Cumhuriyet Üniversitesi Fen Fakültesi
Fen Bilimleri Dergisi (CFD), Cilt:36, No: 3 Ozel Sayı (2015)
ISSN: 1300-1949

Cumhuriyet University Faculty of Science
Science Journal (CSJ), Vol. 36, No: 3 Special Issue (2015)
ISSN: 1300-1949

Evaluation quality of life in Metropolises of Iran; Case study: Mashhad City

Mohammad Hossein SARAİ[1], Seyed Mostafa HOSSEINI[2,*], Zahra ABBASI[3],

Kobra SORKHKMAL[4]

[1]*Associated Professor of Geography and urban planning, University of Yazd, Department of Geography, Yazd, Iran*

[2]*Ph.D Student Geography and Urban Planning, Ferdowsi University of Mashhad, Mashhad, Iran*

[3]*MA graduate of geography and urban planning, Chamran University of Ahwaz, Ahwaz, Iran*

[4]*Young Researchers and Elite Club, Ghouchan Branch, Islamic Azad University, Ghouchan, Iran*

Received: 01.02.2015; Accepted: 05.05.2015

Abstract: Life quality has multidimensional concept and it is relative and affected by time, place and individual and social values. The importance of life quality studies especially in countries like Iran with increasing urbanization is that it can result in problem-making areas and making management strategies and optimal planning. On this basis, this research assesses quality of city environment in Metropolis like Mashhad. This research has practical objective that data were collected by descriptive-analytical method and questionnaire distributed among head of the families in localities. Then by entering data to SPSS software, the first decision making matrix was made and using VICOR method the studied localities were evaluated on the basis of the quality life indexes. The results of the research showed that the neighborhoods of Azadshahr and Golshahr with the Q value of 0 and 0.506 were the best and worst localities from the quality of life perspective and the localities of Sarab, Pardis and Jahedshar with the Q value of 0.506, 0.620 and 0.694 were ranked respectively from the second to the fourth ranks.

Keywords: Quality of Life, VICOR Method, Mashhad Metropolis, Iran

1. INTRODUCTION

After industrial revolution and changing life structures, the farming society changed into industrial society and after that population of the cities was increased by large migration from villages to cities (Souzanchi, 2004). Although city and city life are considered one of the most important social, economic and welfare indexes (Ghafari and Omidi, 2009), but it's fast increasing can reduce the access to social and economic facilities (Aliakbari and Amini, 2010) and by this way reduce the life quality level in different urban areas. The importance of life quality studies is that makes aware the citizens, social groups and policy-makers from life quality trends (Kokabi, Pourjafar, Pourtaqvaee, 2005), and from this way we can evaluate and contribute policies, rank and evaluate city life quality indexes, places, establishing management strategies and urban planning and provide social issue ranking for urban planners and managers for improving quality of citizens (Rezvani et al, 2009).

* Corresponding author. *Email address*: s.mhosseini@stu.um.ac.ir

Special Issue: The Second National Conference on Applied Research in Science and Technology

Life quality has multidimensional concept and it is relative and affected by time, place and individual and social values (Rezvani and Mansouriyan, 2008) and it has many interpretations in various sciences because of its different dimensions and identity (Lee, 2008). Some of them interpret it as biological capacity of an area, measuring satisfaction level, general welfare, social well-being and happiness (Empley and Menon, 2007). Yet there hasn't been any comprehensive definition for it as Muller in 1982 defines life quality as welfare level of people and groups under social and economic situations. Piston in 1995 defines life quality correction as environment situation of people (like pollution, housing quality) and some of the characteristics of people (like well-being and access).Also global health organization defines life quality personal understanding of life conditions in the context of cultural systems and society values in relation with goals, expectations, standards, interests and personal concerns. According to the proposed definitions we can say that life quality relates to welfare level, convenience and satisfactory of residents in a geographical area (village, city, county, country) and physical, social and economic characteristics. Urbanization in Iran in recent periods has increased dramatically as city population in 1996 was 61.31 percent, in 2006 68.48 and in 2011 it was 71.4 percent (Statistics center of Iran, 2011). This unduly increase of urbanization without necessary substructures in cities has affected on city territory practical, decrease of life quality especially in Iran Metropolises. This situation in Mashhad as the biggest city of Khorasan Razavi County and the second Iran Metropolis and the first religious city of Iran receptive of millions of pilgrims annually and with ever increasing population is more intense as this problem has caused increasing different dimensions of life, environment wretch and wide contaminations in this city. On the basis of this in this research life quality indexes in Mashhad Metropolis have been assessed.

