Application of Fuzzy Inference System in Measurement of Human Development Case Study: Parsabad City

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Abstract

This study aims to evaluate the human development in the city of Pars Abad (including Pars Abad, Aslan Dooz, Islam Abad and Taze kand) based on some human development indicators, to identify the rate and the causes of inequalities in this city, to introduce possible solutions for facilitating planning, and ultimately, to reduce human non-development rate in the region. It is an applied - developmental research using descriptive- analytical method. It also uses the Fuzzy Inference System (FIS) model in MATLAB. In this research, 40 reduced indicators are divided into two factors, social development (including employment, health, and social services), and cultural development (including education, cultural factors and social deviations) in a specified period, 2011. The analysis of all research stages, in particular, defining indices, selecting relevant membership functions, forming a database, establishing rules and ultimately getting output from the date was done in MATLAB. After analysis of the data by this model, the obtained results showed that FIS model, relying on knowledge base and its corresponding stepwise conclusions, is a good model for describing the details of the primary and secondary indicators as well as human development. Likewise, it showed that among the towns of this city, there are significant differences in terms of its human development indicators, whether in the city or in relation with other towns. Except the capital city of Pars Abad with a final weight of 0.507, which is located in the semi- deprived category, other towns of this city are considered in deprived areas.

Keywords: human development, FIS, Pars Abad city, MATLAB

The Effect of Thermal Comfort limit on Architectural Design of Sistan Region

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Abstract

Thermal comfort depends on physiological characteristics of human being and, at the same time, is affected by climatic factors such as temperature, relative humidity, air flow, etc. Therefore in determining the scope of issues related to human thermal comfort, the influence of combination of climate factors on human thermal comfort is examined. On the other hand, energy consumption in buildings is directly related to temperatures which are defined as the low and the high levels of comfort range, and accordingly in the process of development and in concordance with the environment, it is necessary to evaluate thermal comfort locally so we will be able to reduce energy consumption in cooling and heating buildings. Studies show that there are few studies that determine the optimal condition of comfort regarding temperature and humidity. This is more critical in micro-climates like Sistan due to the great distance from the capital and the absence of sufficient facilities. With the help of analysis of the current data, this research tries to reach and define the optimal indoor temperature for the hot and dry climate of the area. According to the results of this research, in addition to calculation of the scope of the low and the high levels of comfort range in Sistan, it is found out in what time of the year there is lack of comfort and how the designing strategies should be. The method of the research is based on registering general and specific climate information of the area in the software, modifying the data and their analysis. The results show that in Sistan the temperate months (in which indoor temperature is in comfort range) are only three months and in the other nine months of a year, there is a need for cooling and heating. In this situation by using architectural guidelines and arrangements , the architect should try to minimize the amount of energy which is used in buildings for cooling and heating purposes .

Keywords: climate of Sistan, designing in concordance with hot, dry climate, thermal comfort range, adjusting the environment, sustainable development.

Analysis the Status of Oshnaviyeh City Based on City Development Strategy Indicators(CDS)

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Abstract

The main objective of this study was to evaluate the status of the city development strategy Indicators (Good governance, Bankability, Livability, Competitiveness) in Oshnaviyeh city from the view of three groups (Officials, Citizen, Urban Elites) which have been proposed by the World Bank and the Cities Alliance Organization. The used research method is descriptive_ analytical one . In this regard, 355 questionnaires between urban citizens, 50 questionnaires between the urban elites and 50 questionnaires between the officials and experts from bureaus and organizations in Oshnaviyeh city have been completed. For data analysis, the SPSS software and MANOVA multivariate variance analysis test were used. Results show that; the total mean of CDS indices in Oshnaviyeh city from the viewpoint of officials is equal to 2.80, and from the view of both citizen groups and urban elites is equal to 2.46.From the view point of the three groups, the mean of all CDS indices in Oshnaviyeh city is less than the theoretical mean of questionnaires which is (3). I total, the mean of the views of the two groups of Urban elites and citizens comparing with the status of CDS indices in Oshnaviyeh city are very close to each other and have described the city status from the view point of indices as inappropriate.But the mean of the officials' views in comparing with the two others is different and from the view of the officials, the indices mean is very close to the average limit. The results of MANOVA test also shows there exists significant difference between the opinions of various urban groups in terms of CDS indices . Only no difference can be observed between the Bankability indicator and Information Technology approach. , While in the other indices, there is a significant different between the perspectives of groups toward the indices.

