ABSTRACTS

Comparative Study of Accuracy rate of Fuzzy AHP and Classical AHP Methods for Ranking Indicators Affecting on the Quality of Life
Case study: Mahban Village, Township Nikshahr Township

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Quality of life is of the important issues considered by most experts of planning and development of human settlements. This topic, in less developed countries is faced with great challenges and Several factors influence on it in various dimensions. The most important indicators effective on quality of life in these countries, especially in rural parts of deprived areas, mostly is about the basic needs of life, which are assessed by different methods including AHP and FAHP. In this study, after collecting the data through questionnaires, the two said methods have been used as comparative.

Because of differences in the obtained results, the accuracy rate was reviewed again by Mean Squared Error(MSE) and the following results were obtained:

Firstly, in both methods the "income and employment," has the highest and "participation" has the least importance and and impact on people's quality of life.

Secondly, there is a great difference between the classical hierarchical analysis method (AHP) and Fuzzy Analytical Hierarchy (FAHP) in evaluation and determine the degree of importance.

Thirdly, in consistent with available facts, fuzzy methods compared with classical methods has more accuracy and this difference was approved by the mean squared error (MSE).

Keywords: Rankings, Quality of life indicators, Rural areas, AHP fuzzy, AHP classic, Mahban sub-district.

Application of TOPSIS Model in Analysis Process of Environmental Capabilities for Urban Development
Case study : Ardabil Township

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The increasing trend of urbanization and consequently the rapid growing of the physical space of the cities is considered as one of the significant features of the human today's life. On this basis, using proper and efficient strategies in leading the physical development of the cities in suitable beds can be considered as an inevitable factor in the process of urban planning. One of these strategies is implementing efficient techniques in prioritizing lands suitability for development of urban constructions.

In the present study, by selecting the cities of Ardabil, Nir, Namin and Sarein as the case study, it is tried to test a combination of GIS and TOPSIS model capabilities in an experimental context of the study subject and the resulting outputs be presented in the form of a classified drawing of lands suitability for urban development.

To this end, forming evaluation criteria, standardization of criteria drawings for the membership degree in fuzzy function, determining the criteria weight by CRITIC method and preparing weighted standardized maps were the measures be taken that in consequence of their performance, the required arrangements were provided for functional use of TOPSIS model in GIS environment. Review of the results obtained from using model in the study area, showed that the introduced prioritized pixels in the output of model have optimum conditions from the view point of defined criteria. Therefore, this model can be used as a decide supporting system (DSS) in the process of choosing proper beds for the city physical development.

Keywords: Urban development‹City dwelling ‹multi-criteria analysis, TOPSIS model, Ardabil

Classification of factors affecting on economic indicators of International tourism

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Tourism industry, as an economic sector is growing rapidly. There is an intense competition among tourist destinations to attract more tourists. This article aims at finding the most important factors for attracting foreign tourists. The society under investigation consisted of The OECD member countries and the Group of 77. In total, 32 countries from among OECD countries and 73 countries from among G77 countries were selected and a case of 105 countries was obtained. The study period was considered equal to 14 years from 1995 to 2008 AD. After forming matrix of data, the analysis was done using variables correlations and Minitab statistical software. Also, this software was used to Principal Component Analysis (PCA) in world tourism industry. The results showed that in addition to the country's infrastructure facilities, the natural and historical – religious potentials are the most important factors in attracting foreign tourists. The country's political and economical conditions rank the next factors. Moreover based on data of two groups, the results of PCA categorized the tourism indicators in two kinds of indicators. This categorization indicated that OECD countries own the biggest part of world tourism benefits. On the other hand, G77 countries have the most growth in tourism indicators in 14 years.

Keywords: Tourism; International Tourism; Economic Indicators of Tourism; Factors affecting Tourism, JEL classification: L83.

Feasibility Study of Intervention Urban Inefficient and Old Texture Using Analytic Network Process-Case study: Qom city (district No. 6)

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During recent decades, the issue of regeneration of urban inefficient and old textures has become one of key issues in the field of urban development strategies. For this purpose, the managers and urban policy makers have used different measures including increase of building density, improvement and modernization of old textures, mass construction, etc. some of these policies are practiced in the form of direct interventions by urban management system in order to provide public services and facilities and or improvement of old tissues. Unfortunately, lack of considering the effective social, economic and physical parameters in an effective manner concerning the capacity of urban tissues for intervention from the practitioners and authorities of urban development affairs has led to emergence of some problems during execution of civil projects such as delay in execution time of projects, high costs and or social dissatisfactions.

