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Demographic comparative in heritage texture of Isfahan City

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Attention to heritage area and old texture is very usual in Iran. Since last two decades, revitalization and renovation of historic cores has begun partly in some of the traditional Iranian cities. Historic centre of Isfahan is among the most important cases in central part of Iran. The aim of the conservation of heritage areas in this city is to revive the past image, restoring the ancient parts which still survive, and to adapt the traditional fabric to use in modern life. In this paper, we try to find the relationship between population trends, employment structure, marital status and size of the housing units in the 1st and 3rd municipality district in historic center of the Isfahan city. The result of this present study shows principles which are considered uneven in distribution of population in heritage textures of Isfahan.

Key words: Heritage textures, municipality district, historic center, demographic comparative, population density.

INTRODUCTION

The heritage texture usually located in the centers of the cities is valuable places with old age, historic buildings and structures that are worth to be preserved (Nijkamp and Riganti, 2008). However, many of these areas are being increasingly threatened and destroyed as a result of high urbanization and population pressure everywhere in the world. Knowing demographic structure of this part of city will help us to have a balanced distribution for six factors: population density, population growth rate, average of age and average educational level of household heads, and employment status of household heads and their pattern of living arrangements (Max, 2000).

In recent year, urban planning in Iran approach slowly, pushing the historic part of the cities on the side and changed them to slum areas. In this case, the heritage textures of Isfahan with many valuable monuments has become as the old texture of this city.

This important issue is often dealing with a lot of problems by professionals and authorities of the city. It is clear that population growth in Isfahan has resulted in a number of problems and issues in recent years, such as high density in urban center, traffic congestion, poverty, unemployment, limited housing and poor housing in old texture. These problems are persuading especially in central part of the city, this has to be tackled by the concerned professionals and authorities of the city.

Study area

Isfahan city is located in 32°38' 30" N latitude and 51°38' 40" E longitude (Figure 1). The minimum height is 1550 m around Zayandeh Rood and maximum is 2232 m in Sofeh Mountains. Annual average precipitation and temperature is 121.1 mm and 16.2°C, respectively.

Isfahan is the capital city of Isfahan province and the third biggest city in population in Iran after Tehran and Mashhad, and one of Iran metropolis. In recent decades, it has been the center of attention and high density of population because of concentration of economic activities like industries, tourism and also demands for cultural development which caused for different types of industries, housing, transport, business, cultural, educational and entertainment uses (Ferdowsian, 2002).

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Figure 1. Location of the study area.

METHODOLOGY

The study is based on secondary and primary sources, according to purposes of this research; it is a basic-applied one, which uses the descriptive-analytical method, Data were collected by the reviewing texts and information collected from census of Iran, municipality of Isfahan, Iranian organization of cultural heritage crafts and tourism, Ministry of housing and Urban Planning, published book and journals and also from internet sources. Data analysis was done by the qualitative and intellectual analysis and processed by using cartography techniques to analysis the heritage municipality texture with other municipality areas in Isfahan city.

Heritage textures of Isfahan

Today's heritage textures of cities has some common problems like deteriorating of houses, low income level, the presence of traditional class of society next to newly arrived immigrants and in adequate urban services but each of them have their own characteristics. Generally, those parts of the cities which were formed in Qajar era are addressed as old texture. In fact, the central part of the city has undergone some changes during Pahlavi era (Tavasoli, 1994) in the heart of Isfahan, with all its wonderful symbols as the same as historical texture of the city. Therefore, there are 1300 ha of old and historical textures which cover 85 urban neighborhoods.

The old textures of Isfahan are different and have exceptional characteristics; from its wonderful architecture which is decorated with tiles and brick, to the hidden treasures and valuable in it Historical-cultural aspect. Old texture is not just the problem of construction but economic, social and cultural aspects.