Keywords: Urban Development Strategy(CDS), urban governance Indicators CDS, Oshnaviyeh City

Trend Analysis of Land Cover Changes in Arak City Between 1973 -2011

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Abstract

In recent decades, problems of urban growth and land cover changes has been one of the most important issues on a global and national scale that different technologys   were used for the recognition of the nature, dimension and functions of the aforesaid causes and process , among these the remote sensing technology due to its ability to produce high spatial and spectral resolution satellite images is known to be an effective tool for the detection and evaluation of changes. The present study is descriptive – analytical approach which uses Landsat ETM +, TM, MSS images acquired in 1973, 1985, 2000 and 2011 in order to analyze the trend of land cover and land use changes. To obtain the magnitude of changes, band subtraction method and fuzzy logic were used. Satellite images were classified using Maximum Likelihood Classifier (MLC) in ARCGIS10.1 software. Results show that as a consequence of increasing population and expanding of urban areas, fuzzy magnitude of changes were equal to 0.84843, 0.92983 and 0.92795 for the periods of 1973-1985, 2000-1985, and 2000-2011 respectively. The urban area have increased 7/6, 15/2, and 11/9 square kilometers during these three periods. And during 38 years, urban area has reached from 14.9 to 49.8 square kilometers which shows an average annual growth rate of 0.918 km^2 and correlation between population growth and urban expansion is 0.976.

Distribution of Urban Facilities and Services by Social Justice Approach

Case Study: Piranshahr City

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Abstract

Today's cities, especially in developing countries, due to population growth and urbanization require attention to the spatial and social justice in optimum enjoying of different favorable urban facilities and services. But the issue of unsuitable servicing the areas and deficiencies in providing such services and facilities are in contrast with the concept of justice. This study tries to evaluate the distribution method of urban services in all neighborhoods of Piranshahr city. The research method is of descriptive –analytical one and for this purpose, AHP, Average of Nearest Neighbor , TOPSIS technique and Network Analysis models have been used. To perform these process, ARC GIS and Super Decision softwares have been used, In a way that the distribution of municipal services in the city were shown and urban neighborhoods were ranked from the view point of having urban services . The results were plotted in the form of GIS maps and charts. The obtained results showed that there is a noticeable social inequality in Piranshahr neighborhoods in service accessibility because the rich ones access is about 0.58 has a great distance with the poorest one which is about 0.04.

Key word: urban services, distribution of social services, social justice, Piranshahr City

Assessment of the Spatial Distribution of Health- Treatment Services and Providing Optimized Distribution Pattern Case Study: Khuzestan Province

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Abstract

According to the problems which exist in the distribution of spatial services in developing countries, such as lack of hierarchy of distribution centers in the region, this issue has more than ever considered.The purpose of this article is identifying the existing challenges based on health components through ranking counties of Khuzestan province and providing an optimum model for Spatial Distribution Service.The research methodology is descriptive – analytical and based on documentation and library resources. VIKOR decision making method was used for ranking and SPSS, GIS & Excel softwares have been used for analysis of data. Finally the results indicates the unequal distribution of health and treatment services in the counties of Khuzestan province,in which Ahvaz city with a score of zero is placed at the highest level of development and Bavi with a score of 1 is placed at the lowest level. .Also, the correlation coefficients of VIKOR indexes with Population number was 0.652 and VIKOR index with percent of Urbanization was 0.642 which shows a high correlation. At the end, according to the obtained results, Optimization pattern of spatial distribution of health services has been suggested in Khuzestan province.

Keywords: spatial quality, spatial distribution, health services, VIKOR model, counties of Khuzestan province.

Study the Developoment Guidlines of Public Participation in Golestan Province

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Abastract

Public participation is associated closely with civil society, a society that has based his power on people. This is the protection of the rights of those who are members of a community. Undoubtedly, in such a society, Power Structure takes his Power from its principle. In our country, despite the presence of the backgrounds and basis of participation and cooperation spirit in various fields, this social feature has not yet achieved the opportunity for a sufficient and comprehensive appearance and requires to reinforcement , support and development of new systems in this area. In fact, the overall goal of this research is to identify and prioritize the strong and weak points, opportunities and threats that public participation development in Golestan province is faced with. The research method is a combination of descriptive and analytical method and depth oriented and it has an applied nature. Information is collected by Surveying - Library method and Statistical Society is formed by experts in the field of public participation. In this study , it is tried to use the analytical model (SWOT) to identify key issues and related and effective sectors in developing of public participation in Golestan. Then for the better understanding of the matter, the Components and definiteness of development of Public participation were ranked by using fuzzy hierarchy (FAHP) model. The results of this research show that the work culture, self confidence , national trust and the tendency of NGOs and people to participate are considered as the most important factors in the field of development of participation.

