Zoning of the Vulnerability of Sanandaj City Using AHP and TOPSIS Models

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Abstract

Earthquake is a serious threat for society development and its vulnerability is influenced by environmental variables. The damages of earthquakes are reduced by recognizing these variables and area zoning. The aim of this paper is the zoning of earthquake vulnerability of Sanadaj city based on effective variables. For this purpose, the final map of region's natural vulnerability zoning and skeletal indices and other effective social indices have been used. The variables were changed to layers of GIS and then, overlapping were performed using AHP and TOPSIS models. Finally, the vulnerability was classified in five groups from very low to very high. By comparing the results of these two models, it was revealed that these models had a similar vulnerability but they had a difference in which based on AHP model, the regions with very high vulnerability have little fragmentation in contrast with TOPSIS model. Therefore, according to AHP the most fragmentation was occurred in regions with low vulnerability. While, based on TOPSIS, the regions with average vulnerability have the most extension. According to Both models the most vulnerable areas were in the north of Sanandaj city.

Keywords: Quality of life, Planned neighborhoods, Informal settlements, The city of Zanjan.

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Identification the Geomorphic Locations of Deira Catchment area and Assessment their Geo-tourism Capabilities by Pereira Method

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Abstract

Geo-tourism is a combination of geography and tourism. In this sense, geo-tourism encompasses biodiversity, cultural diversity, beautification, community-based tourism, and even local food movement, and homogeny and similarity are considered its enemies. Geo-tourism is a form of tourism which is defined to ensure the establishment and improvement of geographical features such as the environment, culture, landmarks and legacies and well-being of residents. With this approach, Deira catchment area in Gilangharb Township located in 215 km of Kermanshah, was chosen because of its natural resources for Geo-tourism assessment and was analyzed according to obtained data from library and literature studies and field studies using Pereira. Although the region attracts hordes of tourism annually, yet its economic position in tourism industry is not founded. In this research we try to assess Geo-tourism capabilities related to available landforms in the region in addition to identify geomorphological shapes and forms in the region and explore its features. The results of this study showed that the geomorphic location of Galin has high capability in the field of tourism attraction with 345/5 geomorphology value and managerial value of 5 in Deira catchment area. The geomorphological shapes and forms of the region have high capability in the field of tourism due to high ability in the field of geosciences education, and feature and attributes such as beauty, ease of access, and natural and cultural attractions.

Keywords: Geo-tourism, The catchment area of Deira, Pereira method, Geomorphological shapes and forms.

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Analysis of Sources of Voting in the 9th Period of the Iran's Islamic Parliament Elections in Kazeroun County from the Combined Perspectives of the Inglehart, Pippa Norris and Chicago

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Abstract

Elections are the process that citizens can criticize and monitor the politicians and governors. In fact, the elections are the most appropriate democratic way in which the citizens can be interfered in the choosing of government operators. At the same significance, political geography is going to study and analyze the relation between election and geographical environment in order to conduct the geography of elections into the description of the general patterns of politics and recognition of the process of the government establishment. In this paper, we have studied the effective factors in the victory of, the Candidate of Kazeroun City in the 9th Period of the Iran's Islamic Parliament Elections. The methodology of the paper is descriptive- analytic. The results of the research show that among the various theories about the sources of poll, composition of Inglehart, Pippa Norris and Chicago give a holistic opinion to studying of the elections. Therefore, in the case of Kazeroun City, it seems that three factors of political experience in the past, economic-social basin and the scheme of political system in the frame of biological foundations played the most roles in the poll of Kazeroun City's candidate in the 9th period of the Iran's Islamic Parliament Elections.

Keywords: Geography of Elections, Inglehart, Pippa Norris, Chicago, Iran's Islamic Parliament, Kazeroun.

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Spectral Analysis of Time Series for Annual Precipitations in Iran

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Abstract

Precipitation is one of the most essential and variable climate components whose understanding has long been a concern for climatologists. The main objective of the current paper is to investigate and analyze the precipitation cycles in Iran. In order to realize this objective, the annual precipitation data of isometric station of Iran were extracted. These data have been collected by the country's meteorological organization since the establishment of the station until 2008 which adds up to more than 40 years of statistics. Then, in order to investigate and analyze the precipitation cycles, spectral analysis (co-structural analysis) was utilized. Regarding the calculations, the programming utilities of Matlab were used and the Surfer software application was exploited for drawing operations. The results obtained from analyzing the cycles show that there are significant 2 to 3 year cycles, 3 to 5-year cycles, 2 to 6 year cycles and sometimes 11 or more- year cycles governing Iran's precipitation patterns. Hence, in east and southeast of Iran, 3 to 5-year cycles are prevailing and in west and northwest 2 to 3-year cycles are dominant and finally in north east 2 to 6-year cycles are customary. The most numerous and the most variable cycles happen in south and south east, mainly due to the mountainous regions of Zagros as well as the proximity to Persian Gulf. The north western regions, much like the southwestern regions, indicate variable cycles due to the mammoth mountains of Sabalan and Sahand. Moreover, the presence of those

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cycles which have a return period equal to the statistical period has been seen in various parts of Iran, which indicates a precipitation trend in this country.