Population of municipality district in Isfahan

At the time of the first census of the cities of Iran, which was carried out in 1956, the city of Isfahan had a population of 254,708. As

such, Isfahan is ranked third in terms of population after Tehran (1,512,082) and Tabriz (289,996). According to the 2006 national census, the city had a population of 1591682, but now it increase six fold over a span of 50 years. According to the results obtained from latest census 2006, population of Isfahan city is 1591682, of which 49.0 3% are female and 50.97 % are male. Isfahan is the 3rd most populous city in Iran. The population of Isfahan city has extremely young people with over 20.68% under 15 years and 5.29% above 65 years respectively. The municipality districts limits of the Isfahan encompass an area of 15263 sq. km with a population density of about 5240 persons per sq. km as per 2006 census. The gross density of the city clearly indicates an increasing trend from the year 1986 to 2006.

The historical axis of study started from: the bazaar stretching about 2500 m from Toghchi Gate to Naghsh-e-Jahan Square; The Safavid Court Quarter 500 m Length from Naghsh-e-Jahan Square to the beginning of Chahar Bagh; The Abbasid Chahar Bagh with an approximately 1500 m length, from Dowlat Gate to the Zayandeh–Roud River; (UNESCO World Heritage Center, 1992-2011).

Thus, it can be seen that the density in the mixed land use heritage areas of the Isfahan city is higher compare to other districts as the city is divided into 14 municipality district but the distribution of population is non-uniform in the city. The district number 1, 3, 8 and 10 has high concentration of population whereas the district number 12, 4 and 6 has lower percentage of growth (Figure 2).

The 14 municipality districts of Isfahan shows that, mean age in heritage municipality areas are more than average of Isfahan, and also sex ratio in first and third areas are in the lowest in sex ratio (Table 1).

Literacy rate

Literacy is another indicator of city development. For purpose of census, a person in age limit of seven and above, who can both write and read with understanding in any of the language is considered as a literate (UNESCO, Literacy and Development, 1988).

In the recent years, Iran has experienced substantial improvement in literacy and in the proportion of the population of student up to primary education (Jones, 1988). In Isfahan as regard census 2006, nearly 90.6% of the population aged 6 years and above are literates. The literacy rate is 52.2% for male and 47.8% is for female. Of the 418,000 enrolled students, 38.9% were at the elementary level, 28.3% were at junior high school level, 23.8% were at high school level, and 9% were enrolled in institutions of higher education. In recent years, the number of women entering university has exceeded the number of men. The literacy rate in the city of Isfahan increased from 48% in 1966 to 91% in 2006. Average of illiteracy rate in municipality district of Isfahan is 9%, 1st and 3rd district old texture of Isfahan stand in 6th and 8th rank with 7.7 and 8.8% (Figure 2).

Employment structure

The percentage of the 10-year-old and over economically active and employed population of Isfahan decreased from 40.6% in 1966 to 33.9% in 2006. The changes in the relative share of the main economically active and inactive populations of the city are presented in (Table 2).

It is clear that the percentage of the employed among the population 10 years of age and over has decreased. In fact, in the 30 years period between 1966 and 1996, the employment rate decreased by 8.4% and between the 10 years period of 1996 and 2006 employment rate increase by 4.6%, while the percentage of students notably increased in the same periods. The unemployment

figures given in Table 2 have been obtained through comparison with the total population of 10 years of age and over. If these figures are calculated among the active population, the unemployment rate experiences an increase 2.5 from 1996 to 2006. Therefore, the employment rate for the city's population in the years mentioned above would be 96.5, 95.8, 87.3, 91.6 and 90.1%, respectively.

Marital status

The system of classifying the population by marital status varies from country to country and from society to society with specific prevailing laws and customs. The information on marital status in most cases is collected from persons above a certain minimum age, which is the lower limit of age at marriage in that particular country. In Iran persons of age 15 years and above were considered (Statistical Centre of Iran, 2006).

Tables 3 show the marital status of population of age, 15 years and above in municipality district in Isfahan city. From the Table 3 it can be observed that the majority of the people were either in the never married or married categories for all municipality districts. In 2006, of the total population 15 years of age and over, 59.7% of males and 68.4% of females had been married at least once. The mean of the first marriage age, for females and males in 2006 was 23.7 and 26.4 years respectively. According to Table 3, the percentage of people in widow and divorced categories in 1st and 3rd municipality district, stand in the highest rate but this is not true for marriage category percentage.

