Evaluation the Level of Development in Regions of Mashhad Municipality, Iran

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Abstract: In this research, Cluster Analysis Method (CAM) is used to evaluate level of development and classification of Mashhad municipality regions by five factors including education position, level of income, ownership, level of satisfaction from municipality and personal status, and ultimately achieve to a combined and united index. In this method, all indexes have been classified according to internal-regional differences and groups in which their internal-regional differences are less than their external-regional differences which have been classified in one group. Finally, above mentioned indexes have been clustered by using Dendrogram model of SPSS software, and its results had been reflected as maps and charts in paper. The results of this research show that different regions of Mashhad municipality have not been for similar level of indexes and chart represents that regions of Mashhad city had been divided to two clusters as beneficial cluster and unbeneficial cluster, and each cluster divided to several sub clusters.

Introduction and Issue Design

Development means to improve qualitative and quantitative level of life for all people of society, and it is a subject which was mentioned by planners and politicians from past periods and nowadays, it has been made as a known device in decision making and governmental policy making. One of the main and fundamental discussions in social and economical general programming system is balanced development issue which can be considered in form of balanced development of regions and different parts of society. Paying attention to homogeneous of regions as having facilities, capabilities and all welfare indexes are subjects which can affect resource allocation in way of achieving to qualitative and quantitative national macro programs, and organize policy making scale by the purpose of equalizing regions. This kind of homogeneity, first of all needs to identify features of different regions, becoming familiar with potential economical resources and kind and level of their privation as of having development indexes. By studying developed indexes in different regions and calculating regional differences can be act to solve the problem of duality and by optimum allocation of resources and credits between different regions, it can be come closer to development and social justice (Shahnoshi and et al, 2006:2).

Mashhad city is known as the biggest city in Khorasan Razavi province by 200 Square Kilometers width and 2.5 million populations and is one of the most important metropolitan cities of the country. This city is famous as one of the main tourism and pilgrimage cities of the country and moreover tourism and pilgrimage reasons, presently it become famous in cultural, scientific, political and economical dimensions, in the way that for different reasons, including presence of more than 12 million travelers and pilgrims each year and being in road of Asian highway, it recently have been benefited special commercial and economical facilities and also as administrative center of one of important Iran's customs locates in this city. However, a quick view to appearance of this city shows heterogeneity and gaps between different regions of city as level of development that according to the significant importance of this city, it is necessary to solve these differences.

There are different methods and models such as Scalogram analysis, Taksonomi, Factor analysis and Morris model in order to evaluate level of benefit and regional development that each one of them have good and bad features (Haghi, 1999:183) and the final purpose of choosing these factors is knowing present situation and to determine and analyze their distance to ideal situation and it would help urban management for optimum distribution of facilities and services. Regarding this description, this research try to determine level of development in Mashhad municipality regions, this affair will be much more beneficial for next uses and it also will help programmers. In order to determine present

situation of indexes, several indexes have been considered which are related to development of each region and then regions is classified by cluster analysis. This classification is a device which can represent necessary strategies in order to allocate human and financial resources. Present paper devotes to determine degree of development in these regions according to different indexes, with purpose of knowing differences between different regions of Mashhad city.

Research Background

Ali Mohammad Zahrabi and Reza Mokhtari MalekAbadi calculated development situation of having eleven regions of Esfahan city in a paper by this subject: "Analyze development indexes in having eleven regions of Esfahan city) and classified these regions by using eleven developmental indexes in scale of economical, fundamental, cultural, social and educational, health and cure indexes by using Spearman method and as a result determined priorities of regions for servicing (Zahrabi & Mokhtari, 2006:411).

Hossien Bahravan, in a plan by subject of «Cultural preparation and urban justice in twelve regions of Mashhad municipality», paid to how to fair distribution of cultural parameters in regions of Mashhad city according to factors of fair distribution including qualification, public beneficial and need. He used documental combined method and secondary analysis of measurement data and resulted that cultural facility distribution in regions is unbalanced in comparison with average level of city and there is more unbalanced regarding its role in present situation (Behravan, 2006:1). Naser Shahnooshi et al, paid to classify different regions of Mashhad city according to 40 indexes in different social-educational, family welfare, social welfare, fundamental groups by numerical Taksonomi method and main factor and they resulted that none of these regions don't have favorable level of development and between the regions themselves, in current situation, some regions have more distance with other regions which caused to duality between regions. Mir Najaf Moosavi paid to this matter in his M.A thesis in 2003 in Yazd University under the subject of «Evaluate degree of development in Iran regions by using economical, social and … indexes». Mohammad Reza Rezvani evaluated level of development in villages of this town by two methods of Taksonomi and Morris, under the subject of «Evaluate and Analyze level of development in rural areas of Sanandaj town» in geography and regional development magazine.