Keywords: Precipitation, Spectrum analysis, Harmonic, Iran.

Activity and Seismic Power of Tabriz Fault and Casualties in Tabriz Metropolitan, the Assessment by Remote Sensing and GIS Techniques

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Abstract

Physical expansion of Tabriz metropolitan increases the possibility of earthquakes risks. Given the importance of this issue, this research is trying to pay to monitor the activities and seismic potential of Tabriz fault and the estimates of casualties in Tabriz metropolitan using remote sensing and GIS techniques. To achieve this goal, ASTER satellite image was processed in ENVI 5.3 software. Fault seismic potential is determined with empirical models and average calculations were used as the basis for assessment. The casualties are determined in accordance with the terms of seismicity and structure of our country urban elements, respectively. Based on visual interpretation of satellite data, along Tabriz fault are exposed geomorphic changes that reflect the tectonic activity is in the range of Tabriz metropolitan. Tabriz fault evidences examples of diversion of watercourse Ajichai, cliffs and lens shape phenomenon are most important that have been considered in the interpretation of the activities on satellite images. Based on empirical models, be created in Tabriz fault earthquakes is average of magnitude 6.8 on the Richter scale. Assuming earthquake seismic activity according to Tabriz fault scenario, the total population of about 1605884 of the Tabriz metropolitan was estimated approximate number 1252589 casualties consist of 658412 people dead and 594177 people injury at night.

Keywords: Tectonic, Tabriz fault, Seismic Potential, Casualties, Remote Sensing and GIS.

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Investigation of Compatibility Index in Urban Land Use Planning in Order to Stabilization the City's Economy, Case Study: Tehran 1st District

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Abstract

Site Selection and spatial distribution of urban planning has an important role in the city's economy and its economic stability. Today, inharmonious distribution in some areas and the urban districts has led to conflict, increasing transport costs and environmental pollution. Compatibility index of land uses affect directly and indirectly on the stability of the city's economy. The aim of this study is to analyze the condition of urban land use based on compatibility index in order to achieve sustainable economic in Tehran 1st District. In this study compatible creterias of land uses including distance from the fault line, land uses proximity with infected and annoying user, land use site selection based on slope is used. The research is practical research and its method is descriptive-analytical method, using Geographic Information System (GIS) and (excel) software. The data and information was collected from library documents, Digital Maps of the study area were analyzed using GIS. Findings and results showed that about 40% of locating is located within 700 meters from the fault line and there is a hazardous district. More than 20 % of land uses have located in inappropriate slope and about 0.3 % of land uses in terms of environmental pollution and nuisance are unfavorable land uses as well. Overall, various financial, casualties and irreparable losses to follow in present and future that finally will follow Urban Economic volatility.

Keywords: Urban Land Use, Compatibility and proximity of land uses, Stabilization the City's Economy, Tehran 1st District.

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Guide Plan Implementation Impact Assessment on Environmental Quality in Rural Area (Case Study: North and South Fendresk Rural district

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Abstract

This study, has tried to express the quality of environment using theoretical conceptions in rural areas. The guide plan impacts on quality of rural environment was assessed through environmental quality indexes and criteria. The study methodology is based on library documents and experimental approach that was used in 17 rural areas of north and south Fendresk district of Ramyan county in the form of 359 cases of sample community. The obtained results show that for the from index with 0.438; has maximum impacts and the functional index with 0.288 has the minimum impact of guide plan implementation from 3 dimensional components on quality of rural environment. Thus, it could be argued that the guide plans have been carried out with formal and physical approaches in rural areas and their formal effectiveness is more than the functional one and functional changes in rural area as well.

Keywords: Assessment, Environmental quality, Guide plans, Tural area, North and south Fendresk rural district.