Housing form

Modernization in Isfahan has led to many social, cultural, and physical transformations. However, modernization is concentrated on the physical aspects of life, leaving unchanged most of the cultural norms and values that constitute living habits. New apartment buildings, in Isfahan which are the most commonly used residential pattern in big cities, are completely different from older traditional houses that they have in heritage texture of Isfahan city (Figure 4). This new type of residence introduced modern facilities for more comfortable living, but departed greatly from the familiar traditional houses (Figure 5).

Table 4 shows the size of the housing form in isfahan. The highest number of housing unit in the area between lies between 1081 to 1610 square feet which means the regular size of the house is stand in this particular category.

The 1St and 3th municipality district number of the houses in last category (5380 and more) are stand in highest rank to compare with any other district. And also in Figure 2 the heritage textures are in highest density, this unbalance share shows that in heritage texture of Isfahan city traditional house play an important role in Housing form of Isfahan city (Figure 3).
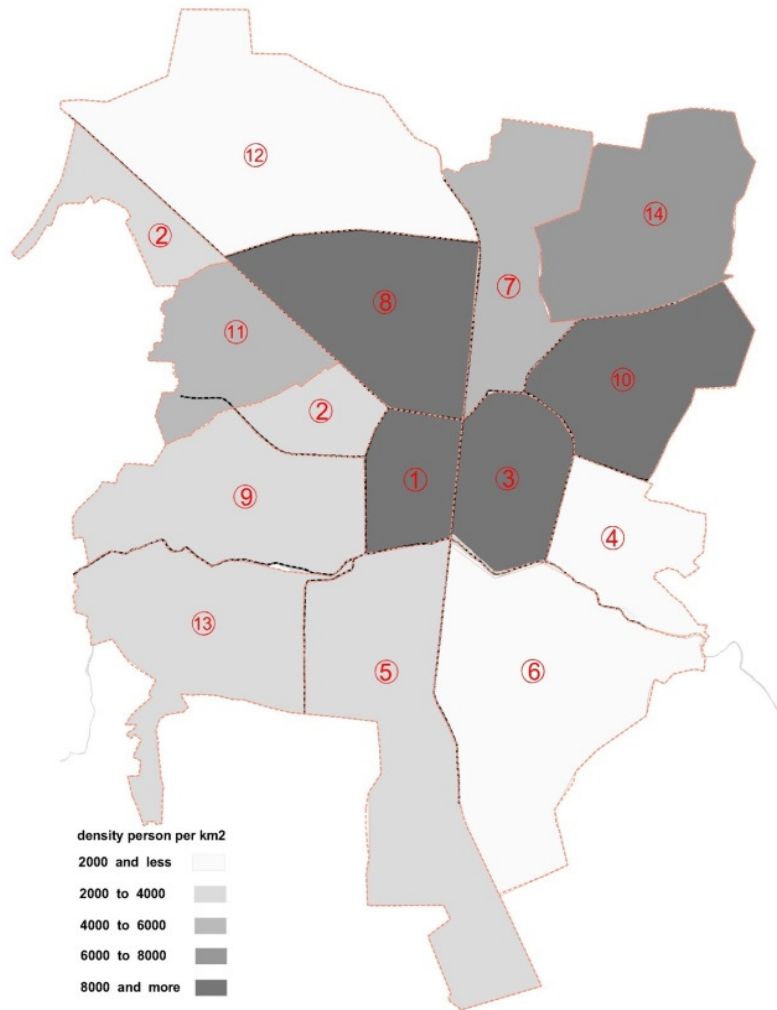
FINDING

Mean of age in 1St and 3th municipality district are highest in the city (Figure 6)

Number of the households and sex ratio are low in CBD, compare to other municipality districts.

Percentage of widow and divorced are more in first and third municipality district.