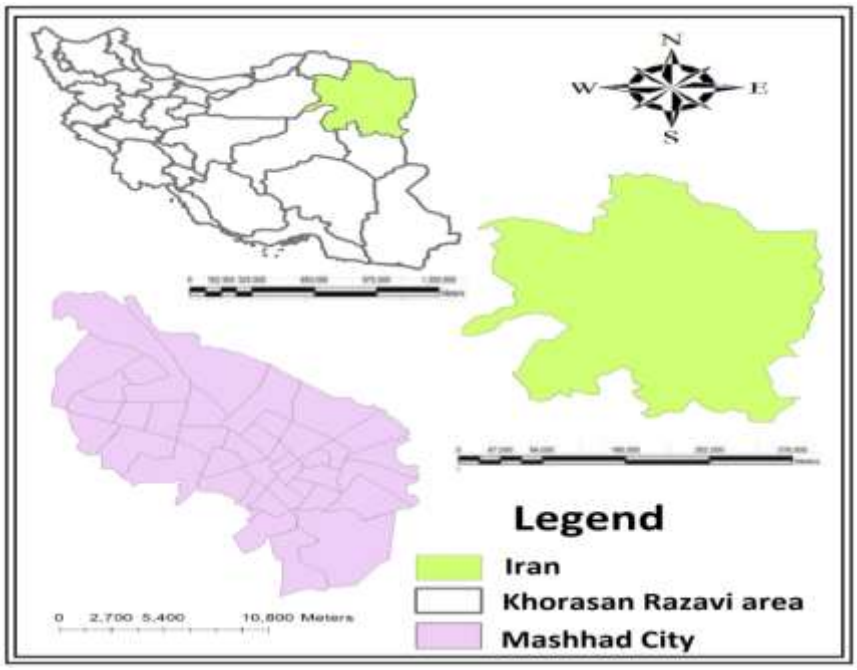

Figure 1. Position of city of Mashhad in Iran.

2. MATERIAL AND METHODOLOGY

The present research has practical aim and its method is descriptive-analytical. In this research first by using library and case studies and experts opinions about housing indexes, physical and mental status of families, economic status, transportation condition in localities, health condition in localities, access to services and equipment, local security level, participation to locality, satisfaction with city management function, participatory role in locality, social communication rate in locality focusing neighborhood relationships in the form of 46 questions for examining life quality of residents. Then the neighborhoods like Azadshahr, Sarab, Pardis, Jahedshahr and Golshahr were randomly chosen among all of the localities of Mashhad as superior localities and with respect to the subject of the research, family analysis unit was determined in neighborhoods. In the next step, the tool of questionnaire approved by content analysis method and pre-test approach was distributed among family heads using random sampling method and Cochran method having 323 persons. Stability of SPSS was assessed by entering collected data to the measure tool software context that was 0.734 using Cronbach test. In the next step according to the measure level of data, matrix of decision-making using Kruskal-Wallis test as different tests was formed. Then using (AHP) method the weigh rank of each index was determined. In the next step using multi criteria decision method i.e. Vicor as practical multi criteria decision method (Opricovic and Tzeng, 2004) some alternatives were ranked and agreeable techniques for problems with opposite criteria were determined (Chen and Wang, 2009) and then the studied localities were evaluated from the perspective of life quality.

3. RESULTS

a. Life quality approaches

In general, life quality studies are performed in two micro-level (individual-mental) and macro-level (social-objective) (McMahon, 2002) and can be measured in both levels with the related indexes of each one or combination of them (Lotfi, 2009).

b. Mental level

Life quality as a mental concept has been considered on the basis of the values and individual inclinations and in relation to satisfaction level from life. In other words, "satisfaction with life" has been focused as main component of life quality. As Lee expresses, the most appropriate way for discovering the life quality is asking people's perception about their lives (Lee, 2008:128). In general this level represents welfare, luckiness and satisfaction from life (Brown, Bowling and Flynn, 2004:6).

c. Objective level

Life quality in this level views providing basic needs, gaining material sources for satisfying social needs of citizens (Sufian, 1993). In this case, the satisfaction level of needs, wanting and expectations are considered (Ulengin, Ulengin, Guvenc, 2001) which are general and essential for life (Ahmadi and Islam, 2009:114). In this level, three general welfare, economic, physic-environmental dimensions are considered (Rettig and Leichtentritt, 2005:2). In this research we have used combination of objective and mental methods for assessing life quality in Mashhad City.

d. Forming primary decision making matrix

In this step M choices and n studied index are listed that characteristics of each of them is shoed by xi. For each choice there are a set of indexes that its value is represented by xij. Table 1 shows primary decision making matrix resulting from Kruskal-Wallis test.

