

## ABSTRACTS

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### **The Comparative Study on Application of Assessment Methods of the Development in the Regional Studies The Case: Esfarayen County**

The beginning of the movement of applying quantitative models in social science during 1960 concurring with the controversy on development & underdeveloped resulted in usage of such models in measuring the level of developedness of regions. By analyzing a number development measuring models (Moriss, numerical Taxonomy, Principal Components Analysis, potential) the present article aims to answer this question that whether all models of measuring the level of developedness will resulted in similar conclusions? Towards this objective, 43 variables under five development indicators are chosen and by applying each of the measuring model to this data, the level of development of the districts Esfarayen county determined. The comparison of the results provided by these methods shows that because of the essence and different method of measuring the indicators as well as the particularities of each region, the level of development of the villages studied differ from one method to the other. Therefore, it has to be careful using quantitative models and applying their results in planning.

**Keywords:** Determination of development degree, Moriss Model, Numerical Taxonomy Method, Principal Components Analysis, Potential Model, Coefficient of Variation, Esfarayen County.

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### **Rainwater Collection in Natural Conditions an Approach for Solving Water Shortage in Arid and Semi - Arid Zones (Case Study: Latian Watershed – Iran)**

One of the important problems of arid and semi-arid zones, for developing of these regions and especially villages located in these climates, is insufficient rainfall or shortage of water. In these regions often the rainfall is in winter and early spring. Also because of high rating of precipitation of these regions the rainwater or runoff is going out very fast without any reasonable using. It is clear that by increasing the population more crop production via increasing of fruit trees and woody trees is necessary. One of the methods of increasing irrigated farm is small scale farming, rainwater collecting and supply collected rainwater in root zone and separated pool for reservoir of supplementary irrigation in summer. This research, which has done in Latian Watershed, had 12 plots with area 40 to 70 sq/m. Slope of these plots were 3 groups, 2-20, 21-40, 41-60 percent and vegetation conditions were also 3 groups, as 10-30, 31-50 and 51-70 percentage coverage by natural grass. 12 times of daily rainfall and its runoff separately measured in these plots. Depth of runoff was 55 to 104 mm from 375 mm rainfall in 12 days per year. The results showed that treatments of vegetation and slopes have significant difference in 95% of accuracy. Maximum depth of runoff observed from 41-60% slope treatment and 10-30% vegetation coverage. More slope place was suitable for runoff collecting and level part or low slope is quite for trees planting and infiltrating of runoff.

**Keywords:** Arid and Semi, Arid Zones, Latian, Rainfall, Rainwater Collecting, Runoff, Trees Cultivation.

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### **Evaluation of Lands Use in Ardakan of Fars**

In general the evaluation way of civil lands usage reflects the city prospect and features, also shows the different utilizations of civil spaces during a period of time to arrive in municipal development aims. In this research along with dissecting academic aspects and practical course way of lands use evaluation usage in Iran and the world, it is analyzed in Ardakan of Fars in analytical- Comparative method. The results show that urban sprawl of this city in two recent decade and population increasing has made unbalance in lands using, so it is considerable to counterbalance, making facilities and determination appropriate lines to preventing urban sprawl and preserve agricultural lands and natural sources. Quantitative evaluation of lands use concerning to per capita, available criterions and suggestions, also qualitative evaluation concerning to Matrix of agreement, capacity, desirability, dependence and scientific analysis in this research shows that most of the available usages with quantitative and qualitative don't coincide on standards and criterion aren't balanced. How to counterbalance, regulation and optimization of lands use usages in main parts of the city is expatiated in article.

**Keywords:** Quantitative Evaluation, Lands Use, Qualitative Evaluation, Optimization.

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### **Coastal Geomorphology of Estuary of Tang and its Characteristics**

There are many estuaries on the Oman Sea and the Persian Gulf but Tang estuary is one of incomparable with its shape and occurrence course which is located in the east part of Tang port on Mokran coast of Iran. The geomorphology phenomena around this estuary is one of incomparable with its shape and occurrence course which is located in the east part of Tang port on Mokran coast of Iran. The geomorphology phenomena around this estuary concerning to geomorphology are so important and some conditional geomorphic like "Toumboloy of Tang" are unique.