Percentages of housing unit in 500 m^2 and above categories are highest to compare with other districts (Figure 7).

Figure 2. Population density of municipality districts in Isfahan.
Source: Isfahan Municipality, 2010.

Table 1. Age and sex ratio in Isfahan Municipality Districts.

Municipality	Mean	Medium	House hold	Sex ratio
1	31.7	34.1	3.3	97.7
2	26.6	29.3	3.7	106.2
3	30.4	33.3	3.4	100.6
4	28.8	31.5	3.5	102.9
5	28.3	31.8	3.6	100.2
6	29.9	33.1	3.4	102.3
7	25.3	27.7	3.8	105.4
8	27.2	29.7	3.7	103.2
9	28.2	30.9	3.5	104.8
10	26.9	29.6	3.7	105.6
11	25.4	28.2	3.8	106.9
12	26.5	28.6	3.7	104.9
13	27.2	29.8	3.8	113.6
14	23.2	25.9	4	106.6
Isfahan	27.8	30.3	3.6	104.1

Source: Isfahan Municipality, 2010.

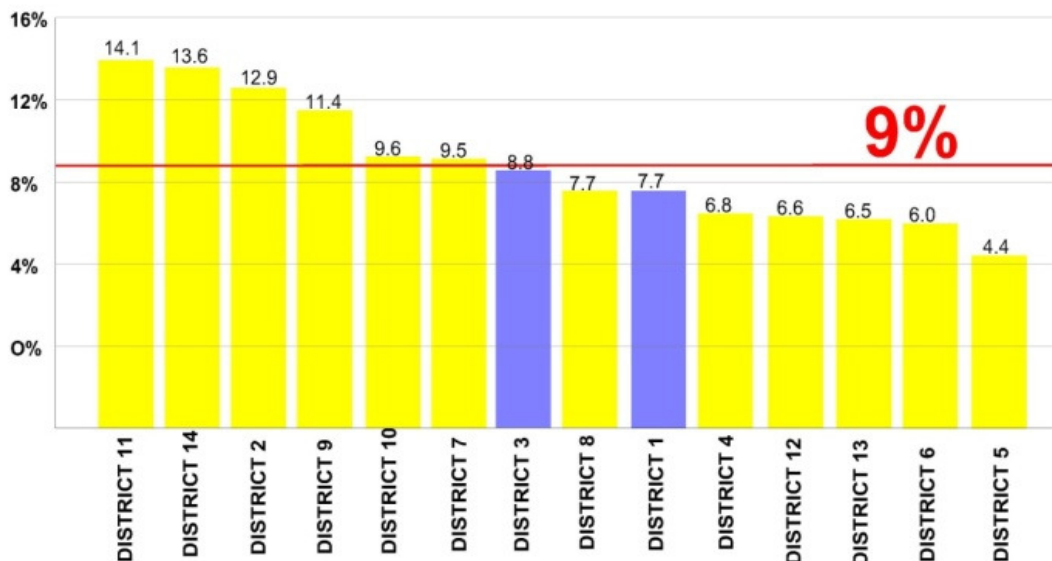**Table 2.** Employment structure in different decades.

Year	Population 10 years and more	Activity rate			Non activity rate			
		Employed	Unemployed	Total	Student	Homemaker	Income recipients	Others
1966	290269	39.2	1.4	40.6	19	33	6.1	1.3
1976	481373	36.8	1.6	38.4	26.4	30.7	3.5	1
1986	694573	33.8	4.9	38.7	22.3	32.8	2.7	3.5
1996	997693	30.8	2.8	33.6	30.2	28.7	4.3	3.2
2006	1376004	35.4	3.9	39.3	22.7	26.6	7.1	4.3

Source: Statistical Centre of Iran, Census Data 1956-2006.

Table 3. Marital status in Isfahan Municipality Districts.