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Homogeneity Assessment of Annual and Seasonal Maximum and Minimum Temperatures Time Series (Case study of Khazar Region)

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Abstract

One of the important arguments in variability and climate change assessment is the accuracy of climatic time series analysis. Therefore time series to be used should be homogeneous. Annual and seasonal maximum and minimum temperatures of 5 synoptic stations that contain long time series have been assessed in this study. For so doing, we utilized direct and indirect methods. We used metadata through indirect method and absolute and relative standard normal homogeneity test through direct routine. Results showed inhomogeneity which was identified by statistical methods corresponding to metadata. Relative standard normal homogeneity test is more suitable than absolute standard normal homogeneity test in this concern. Assessment of homogeneity between annual and seasonal minimum and maximum temperatures indicates that the parameter of minimum temperature has more inhomogeneity in the data. Comparison of homogeneity results between temperature of warm and cold season reveals that the temperature is more stable during relocation and other changes in cold season than in warm season. Relocation of many stations was not proved to be the cause of inhomogeneity in annual and seasonal maximum temperatures.

Keywords: Homogeneity, Minimum and maximum temperature, Standard normal homogeneity test, Khazar region.

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Effects of Climate Change on Drought Duration and Severity in Arid and Semi-arid Stations (Bandarabbassand Shahrekord), Based on HADCM3 Model

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Abstract

The aim of this paper is assessment and comparison of potential impacts of climate change on drought indices in an arid and a semiarid station. For this purpose, daily data of minimum and maximum temperature, sunshine and precipitation are used. This data were downscaled statistically by using LARS-WG model based on A2, B1 and A1B scenarios. These climatic parameters are projected for 2011-2040, and RDI index was extracted for both observed (1961-1990) and projected data from HADCM3 model. The research outcomes show drought severity has increased under each scenario in both stations, except for Shahrekord under B1 scenario. For Bandarabbbas station, percent of droughts are about 6.7, 10 and 10 under A1B, A2 and B1 scenarios respectively. This parameter is 6.7 and 3.3 percent under A1B and A2 in Shahrekord station and the number (percent) of droughts will decrease about %10 under B1 scenario in this station.

Keywords: RDI; Climate Change, LARS-WG, HADCM3, Bandarabbass, Shahrekord.

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Geomorphic Response of Alluvial Fans to Tectonic Activity and Climate Change in South Plain of Birjand

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Abstract

Alluvial fans as one of the major geomorphological forms of water reservoir are very important, such that most of urban and rural centers of Iran, especially in central and eastern sections are located on alluvial fans. They are usually controlled by geomorphological forms of tectonic activity along with climate change. Alluvial fans are located in the southern half of the drainage basin of Birjand. Due to their proximity to the city and the residential areas, they are very important. Bagheran Mountains in the south part of Birjand are part of Sistan area. The most important rock units in the upper Cretaceous include ophiolitic mixture, flysh, congelomerate and the oldest unit is related to that era. In this study the geomorphology evidence of the area has been used to investigate the morphotectonic activity. In order to do this purpose, we used sime indices. Review of the samples of sediment aggradation and drainage network on alluvial fans show how climate and tectonic have influenced them. Field observations and sediments granolometry have been used for this purpose. The results of the analysis also show young tectonics and dynamic processes of external activities intensity performance in the region. Also granolometery analysis of the area as evidence of tectonic activity result in alluvial fans landforms transitional to the bajada plains indicated that climate change and wind erosion have higher intensity on landforms.

Keywords: Alluvial fan, Morphotectonic, Geomorphic respond, Granolometry, Birjand, Bagheranmontains.

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The Role of Physical and Accessibility Variables in Determination of Housing Price; Case Study Sahand New Town

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Abstract

Housing as a heterogeneous product, lasting, immovable and assigning is the main part of family budget. In other words, the housing as one of the main goods not only contains use value in its nature but also is considered as an investment in which selection of the price has main role. Therefore this article attempts to explore the affecting variables on housing prices in the Sahand new town. The research method is correlation test and the use of hedonic function. The results showed that the factors like lot size and building area, number of floors and the number of apartment in per floor among the physical and spatial factors' distance to nearby park and green space, distance to nearby shopping center have the highest effect on housing price. The correlation analyses used were Spearman and Kendal methods. These analyses only used for spatial factors. Results showed that there was straight correlation between the price and nearby mosques, which means the price arises when it is far away from the mosque.

Keywords: Physical and access variables, The Price of apartment, Hedonic regression model, Sahand new Town.