Importance and Necessity of Research

Results of present research can lead to represent suitable pattern for classification of internal parts of city, in order to suitable services and enhance position of Mashhad city as a matter of religious, cultural and enhance its importance around the country. This research also can represent a good pattern for urban managers in order to support better urban services in Mashhad and be a suitable guide for managers. Determining profiting regions according to different indexes which can be a good guide in make future politics in urban planning. The importance and worth of research is appearwhile it can take a suitable device to authorities in order to achieve a logical balance between different regions. On the other hand and as urban management point of view, city divided to special districts for imprint ability of each district that advantageous of classification are as followed:

-Urban development according to adjustment long term pattern
- Distribution of population urban disperse regarding to functions of urban regions
- Making relative calmness and mental health for inhabitants, because of their access to needed facilities

Goals of Research

Regarding this research, as a result of recognition and achieving to evaluate level of Mashhad city possession, the main goal of this research is studying differences and inequality between regions regarding position and level of possessing indexes such as education, income, ownership, satisfaction from municipality and occupational position and classification of municipality regions regarding level of possessing mentioned indexes.

Research Hypothesis

This research had been done to answer the following hypothesis:
It seems that distribution of facilities and services hadn't done equally between Mashhad municipality regions.

Research Method

During recent decades, using quantitative methods in urban and regional planning had been developed increasingly (Hossienzadeh Dalir, 2001:145). One of these methods is cluster analysis. This is one of the most applicable methods in regional geography studies. In fact, that's a method for scaling rural, urban and etc. As in this scaling places which is in one scale are very similar to each other (HekmatNia and Mosavi, 2006: 236). In other words, cluster analysis technique has been called as a method for decrease data, regarding the fact that observations in each cluster can be representation for average of other observations on that cluster (Shannon et al, 2003:41). In multidimensional evaluation programs, cluster evaluation can often use for effective primary classification of variables

(Toms et al, 2001:5) and also is used to describe diversity of methods and classification of indexes with similar features (Kennedy, 1974:216). There are different methods for making dense clusters in hierarchical cluster analysis method such as Single Linkage, Average Linkage, Complete Linkage, Wards method and Centroid Method; these methods are different from each other as point of calculating the distance between clusters. Choosing each one of these methods depends on statistical data and goal of programming (HekmatNia and Moosavi, 2006:237). Cluster analysis of a general subject is used for a hierarchy of mathematical methods which is used to find similarities between materials in a set. The goal of most of research activities understands the fact that which one of available materials in one class is similar or different; however, this method is the best classification method. In this method, the groups with more similarities classified as one group.

Based on abovementioned information and regarding to studied factors, analytical- descriptive approach is ruled on this research. Statistic data for 40 number of Mashhad municipality regions were available. Studied indexes include five main indexes, education situation, income statue, ownership, level of satisfaction from Mashhad municipality and occupational place. Necessary information has been gathered from Public Hose and People Census in 2006 and also environmental visits from studied regions, then cluster analytical model was used to classify Mashhad urban regions and then level of inequalities had studied.

Theoretical Basis

Development: development means gradual growth in order to be more powerful and more developed (Oxford Dictionary, 2000). Development is a qualitative concept which is located against growth and it can be known the same as increase quality of life. In development definition, Brookfield says: development should have been defined according to development towards welfare purposes such as decrease poverty, unemployment and inequality and generally speaking, moreover including amount of production and income, development is a process that includes fundamental changes in institutional, social, administrative structures and also public views of people. Scientists have different definitions from development: in development definition, Denis Goulet says: « in addition to economical and social goals, development must have cultural and political goals, development cover all social system changes, the changes that move society toward a humanistic statue other than current inappropriate situation». Paul Streeten also believes that the final goal of development must provided continuous improvement

in people's situation and give it's advantageous to everybody (Masoomi Eshkevari, 1997:42).