Municipality district	Marital status				
	Married	Widow	Divorced	Not married	No. of response
1	37443	4040	611	23444	151
2	28136	1718	230	16555	60
3	56435	5866	931	35157	212
4	59342	3498	666	35474	206
5	70311	4876	1097	53043	271
6	54972	3967	816	35733	212
7	64103	3876	757	38609	196
8	103954	5747	1260	64616	563
9	35359	2638	344	20839	176
10	97941	5459	981	58517	412
11	47851	2440	694	29469	150
12	55342	2686	706	36667	282
13	70445	3312	631	43473	182
14	809247	51744	9925	508650	3180

Source: Isfahan Municipality, 2010.

Figure 3. Literacy rate in the different district.

Figure 4. An Ordinary Residential Building, Isfahan.

Table 4. Number of housing units in Isfahan municipality districts.

Municipality district	Number of housing units per area (ft²)								
	less than 50 m²	(51 – 75) m²	(76 – 80) m²	(81 – 100) m²	(101 – 150) m²	(151 – 200) m²	(201 – 300) m²	(301 – 500) m²	501 m² and more
1	885	1606	1132	3758	6657	3996	2433	968	204
2	550	1008	725	2688	4248	2673	1247	277	32
3	1501	2723	1937	6554	9350	5238	3013	1009	246
4	1168	2521	1804	5918	10839	5585	2236	711	85
5	1426	2575	1796	7259	15586	6523	2867	972	197
6	1861	2953	2031	4346	8595	6111	3339	1092	200
7	1622	3483	2675	7477	10708	3854	1906	429	36
8	1962	4808	4123	12951	16898	7958	4126	1129	160
9	798	1255	828	3104	5265	3526	1975	511	93
10	2831	5955	4123	11499	14382	7232	2826	774	66
11	787	1432	949	2778	3712	2118	968	227	17
12	864	2784	1934	6728	7271	2547	1881	447	98
13	1338	2851	2162	5758	9696	4004	1297	407	40
14	3589	7205	3926	7494	6868	2425	788	115	16

Source: Isfahan Municipality, 2010.
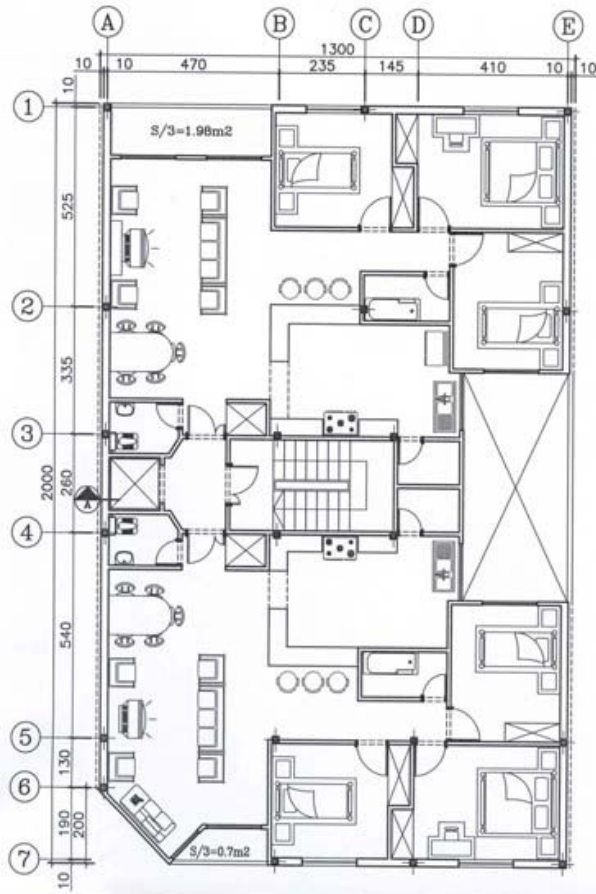
Figure 5. Plan of Residential building with Two Units in Each Storey, Isfahan.
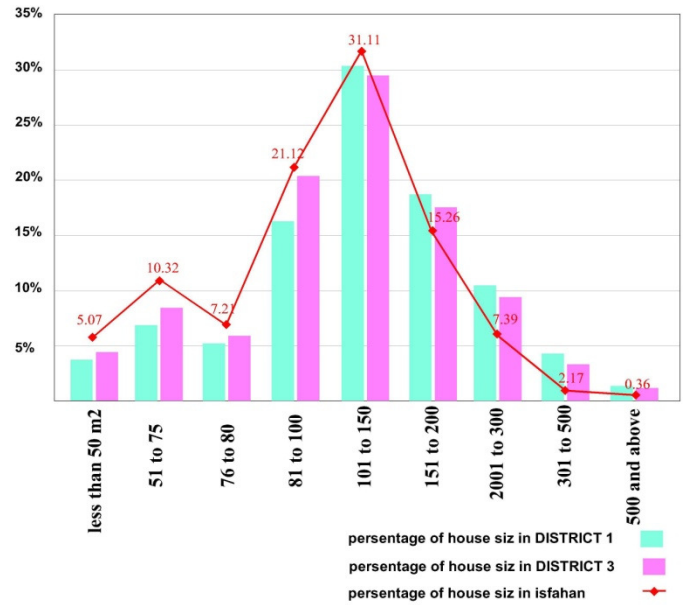