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The Zonation of Suitable Photo Tourism Regions of Iran

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Abstract

Climate as a Geographical phenomenon, have a strong interrelationship With Tourism and development Purposes and goals Tourism. Photo Tourism as a main subbranchs of Tourism, is attended case for countries with suitable climate and with long shine time at all Seasons. Unequal distribution of sun radiation on surface of the world is main reason that people travel from high latitude with low shine time to low latitude with long shine time. In this paper is study tourism climate comfort for all seasons of years, by use of TCI index then, is calculated of shine time for all seasons .In this Research in order to zoning of suitable photo Tourism regions of Iran, and also assessment climate comfort tourism at during all seasons at different time of year, is used fuzzy methods and fuzzy Gamma. The suitable climate condition or comport climate is determined by using of fuzzy methods. The results of this study are show that is five regions in maximum and four regions in minimum is exist in suitable photo Tourism of Iran. These regions is represented same property of comfort climate respect and shine time in during time of year. In other term, these regions have very suitable photo Tourism aspect at many time of year.

Keywords: Photo Tourism, Index Climate Tourism TCI, Pattern Logic Fuzzy Zonation, Iran.

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Investigation the Potential of Morphological Change Urmia Shahrchi River

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Abstract

The purposes of this study was the investigation of Shahr Chai river patterns, its stability and subsequent changes in the period of 2000-2013. For this purpose we used Landsat images, topography, geological maps and hydrological data. For study of river pattern and its changes we used sinuosity and meander central angle indexes. Also for, the study of river stability we used shear stress and RBS indexes. Results indicated that river pattern changes are very low. River stability analysis indicated that total shear stress rate is higher than critical shear stress. Results also show that potential of river is high for creating morphological changes in costal intervals but decreasing of river flow has been caused that river changes to be in the lowest amounts

Keywords: River Changes, Meander, Sinuosity and Central Angle Index, Stability Analysis.

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The Investigating of Differences between the Quality of Life in Planned Neighborhoods and Informal Urban Settlements (Case Study: Karmandan' and Islamabad Neighborhoods in Zanjan)

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Abstract

The studies show that in the globalization and new urbanism which tend to focus on poverty and wealth in most developing countries, the absence of efficient plans of urban developments in order to distribute the desired space of development gains in urban areas causes to form the patterns of informal and planned settlements. This research is to compare comparatively the quality of life at Islamabad as informal settlement and Karmandan neighborhood as planned neighborhood of Zanjan based on economic, social, cultural, religious, physical and environmental indicators. The research is based on the descriptive-analytical method using library and survey resources in order to analyze the indicators of quality of life. The data analyzing was performed with SPSS software, and then the models of AHP and Vikor were used to investigate comparatively the indicators of quality of life, and descriptive tests such as mean and inferential tests X^2 (Chi-Squre) were used to test the hypotheses. The results of the comparative study based on models indicate that the Islamabad neighborhood compared to Karmandan neighborhood has the unfavorable situation, and has the dramatic differences for economic and physical indicators. Also the quality of life changes when any of the indicators changes. Therefore, the selection viewpoint should be eliminated and tried to improve the quality of life of citizens with the desired planning.

Keywords: Quality of life, Planned neighborhoods, Informal settlements, The city of Zanjan.

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The Assessment of Earthquake Risk Based on Hazard and Vulnerability in Rural Areas Case Study: Central District of Marand County

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Abstract

Earthquake risk identification and analysis in rural areas is the decisive factor in the reduction of their damages and casualties. Because in the cycle of crisis management, planning and identification of rural settlements' risk it is necessary to achieve the waste resources prevention policy and the utilization of the maximum power. In other words, many risks in villages risk in earthquake are preventable through the recognition and the reduction of vulnerability roots. Therefore this study of causes discuses and analyzis the earthquake risk in the rural settlements of central District of Marand County with descriptive-analytic methodology. The population of this study is consisted of 74 villages in the central district of Marand County, all of which have been studied. To assess earthquake risk in study area, initially the earthquake risk assessment model was presented in rural areas based on the conceptual and operating framework and then weighting to the indexes using the academic professionals (30 analytical hierarchical process questionnaires) and data process in the GIS environment, indexes of exposure (using GIS analysis) and vulnerability (using TOPSIS technique). It should be noted that, each of the parameters was measured and modeled within several indicators and finally, using the layers overlay analysis in the GIS, earthquake risk assessment was conducted in the study area. According to the results, about 32% of the studied villages are located in high and very high risk zones which raise the necessity of planning, based on principles of crisis management.

Keywords: Modeling, Hazard, Vulnerability, Risk of earthquake, Village, Marand County.

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