On this basis, the present study, tries to determine the intervention of the old and inefficient tissues of Qom city with the help of three main indicators: physical, economic and social indices to perform the measures more effectively. Of course, if all these criteria are followed together with their sub-criteria, so that some complications would emerge in decision making process.

Therefore, in order to facilitate decision making process, we used analytic network process (ANP) for achieving the objectives of present study. Our findings revealed that out of 76 ha area of District 6 Qom City, 20.3 percent has low intervention-capability and 41.8 percent have medium intervention-capability. While 37.9 percent of this district area has high intervention-capability, which could be contributed to the existence of the vast arid lands within the texture.

Keywords: Urban inefficient texture, Analytic network process, GIS, Zone 6 Qom city.

Assessment of Safety Factor of Physical Indicators of Karaj City

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Today, considering the increasing trend of urbanization and progressive growth of the city and citizens' hazards regarding the environmental and technological risks and social challenges, the necessity of regarding safety issues as one of the important and determinant factors of a sustainable city is sensed more than before.

Karaj, the young metropolis that less than 50 years is passed from its new life, is of the cities that with respect to its rapid changes and evolution from scattered rural settlements with 14'226 population in 1335 to the current metropolis with population of 1'386'030, has made inevitable the safety management of hazardous phenomenon.

To obtain the perspective of Karaj safety plan and decreasing the undesirable effects of crisis and events, recognizing and evaluation of physical safety of the city and spatial modeling of these components in 34 regions are the aims of this research. Establishment of descriptive data bank, Combining it with spatial data and finally its spatial modeling in the form of GIS Cellular Network and AHP are the considered methodology in this study.

The research findings showed that among the tenth physical safety indicators, impermeability with weighting value of 0.79 out of 1 has the highest rank, district No.1 with physical safety coefficient of 0.50 of 1 is the most unsafe district and district No.20 with safety coefficient of 0.73 has been recognized as the safest region.

Keywords: Physical safety, GIS cellular network, Safe city, Karaj.

Review the Potential and Capabilities of Citizens' Participation in Urban Affairs
Case study: Fasa township

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From the second half of the twentieth century, partnership concept with a new approach has been changed to a key issue in developmental programs, especially in urban developmental programs.

To strengthen and develop the participation of people in planning, recognition of the effective factors is essential. Participation in our country is not a new phenomenon, but due to urbanization growth, the need to revise the concept and presenting an appropriate model based on the needs of citizens seems necessary.

Fasa, with 92,020 population in 2006 is one of the most populated cities of Fars province.

The problems that the management of Fasa is confronted with regarding the lack of active participation of citizens can be referred as the lack of cooperation of citizens for payment of their municipality duties and lack of citizens' awareness about their urban rights and duties .

The main objective of the present study is to review the participation potentials and capabilities of Fasa citizens in municipal affairs.

In this research, which is of applied and development type, for answering the questions and presenting appropriate solution for the considered issue, analytical –descriptive method has been used. For collecting data, two different methods of documentary and surveying have been used.

In this research, firstly the relevant literature was studied. After recognizing different theories and patterns, in practical realization of partnership , two required and necessary prerequisites were diagnosed :1) tendency and willingness to participation and 2) possibility of partnership, consequently, this paper focused on the level of tendency and willingness for participation(potential of citizens' participation).

Then for recognizing and identifying the necessary variables which show the potential of citizens' participation in urban affairs, eight (8) main variables were recognized, and in total , 34 questions were indicated to measure these 8 variables.

Accordingly, the evaluation questionnaire of citizen participation variables of Fasa was developed, executed and analyzed.

The results of this study show that Fasa citizens has a partnership potential of moderate to upward and among the indices which show the citizens partnership, only in the indices of leisure time, social reliance and self imagination have a moderate rank and in the remaining ones have obtained more than average.

Keywords: Participation, Urban Affairs, The potential of citizen participation, Fasa.