Figure 7. Comparative Isfahan city house size with 1St and 3th municipality district.

Density of population in 1St and 3th municipality districts are 9398 and 10201 person per km^2 whereas 6337 in Isfahan City.

Literacy rate in Isfahan city increased from 48% in 1996 to 91% in 2006 and from 92.3 to 91.2 in heritage texture (1St and 3th municipality district).

Aged population has been concentrated in city center but growth of population is more in another municipality district (Figure 6).
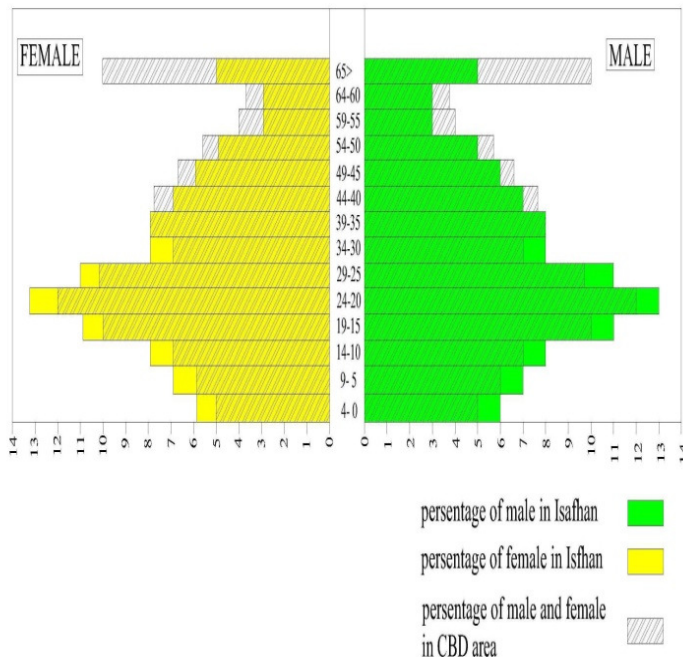
CONCLUSION AND STRATEGY

In recent decades, people are interested to live in metropolitan city because of lots of economic, social and political reasons. Unbalance population is the most important problem in municipality district of the cities and this problem has more impact on cities which have a long history, ancient culture and monuments. Many different factors are effective to increasing population in heritage texture of Isfahan city. In fact the most important factors are immigrant from outside of district, low cost of land and house, accessibility to the city center, low level of urban service and special construction of the city core.

Strategy for renovation and reconstruction of 1st and 3rd municipality district is the best way to save heritage texture in Isfahan city center. In the other hand, planning a business activity (bazaar) in different places of central business district especially in low density district and in direction of Isfahan development growth, consequently may lead to redistribution of population and activities would ensure balanced growth in the city center of the city, especial 1st and 3rd municipality district.

Figure 6. Age and sex pyramid of Isfahan city and CBD area.

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