Table 1. Primary decision making matrix.

Index / locality	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
Pardis	183	145	162	165	206	175	179	176	89	158	124
Golshahr	86	109	98	103	186	135	79	126	45	134	65
Sarab	219	182	217	128	163	251	206	242	126	231	175
Azadshahr	274	203	245	142	179	284	265	328	175	271	206
Jahedshahr	126	114	127	116	192	162	141	152	53	162	72

e. Forming non criterion matrix of first data

When xij first value is the i th option for the j th index. We can use the following relation called norm non criterion method for deciding non criterion primary matrix.

$$f_{ij} = \frac{x_{ij}}{\sqrt{\sum_{j=1}^{n} x_{ij}^2}} \; i = 1,2,...,m; \quad j = 1,2,...,n$$

Equation 1

In this relation xij is first value and Fij is the non-criterion value ith choice. It should be noted that all of components non criterion decision making matrix should be between 0 and 1.

Table 2. Non criterion matrix of first data.

Index / locality	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
Pardis	0.4316	0.4182	0.4062	0.5567	0.4959	0.3742	0.4331	0.3622	0.3656	0.3569	0.3964
Golshahr	0.2028	0.3143	0.2457	0.3475	0.4478	0.2886	0.1911	0.2593	0.1849	0.3027	0.2078
Sarab	0.5165	0.5249	0.544	0.4319	0.3924	0.5367	0.4984	0.498	0.5176	0.5218	0.5595
Azadshahr	0.6462	0.5854	0.6142	0.4791	0.43097	0.6072	0.6412	0.675	0.718	0.6122	0.658
Jahedshahr	0.2972	0.3288	0.3184	0.3914	0.46227	0.3464	0.3411	0.3128	0.2177	0.366	0.2302

f. Determining partial importance of indexes using (AHP)

In this research because of the heterogeneity of importance of life quality indexes, at first dual comparison was applied using nine -quantity questionnaire of Tomas L saaty and life qualities of experts in the form of 48 questionnaires. Then because of the difference between dual comparisons, we used Copeland method for combining experts' ideas. Finally using analysis of hierarchical process (AHP) weigh and partial importance of each of the life quality indexes were detected.

Table 3. Partial weight of life quality using AHP.

Index / locality	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
Weight	0.109	0.113	0.048	0.075	0.102	0.118	0.064	0.089	0.101	0.125	0.056

g. Forming weighed matrix of non-criterion first data

In this step using the index weights and the following relation, weighed matrix of non-criterion first data obtained: $V = N \times W_{n \times n}$ in this relation V is weighed non criterion matrix and $W_{n \times n}$ is the weight of the studied indexes.

Table 4. Weighed non-criterion matrix of first data.

Index / locality	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
Pardis	0.047	0.0473	0.0195	0.0418	0.05059	0.0442	0.0277	0.0322	0.0369	0.0446	0.0222
Golshahr	0.0221	0.0355	0.0118	0.0261	0.04568	0.0341	0.0122	0.0231	0.0187	0.0378	0.0116
Sarab	0.0563	0.0593	0.0261	0.0324	0.04003	0.0633	0.0319	0.0443	0.0523	0.0652	0.0313
Azadshahr	0.0704	0.0662	0.0295	0.0359	0.04396	0.0717	0.041	0.0601	0.0726	0.0765	0.0369
Jahedshahr	0.0324	0.0372	0.0153	0.0294	0.04715	0.0409	0.0218	0.0278	0.022	0.0457	0.0129

h. Detecting the best and worst value for index functions

If the interest indicator function is positive, we use the relation 2 for detecting the best value and if the interest indicator function is negative we use relation 3 for detecting the best value. It is also it should be noted that sometimes the worst values is detected the best value regarding its negative or positive indicator.

