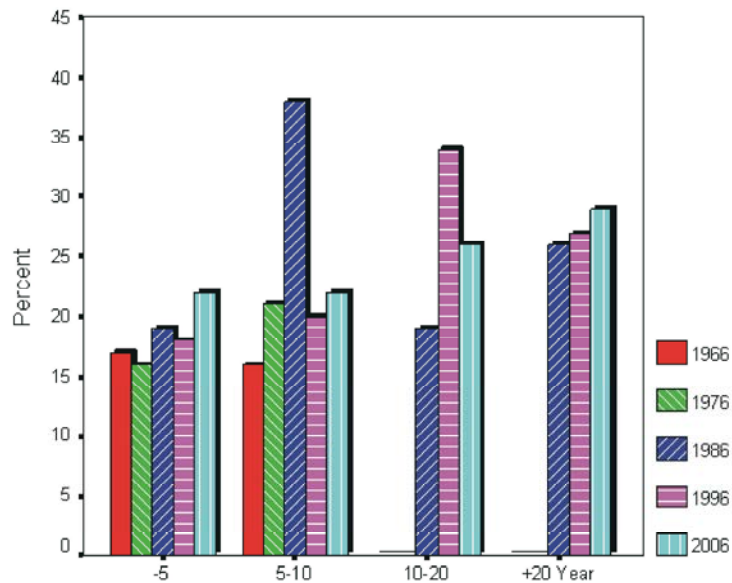


Fig. 2: Changes in Life of Housing in Iran (1966-2006)
Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

Table 4: Connections to Infrastructure (%)

Year	Water	Electricity	Telephone	Natural Gas	Kitchen	Bathroom
1966	14.3	37.1	0.0	0.0	n.a*	n.a
1976	51.9	48.2	6.8	0.0	n.a	n.a
1986	74.5	84.2	11.7	6.0	41.6	43.9
1996	87.4	95.3	35.3	35.3	73.5	65.5
2006	91.7	99.2	81.3	65.6	94.4	85.9

Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

near to zero in the years before the Revolution, is 67.9 percent for the time being. This rate for telephone line increased from 6.8 percent in 1976 to 81.3 percent in 2006.

Home Ownership: Housing is an important financial investment. The majority of the population aspires to achieve homeownership. Accumulating the capital to purchase a dwelling is an important challenge for many. The high rates of home ownership in Australia, Canada and the United States, where the majority of households live in owner-occupied housing, attest to the popular belief that housing is a successful financial investment [24]. Most households aspire to climb the housing ladder, from rental to ownership, from small dwelling to larger dwelling and from apartment to stand-alone house [25].

The rate of home ownership in many Eastern countries like Singapore and Taiwan is 86 and 85 percent respectively [26]. In Iran from the advent of civilization, home ownership was considered as one of the outstanding needs of Iranian people; relating to this fact Gazenfon points out, "Home ownership is supposed as the most essential and significant property for Iranians" [27]. Riyazi believes that home ownership for the Iranian people is not only a place of living in but also as complementary to security and resistance and because of that in Iran the proportion of home ownership during the last phases has been more than 67 percent [28] (Figure3).

According to this figure the rate of home ownership in 1986 was 77 percent and after that, during the last three decades, the rate of home ownership has been gradually

decreased to 67.9 percent. Conversely, the rental rates during the last three decades have increased to 11.9 and 22.9 percent in 1986 and 2006 respectively. Its main cause is the increasing of required budget for housing construction, materials and workers' wages. However, from summer of 2008, government has implemented some policies to reduce the costs of materials and land. All around the world there are many countries with high rental rates, like Egypt, in which 30.7 percent of households are lodgers [29]. In Latin America, in general, despite the huge growth in owner occupation, home rental is still an alternative for a large number of the population [30].

Predicting the Number of Required Housing until 2025:

During the last 40 years the rate of housing growth was 3.5 percent; but during the current phase, this rate is 2.5 percent. In fact, the population and the number of housing have grown 2.7 and 4 times respectively. If it continues likewise, according to predictions made by researchers, Iran's population would grow to over 92 million in 2025.

