Governance Foresight, a Concept Development and Future of Tehran Metropolitan Governance

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Extended abstract

Introduction

Governance foresight in scientific literature has its root in social foresight. At the operational and executive level, policy making based on foresight is a branch of foresight which has been related with foresight of governance. The results of a governance system are the policies and programs resulted from. In a lower level of governance pattern, the pattern of decision making and policy making can be foresight-based. Policy oriented foresight attempts to see public policy making in long term and also refuses to predict. Furthermore, policy oriented foresight is based on this assumption that governments have the potential to influence the future. They consider the alternative ways of changing society by using foresight methods in order to that each of them needs different requirements and demands which needs different ways. The evolution of technology and rapid growth of physical-economic cities along with rapid changes in life style and relationships among citizen together in one hand and relationships between citizens and urban management in another hand show clearly the importance of the future of urban governance. In foresight literature, the future of management was discussed by researchers in the form anticipatory governance and governance foresight theories, but among these researches there are few cases which have considered the future of metropolitan's governance.

The future of Tehran as a metropolitan and capital is dependent upon drastic changes in macro trends of environmental, political, social, economic and technological conditions. Among these drastic changes, the structure of governance in Tehran won't be an exception; there are many future possibilities ahead. Accordingly, this future needs to be identified and discussed in order to determine an optimized path to tolerate such changes. The principles and concepts of foresight have been discussed and the scenarios of Tehran governance in 2040 horizon have been plotted and explained in this research.

Methodology

The nature of this research is descriptive-analytical and exploratory. It is exploratory because it

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doesn't follow the confirmation or rejection of the relationship between two variables and its goal is not test of a hypothesis, but it follows to recognize effective driving forces on the future of Tehran' governance and explore scenarios for future. The time horizon of the research is 2040 (1420) and this emphasize on the time horizon when asking from the experts about the degree of its effectiveness and uncertainty. In order to know effective deriving forces on the future of Tehran, first of all the global driving forces have been recognized by environmental scanning in form of STEEP method. In the meantime, the review of urban foresight experiments and using interview with mayors of different cities of all around the world about macro trends and effective driving forces on the future of the cities are the most important references. In order to completion and localization of identified deriving forces, the method of real-time Delphi (RTD) has been used. After the preparation of final list and the localization of driving forces, in order to recognize critical uncertainties, the ideas of 32 experts have been considered about the degree of driving forces' effectiveness and uncertainty on the future of Tehran' governance. Therefore, the scenarios are identified and 3 critical uncertainties are the basis for the scenarios. The incompatible scenarios have been removed by morphology analysis method and finally three scenarios are remained and the story of them is presented.

Results and discussion

Based on real-time Delphi results, the driving forces make major reforms in structure of the country administration and forming federalism in country, globalization and its influences on Tehran and participation status of NGOs and civil institutions in governance have the most degree of effectiveness and uncertainties. Based on three identified critical uncertainties and its combination overall 8 possible scenarios are created by the research. After internal incompatibility of scenarios the removing, 5 scenarios are remain as compatible ones and in following, the story for each of them is presented. Each of these scenarios will have different effects on urban governance and strengthening or weakening indicators of good urban governance on Tehran metropolis. In part of scenarios analyzed and explained about the effectiveness of every scenario on urban governance indicators. .

Conclusion

The results of the research show the future of Tehran governance won't be like the past, it’s also not so ideal that all obstacles to governance will be eliminated overnight. After reviewing scientific literature and based on the results of real-time Delphi it is clear that the future of Tehran governance is under the influence of a set of economic, political, natural, social and technological (overall 32) driving forces. The forces will be effective on the Tehran governance in their own style. In the meantime, 5 possible scenarios are applied in Tehran governance. Two of them at the two end of spectrum show the best and the worst possible status of key challenges and opportunities of Tehran governance.

The first scenario (governance at world class) is along a series of opportunities to improve the structure of Tehran governance. If the capacities of this scenario will be used in the best way, so the optimal pattern of urban governance will be possible and its major obstacles will be eliminated. However, in the third scenario (hard times of Khosrowan) the occurrence of negative defaults of critical uncertainties has made very difficulties to remove the obstacle. It also will have a series of new problems. In other scenarios, there are a combination of capacities and obstacles of urban governance; they make the managers to the possible futures. Thus, urban managers must be prepared to use each of the capacities with the knowledge and obstacles of scenarios and at the same time they must be prepared themselves for new obstacles and won’t rely only on limited methods to reform metropolitan governance structure.