Most of famous and big intellectuals in world of economy such as Adam Smith, Bauer, Clark, Hirschman, Louis, Myrdal and Russo think of development as one meaning and that's fundamental evaluation from old society to new society (Taghvayee and Ahmadi, 2003:42). Basically, development is fundamental change in economical, social and cultural variables of every society and it'sfulfillment needs to make an arrangement between its different dimensions. Sustainable economical development is impossible without cultural, social and political development and cultural, social and political development can't do anything without scientific and logical view to economical development issue in long term. On the other hand, in order to arrange national and partial goals with regional facts, it is necessary to consider district and regional development in scale of partial and macro development politics, in order to compatible macro politics with economical, social and cultural capabilities of region (Amin Bidokht, 2006:17).

One of development basis is generality and its integration in avoiding social and economical unbalances in regions (Technique, 2003:2). Therefore justice distribution of facilities and advantageous of development are important features of healthy and dynamic economy among majority of population. In order to fulfill this matter, programmers attempt to decrease inequalities and unbalances by performing various anti privation programs and multidimensional development, positive aspects of development. The first step in this field is composing of efficient programs which are agreed on realities, achieving to superior goal of social justice and recognizing available condition. The main goal of development is multilateral growth and sublimity of human societies. So, knowing and understanding of condition and necessities of humanistic societies and different dimensions of their needs are as necessary actions in this field in order to achieve development and being placed on its way. What is obvious, is the fact that this necessity don't put into discussion equally and facilities and resources aren't equal everywhere (Rezvani, 2004:1).

Sustainability: the term sustainability has been referred vastly in order to describe the universe in which humanistic and natural systems can live continuously till far future (De Casteri, 2002:34). In this field according to the importance of sustainability, it can be mentioned to holding several international conferences during 1972 till 2002 which in all of them sustainable development was one of the main challenges for program directors. In fact sustainable development means multilateral

economical, social and environmental development; the goal of this kind of development is to find ways that help human beings to fulfill their needs without destroying environmental capacities in all dimensions (Badri and Eftekhari, 2000:11).

There aren't stable and determined indexes in order to evaluate sustainability, so current and future situation is unpredictable based on these indexes. In most cases, according to special indexes which had been used to evaluate sustainability in national and local level and also based on condition of each country and historical periods, By the end of 1990s, kind of convergence had been made for better recognition of dimensions of sustainable development and in sustainability studies simultaneously have been noticed to economical, social, political and environmental dimensions (Yag, 2004:36).

Sustainable Development: new concept of sustainable development has been rotted in thoughts of environmental moves. This concept has related to Ms "Barbara Ward" for the first time in 1970 (Barou, 1997:45). Before 1970s, Shomakher used sustainability in concept of economical structures and renewed resources and production and services (Shomakher, 1999:31). In United Nation's universal conference of environment and development (1987), in Harm Bratland's report with the subject of "Our Joint Future", sustainable development has described as a process which fulfill current needs without destroying abilities of future generation (Tosun, 2001:289). By formation of Earth Conference in Rio de Janeiro (in 1992), the topic of sustainable development had been challenged all over the world in which emphasized on community's partnership for improve and enhance environment situation and city sustainable development (Culling worth & Nadin, 2002:225).

In 1996, conference of ecosystems (Human's habitant) was held in Istanbul, Turkey, as fundamental steps had emphasized in field of social approach in urban management, enhance living condition for suburbanites, correct housing policy and paying attention to health and city environment (Pag, 2004:67). Sustainable development is a process which is improving economical, social, cultural and technological condition towards social justice and in order to don't pollute ecosystem and destroy natural resources (Maleki, 2003:37). In other words, it can be stated that concept of sustainable development means a development that don't be destructive environmentally, be appropriate in technical view, be durable in economical view and be acceptable in social view; as sustainable development in a country or environment can fulfill according to human resource of ecological potential, technology and financial resources which are owned to that environment or country and such a development only will be sustainable in mentioned environment (by arranging all four factors) (Darvish and Rahbar, 2005:21).