Relation 2

$$f_j^* = \quad Max\ f_{ij} \quad , i = 1,2,...,m$$

Relation 3

$$f_j^- = \quad Min\ f_{ij}, j = 1,2,...,n$$

Table 5. The best and worst values of function indicators.

Index	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
f*	0.0704	0.0662	0.0295	0.0418	0.05059	0.0717	0.041	0.0601	0.0726	0.0765	0.0369
f-	0.0221	0.0355	0.0118	0.0261	0.04003	0.0341	0.0122	0.0231	0.0187	0.0378	0.0116

i. Computing space values of choices with ideal negative and positive solution

In this step, the space of each value from ideal positive solution is measured and then sum of them is computed by relations 4 and 5.

Relation 4

$$S_i = \sum_{j=1}^{n} \frac{w_i (f_j^* - f_{ij})}{(f^* - f_j^-)}$$

Relation 5

$$R_i = Max[w_i (f_{ij}^* - f_{ij}) / (f_j^* - f_j^-)]$$

In which Sj is space from choice regarding ideal solution (best combination) and Rj is the space of negative ideal solution (worst combination). Best ranking is performed on the basis of Sj and the worst ranking is on the basis of Rj (Sarai and hosseini, 2014).

Table 6. Computing the space values with negative and positive ideal solution.

Index / locality	Access	Security	Participation	Participatory to locality	City management function	Hygiene	Transportation	Social conditions	Social communications	Mental and physical well-being	Housing condition
Pardis	0.0528	0.0697	0.0271	0	0	0.0863	0.0296	0.067	0.0668	0.1031	0.0326
Golshahr	0.109	0.113	0.048	0.075	0.04744	0.118	0.064	0.089	0.101	0.125	0.056
Sarab	0.0319	0.0252	0.0091	0.0448	0.102	0.0261	0.0203	0.0379	0.0381	0.0365	0.0123
Azadshahr	0	0	0	0.0278	0.06405	0	0	0	0	0	0
Jahedshahr	0.0858	0.107	0.0385	0.0593	0.03321	0.0966	0.0427	0.0775	0.0948	0.0995	0.0532

j. Computing value of Qi for localities and their ranking

The value of Qi for i=1, 2, 3… m on the basis of relation 6 is computed.

Relation 6

$$Q_i = v\left[\frac{S_i - S^*}{S^- - S^*}\right] + (1-v)\left[\frac{R_i - R^*}{R^- - R^*}\right]$$

(most pro-criterion) is the most group desirability also in this case, relation $\left[\frac{S_i - S^*}{S^- - S^*}\right]$ indicates ratio of space of i th choice from positive ideal solution and relation $\left[\frac{R_i - R^*}{R^- - R^*}\right]$ is space of i th choice from positive ideal solution. When the value of v is larger than 0.5 the index of Qi results in most desirability and when the value of v is smaller than 0.5 the index of Qi results in most negative attitude. In general when v is equal to 0.5, indicates same group agreement and usually the value of $v = 0.5$ is considered (Opricovic, 1998).

Table 7. Life quality condition in the studied localities.

locality	S	R	Q	Rank
Pardis	0.385369	0.103102	0.620	3
Golshahr	0.600442	0.125	1.000	5
Sarab	0.273204	0.102	0.506	2
Azadshahr	0.064047	0.064047	0.000	1
Jahedshahr	0.497495	0.099453	0.694	4

After computing the Q value for all of the localities, the studied localities are ranked on the basis of Q value and life quality. In this case, the greatest value of Q indicates worst condition of life quality and the least value of Q indicates the highest level of quality in the studied localities in city of Mashhad.

4. CONCLUSION

Nowadays true perception of people's needs and afterwards assessing development achievements are considered as starting point of society developments of humanities. Measuring life quality is a suitable tool for this perception as the study of life quality is a communication between authorities and citizens for constructive cooperation that results in interpretation of general issues affecting on people's life. Considering life quality issue especially in locality level as the smallest unit of society and city is communication of citizens causes stable development in improving social, natural, humanity and economic interest in all city levels. In this research we have covered measuring life quality conditions in Mashhad Metropolis. The results of the research indicated that localities of Azadshahr, Sarab, Pardis, Jahedshar and Golshahr have respectively the best and the worst conditions according to life quality indexes. The reasons are different levels of expectations of people, individuality, culture and family, job position head of families, the distribution method and process of services that have caused the contraction of sources in special localities and different access to services depending on income level. As the main purpose of city planning is well-being, welfare and beauty, so improving the life quality of urbanization as one of the development factors can play important role in pleasance of environment in citizen's view.