Keywords: Governance, Foresight, Scenario planning, Tehran metropolis.

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Evaluation of Urban Planning Components in Tourism Sustainable Development, Kashan City

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Extended Abstract

Introduction

Variety of attractions in Kashan has developed various forms of tourism that can play an important role in entrepreneurship, advertising the goods and local services, increasing income and improving the life standards. In spite of the plenty of picturesque rare attractions, tourism has not been able to exploit these potentials and qualifications in developing sustainable urban tourism due to inattention to the role of urban plan in the course of developing the substructures and instrumentations offering the facilities to the tourists. The present study aims to investigate the role of indicators of urban planning in sustainable development of tourism to answer the following question and eventually offer appropriate strategies to expand and develop its sustainable tourism. The study attempts to explore the influence of urban plan indicators on the sustainable development of tourism in Kashan.

Methodology

This study is executed by an applied research by descriptive-analytical method. The research initially addresses the texts and references of formulating a theoretical framework. Then, the data have been collected through a survey containing observation and interview to provide and fill out the questionnaires according to the research hypothesis. Subsequently, the data have been analyzed through statistic tests (One Sample T test) and eventually the results, strategies and suggestions have been proposed according to the consequences of the findings. Statistic community of the present research contains two groups; the experts associated with tourism (executive system managers, tourism services agents, tour runners and tourism experts) and tourists. Fifty respondents were selected from the first and 138 respondents from the second group as the sample volume. Due to the limitations of professional experts and managers in the first group, effort was made to provide the questionnaires for all. The sample volume for the second group was calculated by using Cochran formula and the variance attained from pretest. The confidence level was 95% and probable error was 5% among 138 respondents. For higher confidence, 150 samples were selected by the researcher. The SPSS software was applied to analyze the statistical results and to process the raw data.

Results and discussion

For evaluation of urban planning indicators associated with the tourism sustainability

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development in Kashan, the researches display that the average scores of experts attitudes about the influence of substructures, instrumentations, and urban facilities; in Kashan tourism sustainability development is equal to 3.80 with standard deviation of 1.10 for the data. The results of inferential findings show the degree freedom of 49.00 with T value of 24.28 and significance level of 0.000, $p< 0.01$. Accordingly, it can be resulted from the substructures, instrumentations and urban facilities are remarkably effective on tourism sustainability development. The studies about visitor attitudes concerning a combination of indicators as substructures, instrumentations, and urban facilities, in Kashan tourism sustainability development show that the city lacks mandatory conveniences as a lot of instrumentations and urban facilities including residential and welfare services and instrumentations, sport and recreational facilities, urban framework structure, parking, entertainment services, transportation system, communication systems and traffic for tourists. The fact is confirmed by the results of inferential findings with T-value of 79.63, degree freedom of 149, and significance level of 0.000. Hence, the evaluation of influential indicators on urban tourism sustainability development from the view point of experts and visitors to illustrate the role of substructures, instrumentations, and urban facilities, in Kashan tourism sustainability development.

Conclusion

In present study, several indicators were studied to measure and evaluate indicators of urban planning in sustainable development of tourism in Kashan. The research findings showed that urban planning criteria and indicators play a significant role in tourism sustainable development of Kashan city according to statistical analyses of more than half of the managers and experts (68%). The substantial role of urban instrumentations and conveniences in urban tourism sustainability development is related to the role of alternative instrumentation in urban tourism sustainable development. Majority of the respondents (56%) evaluated its influence as high and noteworthy. Generally, the studies showed that the inappropriate function of urban management and planning in indicators as encouraging the private sector to invest in various parts of tourism, training and applying connoisseurs and specialists in tourism field, higher incorporation of people to provide and accomplish the schedule associated with the tourism issue. The function shows an inattention to the factors as stabilization in policy making, decentralization, social justice, equivalence and enjoying. On the other side, evaluation of the situation of urban instrumentation and conveniences from the point of view of tourists showed that urban tourism attractions in Kashan lacks mandatory conveniences as a lot of instrumentations and urban facilities including residential and welfare services and instrumentations, sportive and recreational facilities, urban framework structure, parking, entertainment services, transportation system, communication systems and traffic for tourists can be satisfied. Accordingly, a plan should be scheduled in terms of Kashan sustainability development principles to generate and reinforce the necessary substructures, instrumentations and facilities in the course of tourism development.