Recognition of morphologic situations of the region of case study either its shape and circumstances or genesis and appearance are most important and has positive effects in making basic installation and improve hunting and fishing industry in the region.

In this article it will be tried recognizing phenomea and important geomorphologic conditions based on field experiences and objective observations in the region because the studied sources and accomplished works are so little.

**Keywords:** Estuary, Sandy Batten, Toumboloy, Tide, Raised Coasts.

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### **The Study of Important Factors in Suburbanization Problem and its Social Consequences on Ahvaz City**

The purpose of this article is “The study of important factors in suburbanization problem and its social consequences on Ahvaz city”.

The method of this research is a kind of survey and the sampling method is multi-stage cluster. The statistical population includes suburbanites of Ahvaz city more than 120,000 cases in 2004 and the sample size was chosen 384 cases that the questionnaire of the hypotheses designed and accomplished.

The results of this research indicated that migration from rural and urban areas to Ahvaz city is the most important factors of creation and extension of suburban areas that is under effects of economical and social-cultural counteracting of previous residence and economical and social-cultural attractions of city. In the case of social consequences, it was also indicated that there is a relation between the intensity of suburbanization and the increase in relative deprivation that finally causes the dominance of poverty culture in this suburban areas.

**Keywords:** Suburbanization, Economical and Social-Cultural Counteracting of Previous Residence, Economical and Social-Cultural Attractions of City, Migration, Relative Deprivation, Poverty Culture.

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### **Characteristics and Controlling Factors of Gully Erosion (Case Study: Limited between Ahar-Meshkinshahr)**

A gully is one of the most complicated linear erosion features due to multistage gully evolution under the control of the large number of factors along times. Gully initiation and evolution usually results from a combination of natural and anthropogenic causes. Natural gulling processes are accelerated by intensification of farming system. Most of the times the gulling processes are triggered by inappropriate cultivation and irrigation systems, overgrazing, road building, land use changes is expected to have a greater impact on gully erosion than climate changes. The objective of this paper studies on impacts factors and control of gully erosion. In study area, gully erosion is a threshold depend processes controlled by a wide range of factors. Considering that for a given slopes (S) a critical drainage area (A) is necessary to produce sufficient runoff to concentrate and initiate gully thresholds lines. In this study, the relationship is  $S=0.407A^{4.54857}$  and value of  $S=A^{0.4}$  is from 4.04 to 21.32 as initiate gully thresholds.

These relations are suggested as indexes for estimating the location of gully generation. Finally multiple regression was used to include topographical parameters. This analysis shows that length of slope and high diversity are related with length gully. Patterns and rates of gully network development as well as network geometric configuration are highly controlled by soil/lithological properties. Field observations and sample analysis of soil show that the typical gully develops on old alluvium sediments.

**Keywords:** Erosion, Soil Erosion, Gully Erosion, Gully, Ahar-Meshkinshahr region.

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### **Analysis of Changing Accessibility Indicator in Metropolitan of Sydney (1991-2001)**

One of the most important matters for enhancing environmental quality especially in urban environment is developing accessibility versus mobility. Because the result of this transition from mobility especially personal car mobility to community accessibility (public transportation) reduce length of trips, consumption of energy and finally less air and environment pollution. Therefore, appropriate accessibility is a necessary element for achieving sustainability in urban environment.