To predict the housing required in Iran until 2025, the Crude Method was used. Reason for using this method is that in most countries, the total population and population growth rates and family size is specified and the total number of housing statistics are available. By the algebraic expression that can be estimated housing needs are: [31].

$$E_t = H-U + H_t + RU_t \quad (1)$$

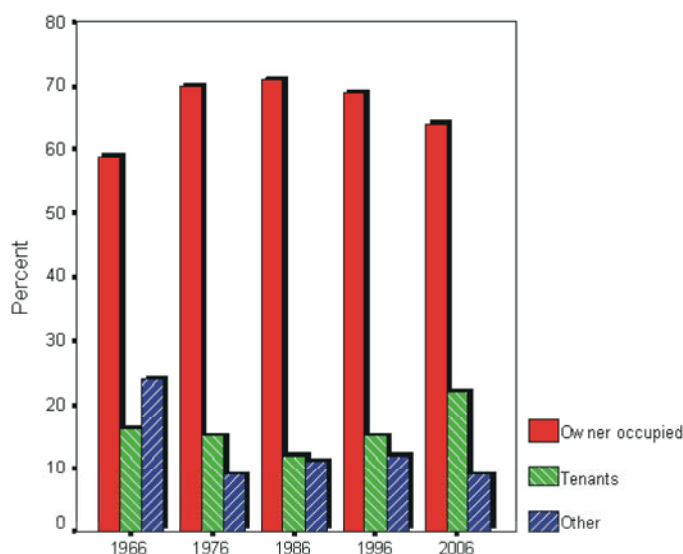


Fig. 3: Changes in the rates of home ownership in Iran (1966-2006)

Source: Statistical Center of Iran, 1966, 1976, 1986, 1996, 2006

In which; E_t , needed residential units until t , (H) Number of households, (U) Total existing residential units, H_t , the number of existing families and new households need, RU_t , percent of residential units that need to time t will be destroyed and rebuilt. The estimated degradation rate 1.5 per thousand units were calculated. And by then, the estimation for required housing would be 7.8 million units. Considering that until 2025, 452 thousand units would be substandard; 411 thousand units should be constructed so that up to then every household would be a home owner by themselves. With the consideration of the fact that the average number of constructed housing is between 400 and 550 thousand units each year, meeting the needs of each household for home ownership is not out of expectation.

CONCLUSION

Housing can be considered from different dimensions. Complex housing relationships interweave with different social factors like population growth, number of households, occupation and unemployment, income level, social strategies, technical knowledge to name a few. Any change in social, political and economic factors can influence housing. In Iran, even though during the 40-year investigation the average housing growth has been more than population growth, the shortage of housing has been more than one million units in all the durations. Its main causes can be related to old-fashioned housing construction, low incomes in considerable proportion of the society, high budgets for housing construction and etc. During the last decades, government policies were based on government's weak intervention in housing construction and the government's role has been reduced from 20 percent in 1976 to lower than 5 percent now.

Based on the investigations carried out in qualitative and quantitative housing indicators, improvements and positive changes can be tangible. The population density in a residential unit and a room has been decreased from 6.61 to 4.41 and 2.52 to 1.34 individuals respectively. The household density in a residential unit has moved from 1.289 to 1.094. The ratio of household growth to housing growth, except for the last decade, was more; so it is the indication of high speed in setting up a household and marriage coefficient. With the exception of the last decade in which 1-2 room housing increased, the indicator of average room in housing shows the people's inclination towards high number of rooms in housing.

Durable housing is gradually increasing as from 11.7 percent in 1966 to 74.8 percent in 2006. This is a remarkable change in housing and is in line with many other elements like knowledge improvements, housing construction technology, attempts at retrofitting buildings in earthquake and increasing people's salaries. Nearly half of buildings in Iran have lower than 10-year lifespan; this can be another reason for high rates of housing construction and competition in housing market. For the time being, more than 90 percent of housing in Iran has the essential infrastructures like piped water and electricity, this rate for telephone and gas is 81.3 and 67.9 percent respectively. It is many years that home ownership has been one of positive social values in Iran and during all the periods of investigation it was more than 67 percent. Lodging in Iran has had an increasing process to 22.9 percent. Based on predictions, by constructing 411 thousand residential units each year, until 2025 every household would be a home owner. Consideration of current situation's continuity and available evidence make this hypothesis more likely to be confirmed.

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