Keywords: Sustainable development, urban tourism, urban planning, Kashan city.

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Analysis of Explanatory Components of Knowledge-Based Urban Governance, a Study in Tabriz Metropolis

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Extended Abstract

Introduction

The world is steadily transforming into urban places. Researchers have therefore focused their attention on the growing complexities of cities and thus urban policymakers need to design new strategies to enhance cities performance and sustainability. Hence, many managers have chosen cities to be smart, creative and knowledge-based. In this regard, the importance of applying knowledge management to organizations is quite clear and unquestionable. In the field of urban management, urban governance is a new approach that can provide new solutions to the problems of cities by integrating the knowledge-based components, especially in Tabriz metropolis. In line with these concepts, knowledge-based urban governance can help to solve urban problems in all aspects. For this purpose, the purpose of this present study is to analyze the realization of the knowledge-based urban governance in urban management of Tabriz metropolis for two sub-goals of evaluating the priority of the application of knowledge base urban governance indicators as well as forecasting the realization of urban governance approach through these indicators in management of the city.

Methodology

The current study is a descriptive-analytical research with practical targets. In order to collect the descriptive data, the document method referring to the valid theoretical reference has been used and the survey method with questionnaire tool has been used for the analytical part. For this purpose, opinions of 50 specialists have been collected and weighted in line with the research explanatory variables through the Delphi method. Multi-criteria Decision Making Model (FTOPSIS) has been utilized in order to reach the planning priorities for the application of knowledge-based urban governance in Tabriz urban management. At the same time, predicting the realization of knowledge based urban governance through its explanatory components has been conducted by Discriminant Analysis model.

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Results and discussion

The results of this study show that the strengths and weaknesses of knowledge-based urban governance indices for its realization in Tabriz urban management can be useful for prioritizing them. The "knowledge creation" index is the most important indicator in this regard. In fact, the metropolitan government of Tabriz needs some form of policy to produce its specific knowledge in terms of urbanization. Policy-making means the formulation of theoretical and macro goals and strategies that provide practical solutions. This can be executed through some practices including creation of models based on new science and techniques to facilitate the awareness of stakeholders and citizens in the Tabriz metropolis to understand the developments, creating knowledge-based cores to produce knowledge-based structural models and frameworks for clarifying the information and communication process in urban management; the production of knowledge-based systems to teach citizens to participate in solving problems, challenges and urban development plans, and ultimately the production of flexible communication and information structures between urban managers and policymakers with other institutions in order to realize integrated urban management. Indeed, the importance of this issue is the precedence of knowledge production to its application and dissemination that should be noticed through mentioned indexes in Tabriz. The structure of urban management in the cities of our country and accordingly Tabriz metropolis is based on traditional and centralized structure according to the theoretical occurrence of knowledge associated with short-term urban development plans. However, in the developed countries, this process is moving towards making metropolitan management knowledgeable through macro-regional governance. The next point, which is based on the prediction of the knowledge-based urban governance, is the desirable status of "updating and classifying knowledge" in the field of urban management in the Tabriz metropolis. This could be due to the progress made in this area and the use of new tools in this regard but what underscores the weakness of this process is the mismatch of the identified priority for Tabriz metropolis in achieving knowledge-based urban governance to generate knowledge and create knowledge content production bases. Urban management in Tabriz metropolitan area seems to be focused on pre-prepared knowledge storage and accumulation And even disseminating it and using it to generate new content has no place in the face of urban challenges. This highlights the necessity of reforming the existing trend through the transition from knowledge consumerism to a vehicle for knowledge production related to the goals and prospects of urban development.