Keywords: public participation, Golestan, development, FAHP, SWOT

Analysis of Housing Quality in the 20 Neigborhoods of Bijar City by Using Entropy and SAW Method

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Abstract

Mankind has always been struggling with housing as a significant need and has been trying to find a decent and rational answer to it. Thus, despite housing being a vital need, having access to ideal housing is the concern. Therefore, this study seeks to examine and analyze the quality of houses in the residential areas of "Bijar" city. The method of this study is based on a descriptive- analytical approach. For collecting the essential data, field research and library- based methods have been used, with the existing data in Iran's statistics center for evaluating the housing quality in different districts of Bijar. At the end, considering the purpose of the research, the collected data has been analyzed using SAW technique and Entropy. The results based on the analysis of 14 indexes demonstrate that among different districts of Bijar, Halvayi and Ghalé Borjgah were the highest in terms of housing quality, with Mahmoud Abad, Takhte Alia and Takhte Sofla being the lowest.

Comparing the Performance of Raster-Based TOPSIS and MOLA Methods in Land Use Planning Case Study: Hable-Rood Basin

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Abstract

Environmental crises of today caused by the irrational use and land conversion, have made ecological evaluation and land use planning ever more essential. Different methods are used in land evaluation and land use planning. Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) and Multi-Objective Land Allocation (MOLA) are two of the multi-criteria evaluation and land use planning techniques. In this paper, TOPSIS and MOLA were used in raster based land use planning in Hable-Rood Basin. Ecological, economic and social evaluation maps were used as criteria and aquaculture, gardening, town and rural development and rangeland management were considered as the alternatives of land uses. Entropy method was used for weighting evaluation maps and then TOPSIS was employed to prioritize land uses in the study area. Both entropy and TOPSIS were implemented in raster format through Idrisi software and for comparison, the MOLA module was used in Idrisi software. The results of the two methods were compared and analyzed. Also, to examine the spatial pattern of the resulting land use maps, landscape metrics were calculated using FRAGSTATS software. The results showed that spatial patterns of the TOPSIS and MOLA are different with an overlap of 57.41 percent. Analysis of landscape metrics showed that spatially land uses are compacted in TOPSIS, while in MOLA they are dispersed in some areas. Both methods have their advantages and disadvantages. An important issue in current land use planning practices is enhancement of these methods for which we suggested a combination of the results obtained through the two methods.

Assessment and Prioritization of Urban Sustainable Development Indicators by Using Network Analysis ANP Model Case Study: Districts of Zanjan City

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Abstract

Sustainable development is one of the most comprehensive concepts in recent decades.In the broad sense of the term, it means the proper and efficient administration and operation of financial resources, human resources to achieve optimal utilization that is achieved by the application of technical possibilities, structure and organization for today's generation and future needs in a satisfactory manner. So we can say that sustainable development is an organizing principle for human life .The purpose of this study was to evaluate and prioritize indicators of sustainable urban development in the city of Zanjan and provide solutions for sustainable urban development in the city.In this study, the method based on objective is applicable and based on the type is of descriptive-analytical one. So in explaining the history and literature of the subject and presenting research network model , library studies and for collecting information with respect to the research nature, field methods were used.As well as to evaluate and prioritize the presented index , the Network Analysis Process (ANP) has been used.The results of the study show that the four areas of the zanjan city in terms of having development indicators are different and also thee is a significant relation between the nominated indicators and sustainable development trend in Zanjan city.   Among the studied indicators, economical indicator with 330381/0 " points and physical one with a 283131/0 "points play the greatest share in sustainable urban development in the areas of the Zanjan city.Other indicators are much direct impact on the sustainable development of quad city area of Zanjan.

Keywords: sustainable development, development indicators, ANP model, Zanjan

Assessment and Evaluation of Urban Public Spaces Vitality and its Role on Improving Young People's Quality of Life Case Study: Nazar Sharghi Street in Isfahan

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Abstract

Cities and public spaces need vitality and vigor as vital organs. Creating and improving public space vitality require adopted attributes of space due to responding Citizens and particularly young people needs, that in turn can be led to the increase of continues presence and quality of their life. So the goal of this paper is the assessment and evaluation of indicators of public space vitality that due to this aim by using documentary and analytical-descriptive method, during study of young behavior and their needs, indicators of public space vitality categorized in 4 groups in relation with young quality of life. Then based on fourth group of indicators, research questionnaire was designed according to Likert scale option. By using Kokran formula and random sampling, 101 questionnaires were completed by young people in Nazar Sharghi Street that is one of the vital spaces in Isfahan city. These questionnaires analyzed based on Hierarchical multi variable regression and in SPSS 19. The result of analyzing shows that the average of vitality in Nazar Sharghi Street is 3.37 that is over the 3 as a middle norm. Also the average of economic vitality is 4.43 that is more than social vitality average (3.14) and environmental vitality average (3). Furthermore statistical analyses indicate that the importance of environmental vitality is more than economic or social vitality for young people with Beta ratio 0.711. Also a significant relationship was observed between education and perception of vitality. In other word by increasing education among people, their perception of vitality in space was increased. Finally by discussing about the role of public space`s vitality in young people quality of life, some suggestions for improving vitality in public space are offered.