5. SUGGESTIONS

- For this case the following suggestions have been proposed for improving life quality in the studied localities:
- True and comprehensive planning for unanimous distributing of facilities in localities level.
- Enabling lower groups in planning and dedication of resources and welfare and social facilities by ministry of welfare and social security, Imam Khomeini aid committee and well-being organization.
- Rectifying factors causing disharmony in social, cultural, economic and serving contexts.
- Regarding high position of religion tourism in Mashhad, investment in this part can play a role in increasing the income, employment and life quality levels.
- Increasing facilities especially parks regarding climate conditions and lack of this applicability in the localities.
- Supporting citizens' participation in different areas for improving life quality and attaining good control of city
- Focusing on suburbs for decreasing poverty, inequality and discrimination.

REFERENCES

[1] Ahmadi, H., and Islam, A., (2009) Discussing social and economic factors relating life quality of people in Birjan, journal of humanities (Applied Sociology), No. 20, University of Isfahan Press, Iran.

[2] AliAkbari, E., and Amini, M., (2010) City life quality in Iran (1986-2006), Journal of Social welfare Quarterly, tenth year, No. 36, University of Social Welfare and Rehabilitation of Tehran, Iran.

[3] Brown, J. and bowling, And Flynn, T,(2004).Models of Quality Life: A taxonomy over view and systemic Re view of the Literatur.

[4] Epley, R,. Donald & Menon, Mohan,(2007). A Method of Assembling Cross-sectional Indicators into a Community Quality of Life, Social Indicators.

[5] Ghafari, G., and Omidi, R., (2009) Life quality index of social development, first publication, Shirazeh Press, Tehran, Iran.

[6] Kokabi, A., Pourjafar MR., and Pourtaghvaee, A., (2005) Life quality planning in city centers, definitions and indexes, urbanization research journal, No. 12, Tehran university press, Iran.

[7] Lee, Yung-Jaan, (2008). Subjective quality of life measurement in Taipei Original Research Article Building and Environment, Volume 43, Issue 7, July, Pages 1205-1215.

[8] Lotfi, S., (2009) Concept of urban life quality, its dimensions and measurement in city planning, journal of humanity geography, first year, No. 4, Tehran university press, Iran.

[9] McMahon,. S. K, (2002). The development of quality of life indicators a case study from the City of Bristol, UK, Original Research Article Ecological Indicators, Volume 2, Issues 1-2, Pages 177-185.

[10] Morais, Paulo,. Ana S. Camanho, (2011). Evaluation of performance of European cities with the aim to promote quality of life improvements Original Research Article Omega, Volume 39, Issue 4, Pages 398-409.

[11] Opricovic, S.,(1998). Multi-criteria optimization of civil engineering systems. Belgrade: Faculty of Civil Engineering.

[12] Rettig, Kathryn D. & Ronit D. Leichtentritt,(2005). A General Theory for Perceptual Indicators: of Family Life Quality, available.

[13] Rezvani MR., and Mansourian, H., (2008) Measuring life quality: discussing concepts, indexes, models and proposing model for rural areas, Journal of Village and Development, No. 3, press of planning research institute, agricultural economy, rural development and agricultural ministry, Iran.

[14] Rezvani, MR., Motakan, A., Mansourian, H., Satari, MH., (2009) Developmemnt and measuring life quality indexes (case study: Noorabad, Lorestan county), Journal of Urban Regional Studies and Research, first year, No. 2, University of Isfahan Press, Iran.

[15] Sarai, MH ., and Hosseini, SM., (2014) Modern techniques of multi-use decisions in urban planning and regional, Yazd university press, Iran.

[16] Souzanchi, K., (2004), Green land, social cooperation context, Municipalities Magazine, sixth year, No. 67, Municipalities press, Iran.

[17] Statistics center of Iran (2011) General capitation and city housing, www.amar.org.ir.

[18] Sufian, A.J.M, (1993). A Multivariate Analysis of the Determinants of Urban Quality of Life in the world's largest metropolitan areas. Urban Studies, 30(8):1319-1329.

[19] Ulengin, B. Ulengin, F. Guvenc, U,(2001). A multidimensional approach to urban quality of life: The case of Istanbul. European Journal of Operational Research, 130: 361-374.