Conclusion

Among the most important challenges of urban management in developing countries and, consequently, in our country, there are the centralization of decision-making and policy-making, following traditional outdated approaches, the functional fragmentation of power holders, the lack of goodwill for Institutionalizing new managerial and planning approaches to urban management and not trying to defeat the dominance of top-down process of defining, explaining, and implementing programs and policies. Therefore, urban governance approach, as one of the newest approaches in the urban management process of the early 90s of the twentieth century, promises to share and cycle decision-making between guided management, civil society and the private sector, can improve its efficiency by applying knowledge management and provide rational and sustainable solutions to urban problems. In the same direction, the results of the research showed that for applying urban knowledge-based governance in Tabriz metropolitan management, the status of all explanatory indicators except “Creating knowledge-based models and contexts to inform urban laws and regulations to citizens and other urban stakeholders ” and “Adopting an approach to employ human resources familiar with the process of classifying, storing and updating urban development-related knowledge” has fundamental weaknesses which were identified through the prioritization of the indicators. Predicting the Knowledge Based Urban Governance Process through Discriminant Analyze Model, given these Indicators in the Tabriz Urban Management Process, also did not result in an acceptable

prediction. Although "Knowledge Update and Classification" index is more important than any other indicator in predicting the realization of knowledge based urban governance approach in Tabriz urban management process, this is less than half of what is considered in the Discriminant Analyze Model as the basis for overall prediction. Therefore, it can be deduced that in order to realize the knowledge-based urban management in Tabriz, would be a top priority to set the conditions for the achievement of its indicators, especially the "knowledge utilization" index, which in the present study also had the lowest scores from the experts' point of view.

Keywords: Urban governance, knowledge base development, knowledge base governance, Tabriz.

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Evaluation of Different Scenarios of Urban Spatial Distribution in Order to Reduce Traffic Volume (Case Study: Educational Applications in Kashan)

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Extended Abstract

Introduction

Today, due to the rapid growth of urbanization, the mismatch of today's streets with the needs of the population, the placement of crowded uses on the edge of city streets and placement of misplaced applications together, has caused traffic congestion in cities. The traffic phenomenon is one of the major problems in most-large cities, and even medium and small. This is one of the social problems of today's societies in different cities. The city center of Kashan attracts a large crowd to the city center due to the old market, and monuments, schools, busy streets, commercial, educational, and health amenities. It can also cause severe traffic in this area. Therefore, the need to pay attention to this problem, and the need to redistribute the spatial distribution of population-absorbing applications, is necessary. This study examines the role of land use, urban traffic development, in the central part of Kashan, and the re-distribution of spatial uses, and identifies the relationship between the distribution of educational, therapeutic, and urban traffic usage.

Methodology

The research is conducted by descriptive, analytical and applied method. Indicators of the research are including compatibility, comfort, utility, efficiency, health and safety. The required information was collected through library, documents, expert interviews, as well as referrals to the offices. Then, the data was prepared to enter the GIS software. For data analysis, the GIS software and the k-means algorithm were used.

Results and discussion

Spatial Redistribution Scenario for the Educational user is: the primary school at a minimum operating range of 4 minutes, in the whole city, covers an area of 42703.40 hectares, covers the city's coverage. The primary school has coverage of 55232.34 hectares with a maximum access time of 5 minutes, in the city center. While the standard 5-minute standard service for this

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number of schools is about 103573.22 hectares. The middle school, located in the city of Kashan, covers a surface area of 81409.00 hectares in a 6 minute working radius. If, taking into account the standard operating range of 6 minutes, this school can cover a total of 278619.37 hectares in urban areas. The middle school covers a total area of 89176.01 hectares in the city of Kashan at a maximum radius of 7 minutes. In the case of a standard 7-minute radius, and the number of schools distributed in the city of Kashan, an area of 382,355.92 hectares, the city can be covered by middle school services in a maximum radius of 7 minutes. Users of high school schools service the city at a service life of at least 8 minutes, with an area of 322279.75 hectares. If for this city high school, according to the standard radius of 8 minutes, the area of 642272.75 hectares is suitable for high school. The high school in the city, within a radius of access of up to 10 minutes, covers an area of 104413.67 hectares. If for this high school, at the city level, the maximum range of high school access is 526671.19 hectares, it can be served by these schools at the city level. Thus, the school high school services are ranged across the city at a maximum radius of 10 minutes.

Spatial Redistribution Scenario for the Therapeutic Usage is: Therapeutic use in the minimum accessible radius 7 minutes, at the city level, covers an area of 75221.46 hectares of the city. In this number of therapeutic users at the city level for the radius of access, can provide a minimum of 79850.06 hectares of the city. Therapeutic use in a radius of access of up to 8 minutes at the city level covers an area of 506296.19 hectares of the city. If the number of therapeutic users in the city is located for a radius of access of at least 92736.14 hectares, it can serve the city level. Therefore, the area of urban health care services has an overlap in the city.