The most important factors of sustainable development include: 1- human beings (children and women), 2- environment, 3- culture, 4- learning, 5- science, 6- ethnic, 7- security, 8- cooperation, also its main basics include: 1- governments, 2- international organizations, 3- people (Nastaran, ZangiAbadi and Kholghi Pour, 2007:62).

Also, goals of sustainable development are not limited to time or place. Justice between generations and inter generations as social, geographical and governing society, maintaining natural environment in scale of its tolerable capability, use the minimum amount of renewable resources, diversity and economical durability, self dependent society, individual welfare and fulfill fundamental needs had stated as main features of these goals (MoosaKazemi, 1999:5).

Place of sustainable development in urban development: urban sustainable development is one of the most important axes in sustainable development. In order to study urban sustainable development, the basis criteria are evaluating available indexes in this field that generally show situation of society. In reality, indexes are useful information which is the representation of sustainable or unsustainable situation of urban residual system and state urban regions sustainability in order to complete foresight (Tabibian, 1999:58).

Sustainable urban development is a phenomenon with wide and complicated effects that is effective in growth and creation of cities and paying attention to economical, social and environmental and ecological factors. What is important today is becoming aware of weakness and weakness of social, economical, environmental and ecological development dimensions, that can be a very important factor in order to remove problems and issues to achieve economical welfare and social health and reach to sustainable development and finally obtain social justice. In this way, urban planning generally and cities sustainable development programming specially both are try to order urban space, for access to urban facilities and services and appropriate distribution of different urban uses. On the other hand, as a result of providing the best living condition and suitable relation between different uses for urban habitants; decline poverty and inequality and lining to basis of social justice and geographical equality is as fundamental actions of urban sustainable development (HekmatNia and Mosavi, 2006:35).

Urban sustainability has been mentioned more by city growth and growing constant concentration and economical activities in city centers, specially in less developed countries (Moosa Kazemi Mohammadi, 2001:96), because don't paying attention to cities sustainability will leads to increase available issues and matters in cities more than before such as inequality and poverty, decrease level of quality of life, house statue and physical development of cities, unemployment and mendacious employment and crime and depravity. Therefore, ignoring to sustainability in development process not only make negative effect on cities, but also will made negative effects in suburbs and small humanistic residuals (villages) which this matter make it necessary that noticing to sustainability of cities is depends on region development and regional optimum planning. Drakakis Smith suggests approaches and basis of sustainable development as a basis in studies of cities development in sustainable urbanization process, which noticing to equality and equality in economical growth, social justice and citizenship rights, access to services and fundamental needs and enhance awareness toward environment, will be an appropriate movement to more efficiency in using resources, environment and social justice, which in turn will impel cities toward sustainability (Drakakis- Smith, 2000:8-9).

Urban development, as a spatial concept which contains changes in land use and level of density, to fulfill city resident's needs for house, transportation, free time and food, will obtain sustainable development which it will be residential and livable environmentally, durable in economical viewpoint and sustainable and cohesive in social view during the time and citizens will have fair income, suitable house and healthy and convenient life (Shekoyee and Moosa Kazemi Mohammadi, 1999:125).

The principal of justice between generations, social justice (inter generation justice), intra borders responsibilities, mutual dependency of human and nature, kind life on earth and maintain diversity of ecology, effective cooperation of all people and groups in decision making who their life will be affected by these decisions, noticing to local culture and knowledge, sexual equality, peace and security and access to reliable information, all of these matters have been introduced as principles for sustainable development (Filho, 2000:10). So, analysis and evaluate some sustainable indexes in regions of Mashhad city's municipality could help urban managers in evaluating level of sustainable basis in providing citizen's fundamental needs, in scale of plan and constructive programs of structural, social and economical development.

Analysis and Evaluation of Findings

In this research, it has tried to study some characteristics of Mashhad municipality by considering different regions. Indeed, it needs to know features of different regions and their inequalities in order to future programming in this city, by this knowledge, it could have study reason for differences and start to plan for those regions which locate in lower levels. For this reason, we studied 40 regions of Mashhad municipality and used Clustering Analysis and SPSS software technique. This analytical method is used for classification of different regions. In fact in this method, regions which locate in one group have the most similarities with each other and less similarity with other regions out of that cluster. Necessary information for this research also had obtained by census in 17000 pcs questionnaires, results had been reflected in table 1.