Monitoring of Surface Water Resources Availability in the Atrak River Using the Modified SWSI Index and Markov Chain Model

Case study: Atrak basin

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Drought is a complex natural phenomenon, which is due to the precipitation shortage and is one of the climatic challenging phenomena which has great and extensive impacts on human societies, environment and the world economy. During the recent years, various indices have been developed to detect and monitor drought. In the present paper, is to evaluate the drought phenomenon in Atrak River by using modified SWSI index.

Also, a first-order Markov chain model was used to simulate modified SWSI indexes, based on the estimated transitional probabilities and frequency distributions of river's flow in the relevant stations. The results of this paper indicated that transition probability from a specified status to the same one is more probable than transition to other status (between 60 - 80 percent) and each of the stations, probably most of the time are at balanced status.

On the other hand, although some stations are more durable in drought conditions, but at the same rate, they spend in a very wet conditions for a short time, that more than before, reveals the importance of programming in operation parts.

Keywords: Hydrological drought, Markov chain-based model, Modified SWSI index, Atrak river.

Investigation of Flooding Hydrological Behavior in Razavar Watershed Using Statistical Analysis, SCS Model and Profile of the River

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Razavar watershed on the north of Kermanshah province is one of the flooding basins that causes flooding in watery years. For investigating watershed flooding, the statistical analysis of real data of the area, SCS model and surveying river cross section have been used. by dividing watershed to hydrologic homogeneous units and study , the factors influencing on flood such as vegetation cover, land use, time of concentration, lag time , slop ,geology ,pedology ,rainfall intensity were studied .finally CN and S map are provided and runoff height and peak discharge has been estimated by using SCS in smada software.

The important factor in this software is the coefficient of flood recession curve. This coefficient indicates the hydrological behavior and morphological condition of the river at flood time. To obtain this coefficient, the flood hydrograph of pirmazd station has been plotted and interpreted. Analysis of the real flood hydrograph shows that the recession time of flood in Razavar watershed is 5 times of flood rising, and this represent the hydrological behavior of river which cant discharge the flood from the basin at the flood time.

To identify the river hydrological status, surveying river profile was performed. The results showed that expect the river profile at pirmazd station, no other sections is able to pass peak discharge with 5years of return periods and even the river profile at Mehregan station cannot discharge flood of 2years return period and the cause of basin flooding is the narrow channel from upstream toward downstream which causes flood every year.

Keywords: Homogeneous units, SCS model, Static analysis, Smada soft ware, Survey river cross section.

Vulnerability Assessment of the City Buildings by Fuzzy AHP Model

and use of GIS System

Case study: District No. 3 of Tehran

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In order to reduce the vulnerability of Tehran, before any planning and decision-making, it is necessary that the earthquake damages based on its different conditions and Status shall be analyzed before its occurrence to obtain a clear vision of probable earth quake happening and its resulting consequences and on the basis of simulating probable earth quake in different intensities, the vulnerability maps is prepared. The current study tries to design earth quake scenarios with different intensities by Fuzzy AHP model and GIS software to present a proper estimation of vulnerability of Tehran municipality district No.3 against earthquake.

This study is of applicable type and descriptive – analytical. Applied data is of documentary and field type.

The results of the study indicate that the amount of incurred damages to the buildings of district No.3 are are divided into five levels of "very low, low, medium, high and complete destruction; in designed scenarios of is Scenarios designed 6 Mrkaly 53/88,26/77,19/04,0/04,0/25; respectively in 7 Mrkaly 23/28, 21/22, 9/31, 26/42, 19/75; 8 Mrkaly 0/54, 59/33, 20/22, 9/55, 46/97, respectively.

The highest level of vulnerability Based on the number of damaged buildings are at municipality districts of 2, 3, 5, 4, 1 and 6 respectively which is due to the use of undurable and weak materials construction works, existence of worn textures and high age of the existing structures, structures located on qanats , the population centralization in old and high density textures and tower construction without performing studies regarding comprehensive plans, and also lack of following the common standards in the country including by law 2800.

Keywords: Vulnerability, Buildings, Earthquake, Tehran, GIS, Fuzzy AHP.