With regard to this matter, we calculated accessibility indicator by zonal opportunity gravity model (employed person and spatial distance between zones) for 38 local government boundaries (zones) with complementary GIS tools. Moreover, changing of accessibility measured during 1991-2001. Also relation between accessibility index and six sub Social-economical-physical group factors (14 variables) was calculated by using multiple regressing and coefficient of correlation with SPSS software. Results show that accessibility value decreased by distance from city center to peripheral areas of Sydney. Also result yielded from map of accessibility changes show that two phenomena had taken place stimulatingly. One is high positive change of accessibility value both in central core mostly strap pattern (concentration) and sub-urban areas (decentralization), the other on is negative change of accessibility value in the middle rings of Sydney. Also results of calculating relation between accessibility index and social-economical and physical variables show that zones by low car usage to work, high public transportation facilities and so on have high accessibility value. In contrast, zones with low weekly income family, far from city center, high percentage of car usage to work, big household size and low public transportation facilities have low accessibility value.

**Keywords:** Accessibility, Mobility Changing Accessibility Index, Local Government Boundaries, Urban Environment, Sustainability.

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### **Studying the Periglacial Processes and Landform in the Easterly Slope of Sabalan**

Foundation of Periglacial erosion system is not related to its closeness to glaciers or continental glacier plates. In the easterly slope of Sabalan there isn't any of glacier erosion system, but with regard to the hight of region, seasonal changes in precipitation, seasonal changes of temperature, sunshine angle in hot seasons, slopes gradient, wind activity, slopes direction, vegetation destruction with frost and debacle action, domination of cold semi-arid climate in the region, we can say that a part of easterly slope of Sabalan is exposed to Periglacial erosion. We try to distinguish Periglacial Processes in the formation of easterly slope of Sabalan. So the important factor in the formation of Periglacial region is studied and Periglacial part of this slope is specified. After determinate of erosion processes in the easterly slope of Sabalan, Periglacial processes landforms and deposits characteristics are studied.

**Keywords:** Periglacier, Shattering, Frost Creep, Landslide, Rocky-bank, Nivation, Fluvial Processes, Eolian Processes.

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### **Evaluation of the Changes of Soil Salinity in South East of Sabzevar Arid Zones by Using the Remote Sensing Datum and GIS**

Destruction of lands and vegetations which is named desertification in international associations known one of the most important difficulties for human activities. Soil Salinity is a most important reason in form and extension of deserts. In this research with the aim of evaluation of the changes of salinity of soil which related in deserts in Sabzevar area the measurement of this area is 410000 hectares after geometrical correction, are used TM landsat digital datum of 13 May, 2001 and 20 April 1987 periods as the most important tools. So between many composite bands, indexes constitution and analysis of main factors the FCC 521 band as the best band of three-band composite is selected as technique of the work. Then to take many soil samples of area and testing in laboratory with using supervised classification method with the most probability the salinity maps of area for the both periods of time are drawn and analyzed. The analyses of salinity maps and interpretation of satellite images show don't changes in extension of non - salinity lands in area. However; increasing low - salinity lands in area the semi - salinity lands decrease gradually.

**Keywords:** Desertification, Remote Sensing, GIS, Soil Salinity, Sabzevar.

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### **Assessment of SCS-CN Model in Runoff Estimation Case Study: Amir-Kabir (Karaj) Dam Watershed**

The volume of runoff arising from rainfall in river basins is given special attention by researchers in the various parts of water resources management. So far, a variety of procedures have been devised and used for estimating the volume of runoff arising from rainfall. Most of such procedures are either based on classic statistical methods or the results obtained from other basins. Nowadays, remote sensing and GIS techniques provide a better use of these models. The Soil Conservation Service (SCS) has devised a method for runoff calculation which is based on curve number computation. The present study implemented the above model in the watershed of Karaj (Amir-Kabir) Dam by means of Geographic Information System (GIS) techniques, and came to the conclusion that using the weight model in curve number calculation allows for the entire factors effective in runoff production to be considered, thus leading to a more accurate estimation of the runoff arising from rainfall.

**Keywords:** Watershed, GIS, Runoff Estimate, Curve Number, Amir-Kabir Dam, Karaj Dam.