As mentioned earlier, studied indexes in this research include:

1-Education status includes literacy, illiteracy, university education and diploma.

2- Ownership includes rent or possession.

3- Income statue includes over poverty line and below poverty line.

4- Satisfied from municipality

5- Occupational state includes income, job situation (clerk, governmental jobs, private sector, etc.).

One of fundamental issues in cluster analysis is evaluating similarity (closeness) or difference (distance) between people as having the studied adjective. Calculation approach depends on nature of adjectives and their qualitative and quantitative features and/or a combination of them. Now, because in this research, adjectives have different indexes, in order to calculate the distance between data (in order to determine farness and/or their similarity) it must use standard data. There are different methods for standardized. The most common approach for making data standard is statistical standard approach by using following formula:

$$X^*ij = \frac{Xij - \overline{X}oj}{Sj}$$

In which Xij and X^*ij are respectively jth region and ith region in primary phase and made standard and $\overline{X}oj$ and Sj are respectively average and standard deviation of jth adjective. After making the data standard, substitute them with real data and then calculate range, maximum, minimum, total sum, average, standard deviation and variance of the data to continue the work.

Table (1): Descriptive Data of Studied Indexes in Mashhad City Regions

	Number of Regions	Domain	Minimum	Maximum	Total Sum	Average	Standard Deviation	Variance
				Descriptive Statistic				
Literacy	40	23.40	75.30	98.70	3666.10	91.6525	6.03456	36.416
Illiteracy	40	23.40	1.30	24.70	333.90	8.3475	6.03456	36.416
Academic	40	42.80	2.30	45.10	738.90	18.4725	12.53708	157.178
Diploma	40	26.40	10.40	36.80	923.40	23.0850	7.06147	49.864
Proprietary	40	39.20	41.10	80.30	2577.80	64.4450	7.64031	58.374
Rental	40	25.70	19.20	44.90	1126.10	28.1525	5.48494	30.085
Over Poverty	40	12.20	3.10	15.30	340.70	8.5175	2.89145	8.360
Below Poverty	40	68.40	9.70	78.10	1655.00	41.3750	18.57203	344.920
Satisfaction by Municipality	40	40.36	27.70	68.06	1931.36	48.2840	7.33284	53.771
Occupational Situation	40	11.30	51.85	63.15	2278.84	56.9710	2.65584	7.054
Income	40	148074.75	55458.59	203533.34	4648472.92	116211.8231	36393.73756	1.325E9
Reliable Data	40							

Source: writers

As mentioned earlier, cluster analysis has been done by different methods. Hierarchical Techniques are one of them and is done when number of clusters doesn't be clear before. This method itself divided to two groups includes Agglomerative group and Divisive group that in this research, Agglomerative method have been used.

This method has different types which are different from each other. Here, Average Linkage between Groups is used. In this method, at first each region itself forms a cluster which here we have 40 clusters. In next steps similar clusters have been integrated with each other step by step and form a big cluster, as in last step all regions locate in one cluster. The criteria which is used for cluster integration is the average of two by two distance between regions of one cluster with regions in other cluster. If two clusters come close to each other, they will integrate in next step.

In order to represent clusters, Dendrogram had shaped to show steps of forming a new cluster (diagram number 1). After drawing Dendrogram diagram its turn to analyze results of diagram. One cluster must have been chose to do necessary investigations. It is clear that the precision of analysis decreases while increasing each step of Dendrogram diagram and if number of clusters is low, the conclusion which was done accordingly won't be accurate. Moreover, if number of clusters is high, it can be done in one of following ways:

1- The favorable number of clusters in Dendrogram diagram is a place where it has been observed large distance between integration of two clusters.

2- $\sqrt{\dfrac{N}{2}}$ Number has been considered as favorable number of clusters that N is number of units.