Prioritizing Suitable Locations to Domestic Waste Disposal Considering Geomorphic Criteria

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Increasing growth of population of the cities and metropolitan cities, while creating suitable opportunities for physical, economical and social development and increase of welfare level, has caused different incompetency in metropolitans. Increase of home waste materials is of the environmental challenges in most of metropolitans and selecting the appropriate areas of municipal solid waste landfill in mega cities is one of the environmental challenges of urban management, especially in metropolitan cities. Mashhad, with over three million populations is the second mega city in Iran, the second religious city in the world and spiritual capital of Iran. This metropolitan city is faced with a huge and great amount of producing home waste material .Identification of prone regions to the solid waste landfill is among the important issues of waste management in this metropolis. The purpose of this research was selecting and prioritizing areas for solid wastes disposal considering the Geomorphologic factors in Mashad. So using ranking MCDM methods including TOPSIS and AHP, five landfill sites for the city of Mashhad, was investigated and selected. Ranking has been done based on seven geomorphologic criteria involving slope, lithology, fault distance, surface water distance, ground water depth, and land use and geomorphology type. Using TOPSIS algorithm, weighting and ranking the regions was completed. To compare indices and criteria, AHP algorithm has been applied and pair wise of criteria was done. The results of the studies showed that the region 2 (the new landfill, located in Miami Road) has first rank to waste disposal. The results also indicated that the region 1 (located in Nishabour road) which is the old landfill of Mashhad is not a suitable place for waste disposal.

Keywords: Domestic waste, Geomorphic Criteria, AHP, TOPSIS, Mashhad.

A Study of Anomalies and Trends of Sunshine Hours in Iran

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Sunshine hours rate with its effect on determination of solar radiation rate is the main factor of controlling life, climate and other biological activities on the earth, especially in arid and semiarid zones. The purpose of this research is to offer an image about anomalies and trends of sunshine hours rate in Iran, and to estimate its values based on the latest data. For this purpose, the country area was zoned for annual and seasonal sunshine hours by using 87 synoptic stations data in a 20-years period (1986 to 2005) via cluster analysis and ArcGIS software capabilities. For confirming the zonation, Sidak and One-Way ANOVA parametric tests or Mann-Whitney and Kruskal-Wallis non-parametric tests were used. In addition, multivariate and simple linear regression equations were used for estimating sunshine hour's numbers and recognizing their temporal trends respectively.

The results of the research showed that the mean sunshine hours increase and their variability decrease from the north to the south and from the west to the east of country until the coefficient of variation (CV) values of annual sunshine hours, contrary to the spatial distribution of them reach to the highest rates in the Caspian sea coasts and the lowest ones in the central deserts. Sunshine hours rates show either significant increasing trends or essentially non-significant trends in the whole country. However, even one case of significant decreasing trend has not been observed in the country. The mean increasing amount of trends in the country is 16.6 hours per year. Statistical model shows that except in the summer, the rule of the latitude in spatial distribution of sunshine hours is salient. By using this model, sunshine hour's values in the country were estimated with good precision based upon latitude and elevation values.

Keywords: Sunshine hours, Iran, Trend analysis, Zoning, Variability, Estimation.

Investigating Rual Management Challenges by Using Qualitative Approach of Grounded Theory

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Based on the available statistics, Kermanshah province is placed at the second rank in terms of the number of village assistant bureaus after Khorasan Razavi province. However, no study has been conducted about the problems and limitations of this foundation after 8 years of establishing this new management foundation in villages of the province. The purpose of this qualitative study, which is performed by using grounded theory method, was to identify the challenges and problems which village assistants are faced with in Bala-Darband County in Kermanshah city from the view point of villagers and in a form of a model. The case study was the village assistants of Bala-Darband County in Kermanshah province which 12 villagers were studied as the purposive sampling.

The research data were collected by using semi-structured interview and in the form of three coding stage i.e. open coding; axial coding and selective coding, were analyzed and classified in the form of seven main problems.

Results revealed that the under studied village assistants, according to their importance, are faced with some challenges including: lack of awareness of public and local organizations from village assistants duties, negative attitudes towards dehyar, lack of cooperation and support of local and governmental organizations, development of top-down programs by executive organizations, lack of participation by local people, weakness of legitimacy of dehyar and lack of equipment and financial resources. The results of this study will assist the planners of rural development in overcoming the above mentioned challenges and realization of efficient rural management in the area.

Keywords: Rural management, Village assistant bureau, Challenge, Qualitative approach, Grounded theory.