Conclusion

In the present study, in order to re-distribute the studied applications, the scenario used by the k-means algorithm reduced significantly the traffic surplus. This surplus traffic is due to the overlapping of service utilities in the pursuit of non-observance of the standard operating range when locating them and distributing their clustering, especially in the city center. In this scenario, with the re-distribution of the applications under study at a minimum radius of access to the primary school, a reduction can be observed about 16.14% at a maximum radius of access of 17.99%, the minimum radius of access to high school is 17.22%, and at the maximum accessible radius of 1.31%, at the minimum radius of school access 7.32 and at the maximum Access radius was 6.67%; in treatment at a minimum radius of access, 31.51% of urban traffic.

Keywords: Urban land use; urban traffic; open space distribution; k-means algorithm.

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Accountability of Urban Spaces to the Disabled Person's Needs (Case Study: Ferdowsi Street in Sanandaj)

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Extended abstract

Introduction

Nowadays, making urban spaces appropriate and improving the accessibility and mobility of persons with disabilities have an important role in urban planning and design. The individuals with physical disability have the image of the city, and not able to establish normal relations with others. Disabled persons are not specific and distinctive, but they want a very common communication just like healthy persons in social relationships. But the important thing is that urban public spaces for the traffic of this group are not appropriate. Because the condition of our cities, streets, sidewalks, public places, welfare spaces, health services, urban transportation systems, etc., usability does not provide it for the target group. Accordingly, the evaluation of urban public spaces in order to meet the needs of the disabled and to prevent their isolation, is one of the requirements of every society especially our society, which has been faced with a large number of persons with disabilities after the imposed war in Iran.

Methodology

The type of this research in terms of target is applied and its methodology is analytic-descriptive. For collecting the data, the library and survey method were used. By specifying the related parameters and variables, the questions of questionnaire were written and the questionnaire was distributed among the samples of research. The population of this study includes all physically disabled persons in Sanandaj city. The total number of physically disabled persons in Sanandaj in 2016 was 1818 people. These people have been examined in three groups of disabled with leg defects, amputation of leg and trunk defects. Using Cochran sampling method with standard division of 5% and a confidence coefficient of 95 percentages, a sample of the total population was estimated 317 people. To select the samples, stratified sampling method was used. In this study, each of the three groups (leg defects, amputation of leg and trunk defects) was considered as the study classes. The sampling method for all of the classes was simple random sampling method. Then for data analysis, testing methods such as T test and linear regression by SPSS software were used.

Results and discussion

In this study, in order to make urban public spaces appropriate, we used five main indicators including sidewalks, communication bridges and accesses, urban transport, equipment and furniture as well as buildings and public places. In the index of sidewalks, the main variables are longitudinal and transverse slope of the pavements, existence of stairs on the pavement,

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existence of building materials in pavement, existence of inappropriate flooring on the pavement and etc.. The factors related to communication bridges and accesses index are in the variables such as lack of bridge between the sidewalk and the street in a long way, low width of communication bridges, high Slope of communication bridges, disconnection of the communication bridge with the street, existence of a great distance between the bridges fences and etc.. For urban transport system index, we also used the variables including inappropriate bus and taxi stations, difference in level between the station and vehicles, inappropriate doors of the public vehicles for enter of the disabled with wheelchair and etc.. In the following, for evaluation of index of urban equipment and furniture, we also used variables including high altitude of signs and advertising in the city and the lack of perspective of the person sitting, inappropriate installation of ATM and their high altitudes, inappropriate width and lack of suitable ramps, Unusable rest benches in public places and spaces for physically disabled and etc., were used. Finally, to assess of index of buildings and public places, variables such as existence of stairs between the street and the entrance of public buildings, lack of ramp (slope level) at the entrance of buildings and public places, inappropriate slope of ramps in buildings and public places and so on were used. As mentioned above, in order to survey and evaluation of these indicators, analyzing methods such as T test and linear regression were employed.