So if consider the first step here, two clusters is favorable number of clusters that these two clusters include following regions:

$$A_1 = (21, 37, 2, 24, 6, 38, 17, 3, 16, 26, 1, 8, 39, 40, 34, 35, 33, 5, 29, 32, 31, 10, 30)$$

$$A_2 = (7, 9, 22, 36, 20, 13, 4, 12, 25, 27, 11, 23, 15, 28, 18, 19, 14)$$

That A_1 is as first cluster and A_2 is used as second cluster; this clustering had been done in fourteenth step. But by considering second method, four clusters $\left(\sqrt{\dfrac{40}{2}} = 4.47 \cong 4\right)$ have achieved, that these clusters containing regions are as following:

$$A_1 = (21, 37, 2, 24, 6, 38, 17, 3, 16, 26, 1, 8, 39, 40, 34, 35, 33, 5, 29, 32, 31, 10)$$
$$A_2 = (30)$$
$$A_3 = (7, 9, 22, 36, 20, 13, 4, 12, 25, 27, 11, 23)$$
$$A_4 = (15, 28, 18, 19, 14)$$

That A_1 had been considered as first cluster and A_2 as second cluster and A_3 as third cluster and A_4 as fourth cluster, which this clustering had been done in fourth step. It should mention that in this analysis, the criteria for clustering are evaluating main variables such as education statue, income statue, ownership, satisfaction from municipality and occupational position. Based on these variables, internal regions of each cluster have the most similarities with each other. As a result, similar policies can be used for them.

Diagram number 1: Clustering classification of Mashhad municipality regions according to studied indexes
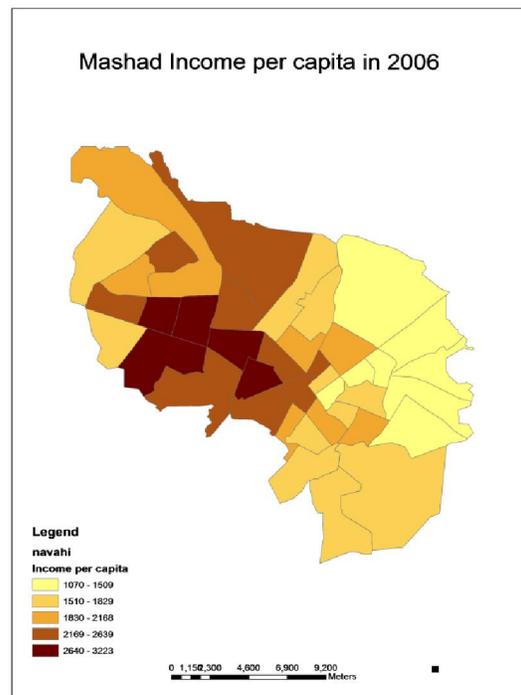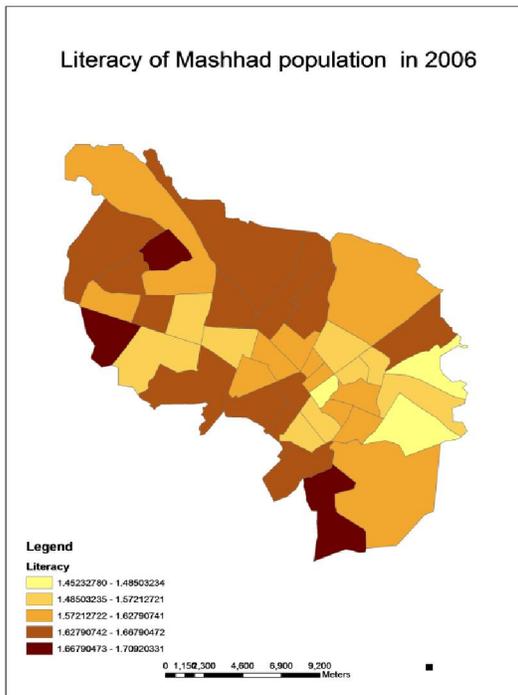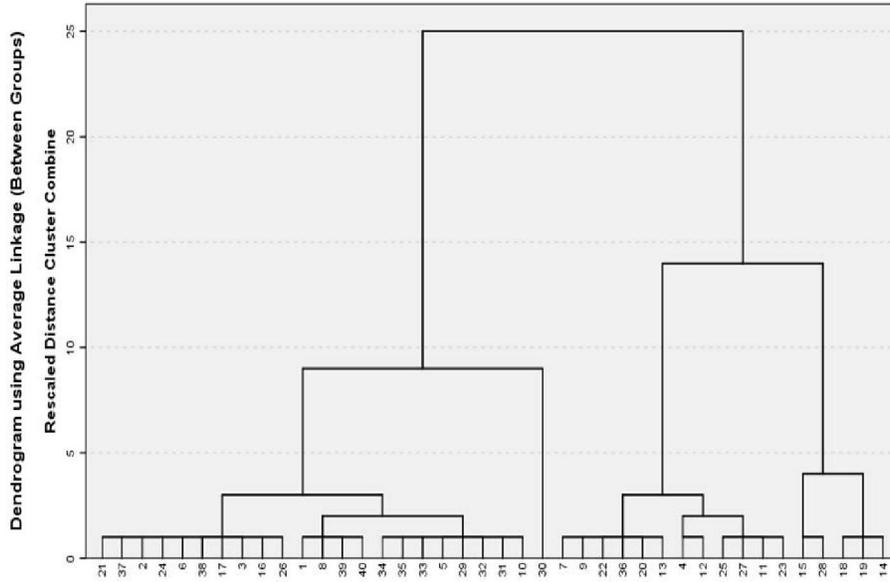
Map 1: The map of clustering regions of Mashhad city according to level of education
Map 2: The map of clustering regions of Mashhad city according to level of income