Keywords: Public Space, Vitality, Quality of Life, Nazar Sharghi Street, Isfahan

Morphologic Study of Plain Salt Dome in Southern Bushehr

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Abstract
Plain salt dome is located between two faults of Kazeroon peisangi (north) and Borazjan (south) . These two faults are dextral strike-slip fault system of Ghatar –kazeroon that the northern segment of the fault system is located in desert area of Iran. The aim of this study was to evaluate the morphology of the plain salt mountain using field method, aerial photos, satellite photos, topographic maps and mapping of 1: 50,000, geological and then the review and recognition of the effective internal and external phenomenon in forming the morphology of the plain salt dome. A number of observed structures in the region have been created associated with the process of dome formation and in contrast some of morphologies have no any relation with the tectonic processes of dome formation, among the structures relevant with salt dome , it can be referred to different types of Karsts, salt fluxes, environment reverse faults which can be observed around the dome's area, table structures (Nappe), intestinal folds, which have been formed within the gypsum layers, the folds associated with fault and other structures and also some of the structures are not associated with the dome formation such as salty springs, waterfalls, *cauliflower valleys, abrasive columns ,* gorges and . . .a number of these morphologies have formed due to break up and a number due to the tectonic of the area and the reason for forming another group of morphologies are the both break up and tectonic of the area.

Keywords: salt dome, morphology, break up , tectonic, karst

Active Faulting Along Tabriz Fault (North West Part of Iran)

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Abstract

Although during the last two centuries , no important seismic activity has been observed along e Tabriz fault, but field surveys show the active faulting along this fault. Based on the field evidences, different morphological features relevant with faulting can be observed along this fault, So, possibility of occurrence of destructive earthquake by this fault in future is not unlikely. Tabriz Fault is composed of two main pieces. This fault in its length has not the same geometry and based on the changes in the geometry of fault rupture level, it can be divided in to three parts. The northern part is continued from the north part of Tabriz airport up to Soofiyan city and is compatible on the northern part of Tabriz fault. In this part, Tabriz fault has caused Miocene sediments to be laid on young Quaternary sediments and has a relatively steep slope toward north east. The middle part is continued from the north part of Tabriz airport up to the east of Baghmisheh town and has caused Miocene sediments to be laid on young Quaternary sediments and has a relatively steep slope toward north east . Also, terrace surfaces indicate rising the northern block of this fault. The middle and northern part of Tabriz fault has separated from each other by a Pull-Apart structure . finally, the south part of Tabriz fault, which is continued from the east of Baghmisheh, Tabriz up to Bostanabad city , has caused Plyv-Quaternary sediments with the fault border to be laid on Miocene sediments. The south part of Tabriz fault unlike to its middle and southern part has a gradient toward south west. In both of the third faults, Tabriz fault has caused the sediment movement to the right and has a pressure component.

Keywords: Tabriz fault, Active faulting, Geomorphology, Geometry.

Empowerment Approaches to Urban Fringe Areas, Case Study Informal Settlements Hasanabad in Yazd

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Abstract

Informal settlements are the major factors of creating instability in the cities especially in developing countries. informal settlement is mainly known with the informal occupation of the land and housing, lack of observing the official and conventional rules and regulations of urbanization, severe lack of infrastructural services, physical and demographic rapid growth, dominant informal occupation, structural and installation instability , instable income, appropriate physical bed for the growth of social pathologies and formation of deviant subcultures and creation of social bases of criminals and offenders. This phenomenon has been created due to the growth effect ot urbanization, rural-urban migrations and urban poverty.Enabling approach is a solution that through emphasizing on the endogenous nature of the problem resolving , can provide grounds for reducing the negative effects of informal settlements. This study has been conducted to the aim of empowering the informal settlement of Hasanabad Yazd to provide an appropriate model for its organization. The research method is of descriptive – analytic one and of applied and developmental type. The data were collected through library and documentary studies and also filling questionare and by using factor analysis, the local reqirements were prioritized and solutions for empowermnent has been presented. While reviewing the studied 34 questions, the effective factors on the sustainable development of the local area was decresed to 9 (nine) factors and with respect to the correlation rate of each loaded question in factors, the appropriate title was selected. These factors cover 67.124 % of the variance , in which environmental factor with19.152 % has had the greatest percentage of variance and training with 3.696 % has had the lowest percentage of variance. Thus, with respect to the percentage of variance, the factors were prioritized based on the severity of the impact on empowerment of the communities as environmental, social, educational, health, sport, participatory, physical, economical, infrastructure and skills training.

Key words: sustainable development, informal settlements, empowerment, Hasanabad, Yazd.