Conclusion

This study aimed to evaluate the evaluation of making appropriate use of urban public spaces for access of disabled persons in Ferdowsi Street in Sanandaj, as the case study. The results of the study using T-test and comparison of means shows that all indices were lower than the average standard, but nevertheless it is the highest mean obtained for the index of urban furniture (2/23) and the lowest mean for the public transport system index (1/1). None of the evaluated spaces in study area in terms of adaptation for the disabled are not in the favorable condition. Thus, the transportation system and public places and buildings had the most severe state of dissatisfaction and indices of sidewalks, communication bridges and urban furniture and equipment are ranked next. This has led to the isolation and lack of participation of disabled persons in urban social activities. This was confirmed by the use of regression analysis (correlation coefficient 0.641). Eliminating these barriers requires measures that ensure greater participation of disabled persons in their community's affairs. In order to make urban spaces appropriate for access of disabled persons and attention to their needs, the following suggestions are presented:

- organizing vendors and determine the specific location for them.
- filling of the holes and post and the heights to prevent of the overthrow of persons with the wheelchair.
- Makeing appropriate and standardizing of connecting bridges between the sidewalk and the street.
- Makeing appropriate of urban public transportation for the disabled persons.

Keywords: Responsive urban spaces, disabled persons, Sanandaj city.

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Analysis of the Role of Visual Comfort Variables and Their Relation with the Sense of Place (A Case Study: Yazd, Iran)

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Extended Abstract

Introduction

Understanding physical elements, tangible characteristics of the environment, their meanings and messages is of importance in considering the relationship between man and environment. Based on what was mentioned, much attention should be given to the sense of place, the place attachment, and the visual comfort level within the study area when it comes to achieving the concepts and different aspects of sustainable visual comfort and sense of place. In light of this, concepts such as visual comfort and sense of place are of essential elements and components in urban spaces. There is a need to determine their two-way relationship according to the type and manner of looking and understanding the appearance and function of the elements of the urban structure and the magnitude of the effects of each constructive component in the creation and construction of each other. Given the importance of this issue, great emphasis should be placed on it from the perspective of environmental psychology in architecture. For this purpose, after evaluating the indicators of visual comfort and sense of place, this research attempted to identify the level of relationship between the variables of visual comfort, including the effects of color and light, facade and architecture, etc., and the variables of sense of place, including security, readability, sense of belonging, etc. in Yazd. On this basis, the study seeks to answer the following two questions: What is the status Yazd in the indicators of visual comfort and sense of place? What is the relationship between visual comfort and the sense of place?

Methodology

This study is an applied research, and it is a descriptive and survey study in terms of method and nature. The methods of data collection were surveys, observations, and document analysis. A simple random sampling method was used to obtain a representative sample of the study area.

Results and discussion

To measure and evaluate the indicators of visual comfort and their relation with the sense of place in Yazd city, we used the ranking technique of MAPPAC and the Correlation Coefficient of phi and Cramer's V. According to the results, the respondents pointed out that factors such as the architectural quality of buildings in the first place, and then lighting quality, the quality of the facade of buildings, the color, the quality of pavements, the extensions of the buildings and finally the vegetation are the most significant factor affecting the visual comfort of people. This ranking reflects the unique tourism features of Yazd, extraordinary architectures, wind towers, minarets, domes, and old brick buildings. Moreover, the tissue and the specific architecture

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make the city one of the most prominent examples of architecture in a warm and dry climate in the world. The other features of this city are its suitability to the needs and climate-cultural conditions of people, besides the special beauty of its architecture.

In the center of each neighborhood, there are usually baths, bazaars, water reservoirs, mosques, Hussainias, lards, small workshops, waterways (to access the Qantas), many of which are still alive. Meanwhile, the city is grappling with shortages of green spaces and water scarcity due to its location in a dry desert area. Furthermore, sense of place, social security, existence of public spaces, social interactions, readability, quality of urban furniture, the safety of physical elements, respectively, are the most important factors affecting the sense of place. Therefore, it can be concluded that Yazd has preserved the culture and many of its traditional elements to this day. As a result, it consists of the paradox of tradition and modernity.

According to the Correlation Coefficient of Phi and Cramer's V, it was revealed that there is a significant relationship between visual comfort variables and the variables of sense of belonging in Yazd (at 95% level). Therefore, it can be suggested that the more visual comfort variables, the more the sense of place is affected and vice versa.