Conclusion:

In this research, in order to evaluate level of development and classification of regions in Mashhad city according to five indexes as education statue, level of income, ownership, satisfaction by municipality and occupational position and achieving to a united and combined index by using Cluster method, that in this method. Indexes have classified according to inter region differences and groups that their inter region differences are less than external regional differences have placed in one group. Ultimately, by using Cluster (Option) in SPSS software, above mentioned indexes has clustered by using Dendogram, the result has been determined as diagram and map. The results achieved from the diagram that is represented division of Mashhad city regions is mainly as two clusters that each one of clusters divided to several sub clusters, that this matter shows the fact that different regions of Mashhad city aren't the same as each other as having above mentioned indexes that this matter confirm research hypothesis.

Suggestions:

1- While population dispersion over Mashhad city is unbalanced, so planners and authorities of regional municipalities must pay attention to fund and urban programming.

2- Use of tariff mechanisms for devoting optimum facilities to city (by encouragement and exemption), it can bring us closer to decrease regional differences.

3- It is necessary that programming had done according to capacities and potentials and limits of each region (according to capacity of population in each region, studying structure of age of habitants, their income and occupation and etc.).

4- It is necessary to spend part of income in rich regions for poor regions, so the city naturally revised and it will correct unbalances internally.

5- According to see the necessity of spending part of incomes in rich regions in more poor regions and practically they try to do it (fund for deprivation) it is necessary to define more appropriate criteria for it.

6- The municipality must attempt to remove inequalities in some indexes.

7- Policy and decision making must have done according to studies and knowledge of level of region development.

8- Using tariff mechanisms for devoting optimum facilities in city (by exemptions and encouragement) can bring us closer to decrease differences between regions.

References:

1. Amin Bidokht, Ali Akbar, (2006), Evaluate level of development in Semnan province towns, Educational magazine of geography growth, ministry of Education.

2. HekmatNia, Hassan, Moosavi, Mir Najaf, (2006), Evaluate urban sustainable development indexes in regions of Yazd city, The first geography and 21th century conference, Azad Islamic university, Najaf Abad unit.

3. Darvish, Mohammad, Rahbar, Esmaeel, (2005), Training Desert and Desertification research, Forest and Grassland magazine, No 42.

4. De Casteri, Franchesca, (2002), Sustainable development Chair, translated by Mohsen Hakimi, Nature and Resource magazine, Third year, No 1.

5. Rezvani, Mohammad Reza, (2004), Evaluate and analyze level of development in rural regions in Sanandaj town, geography and regional development magazine, Ferdowsi university of Mashhad, third number.

6. Shahnooshi, Naser, Golriz Ziayee, Zahra and Hamid Reza Bagheri, (2006), determining level of development of Mashhad city regions, Proceedings of the first urban management and planning conference, Mashhad.

7. Shokoyee, Hossien, Moosa Kazemi Mohammadi, Seyed Mahdi, (1999), urban sustainable development economical social factors, Quam Case Study, The first sustainable development conference in urban regions, Tabriz university.

8. Shomakher, A.F, (1999), Small is beautiful, economy with humanistic dimensions, translated by Ali Ramin, Soroosh press (Media), Tehran.

9 Tabibian, Manochehr, Bahreiny, Seyed Hossien, (1998), the model of analyzing quality of urban environment, Ecology Quarterly, 24 period, No 21.

10. Zahrabi, Ali Mohammad, Mokhtari Malek Abadi, Reza, (2006), Analyze indexes of development in eleventhly regions of Esfahan city, Proceedings of the first urban management and planning conference, Ferdowsi university of Mashad19.

11. Fani, Zohre, (2003), Small cities, another approach to regional development, Publication of Organization of municipalities around the country, Tehran.

12. Barou, C.G, (1997), Sustainable Development, The concept of worth and action, Translated by Seyed Ali Badri, Geographical Research Quarterly, No 44, Mashhad.

13. Masoomi Eshkevari, Seyed Hassan, (1997), Principles and methods of regional planning, Someh Sara press, Second edition.

14. Maleki, Saeed, (2003), Sustainable city and urban sustainable development, Revolution and House quarterly, No 102.
15. Moosa Kazemi Mohammadi, Seyed Mahdi, (1999), analyzing urban sustainable development, Guam case study, Tarbiat Modares University, Tehran.
16. Moosa, Kazemi, Mohammadi, Seyed Mahdi, (2001), Urban sustainable development: Concepts and views, Geographical research quarterly, No 62, Mashhad.
17. Nastaran, Mahin and Ali ZangiAbadi, (2007), Sustainable development, Social, economical, scientific, cultural, work and society monthly magazine, Institute of work and social support.
18. Yag, Sedrick, (2004), Sustainable cities in developing countries, translated by Naser Moharamnejad and Neshat Hadad Tehrani, Center of architecture and urbanization study and research publication, Tehran.
19. Cullingworth, Barry of Vincent, (2002), Nadin, Town and Country Planning in the UK،Routledge, London.
20. Drakakis، Smith، David, (2000), Third world Cities، Second Edition, Routledge, London.
21. Filho, W.L، Dealing with Misconception on the concept of sustainability، International journal of sustainability in Higher Education.
22. Kennedy, J.1974. Review of Some Cluster Analysis Methods, AIIE Transactions, and volume 6, No. 3.
23. Badri Seyed Ali, Rokn Al Diin Eftekhari, Abdo Reza, (2003), Evaluation of Sustainability: concept and method, Geographical research, 2,69, 34-9.
24. Shannon, W. Culverhouse, R. and J, Duncan. 2003, analyzing micro array data using cluster analysis, Ashley Publications Ltd. 4.41-54
25. Toms, M., Mark, A, Cummings, H and G David .2001. Using Cluster Analysis for Deriving Menu Structures for Automotive Mobile Multimedia Applications, SAE 2001 World Congress Detroit, Michigan March, 5-18.
26. Tosun،Cevat, (2001), Challenges of Sustainable Tourism Development in Developing world: The ease of Turkey، Journal of Tourist Management.
27. Bell, Simon and Mourse Stephan, (2007), Sustainability Evaluation, translated by Siavash Dahanian, Naser Shahnooshi and Yadolah Azarin Far, Ferdowsi university of Mashhad publication.
28. Behravan, Hossien, (2006), Cultural Preparation and urban justice in Mashhad municipality twelfth regions, set of papers of the first conference of urban planning and management, Ferdowsi university of Mashhad.
29. Taghvayee, Masood, Ahmadi, Abdol Hossien (2003), Determining and analyzing level of fruition in rural regions of towns and districts of Kerman Shah province, Quarterly of village and development from Jahad publication.
30. Hossien Zadeh Dalir, Karim, (2001), regional planning, Samt publication, First edition.
31. Haghi, Mohammad Ali, (1999), Structures Planning (Proceedings), Architecture and urbanism research and study center, Tehran.
32. Hekmat Nia, Hassan, Moosavi, Mir Najaf, (2006), Use of model in geography with emphasis on regional and urban planning, Elm Novin publication, First edition.

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