Conclusion

According to the previous studies and the findings of the current study, the results showed some facts about the issue. In the surveys, 400 people were questioned, each of which had responses according to their different condition. According to the technique of MAPPAC, interviewees suggested that the indicator of the architectural quality of buildings has the most weight, it is the most influential factor affecting the visual comfort of people while the index of vegetation because of its relative lowest weight is considered as the least influential factor. Furthermore, the higher weight of social security has made it as the primary factor affecting the sense of place while the lowest weight of the safety of the physical elements has made it as the least significant factor affecting people's sense of place attachment.

In the Correlation Coefficient of Phi and Cramer's V, it emerged that there is a relation between visual comfort and sense of place due to a correlation between their constructive components. The intensity of this relationship can be determined by identifying the extent of the relation between the constructive components of visual comfort, including the effects of color and light, facade and the architecture of the buildings and etc. and the elements of sense of place, including security, readability, sense of belonging.

However, the amount of this correlation and its intensity vary from one variable to another, and there is no complete correlation (a correlation coefficient equal to one) between the two variables. Also, among the constructive elements of the two former concepts, the variables of suitable urban furniture, architectural quality, and urban building facades had the most relationships with visual comfort and sense of place concepts in Yazd city.

Keywords: Visual comfort, Sense of place, Technique of MAPPAC, Yazd city.

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Application of Scenario Based SLEUTH Model for Urban Growth Simulation (Case Study: Tabriz Metropolitan Area)

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Extended Abstract

Introduction

In recent decades, more than half of the world population have settled in cities, and ongoing increase of the population has led to the physical urban expansion and losing of environmental resources of the earth planet. The physical development of cities has unpleasant effects on the urban environment, and continuing of this non-ecological development trend can be catastrophic for the citizens of vast metropolitan areas. In developing countries, like Iran, over the last two decades, vast areas of natural recourses and biodiversity capacity have has disappeared by uncontrolled development of metropolis. This led to adverse changes such as environmental pollution, biodiversity reduction, and urban marginalization. Therefore urban development must be evaluated using suitable models to avoid environment quality decreasing, land resources, and ecosystems. The Present study aims is to investigate Tabriz metropolis urban growth modeling in the three past decades and to forecast new urban growth trends .

Methodology

This research from the methodology aspect is the descriptive-analytic and categorized in the development - applied type and required information was collected using digital and analog data and field surveys observations .

Sleuth model in Cygwin environment was applied in this study to model urban growth of the Tabriz metropolis. This research used the following materials and software.

Topographic maps in the scale 1/50000 (received from national cartographic center)

Image processing software:

IDRISI Selva

ERDAS IMAGINE

ENVI

Processing of Landsat satellite images (downloaded from USGS website) to perform the following operations:

-Preprocessing of satellite data including Landsat image radiometric correction, image mosaic, image subset…

-Image processing and extraction of land use map

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-Survey of urban area changes in the study area in the 1984-2016 period.

Results and discussion

The variables used in this study are including slope, transportation system, land use; exclusion acquired using Landsat satellite images. The Sleuth Urban Growth Model was calibrated for historical data generated from Landsat satellite imagery for the years 1993-2016 in three phases, and the growth coefficients generated by OSM Program were generated Program for next steps. The five urban growth coefficients' values for dispersion, breed, spread, and slope; road gravity was 26, 40, 38, 76, and 89 in 2016 respectively. The acquired coefficients indicated that according to historical data, urban growth was more affected by road gravity factor compared to other cities where slope resistance has little effect on urban development; the topography is an essential factor in the limitation of urban development of Tabriz. Future urban growth trends were predicted by 2040 by designing three scenarios that are historical, mild strict environmental and high stringent Environmental scenarios for Tabriz metropolis.

Conclusion

The results show that if the urban growth continues unplanned by 2040, the growth will occur about 15.5 percent in the region. This study demonstrates the success of the Sleuth model in the calculating of calibration Coefficient at Tabriz using OSM based on historical data from 1993-2016. The coefficients extracted from the calibration process are comparable to the values of other research coefficients based on the Sleuth model. Historical growth scenario has shown that urban development is not limited. From 2016 to 2040, the city will grow by approximately 15.5 percent; in other words, 3241 hectares will be added to Tabriz urban land. This scenario shows the highest increase in urban development, which would result in the loss of large amounts of the natural resource .

The temperate environmental scenario showed the lowest increase compared to the first scenario, which resulted in 1751 hectares of natural resources conservation and indicating an increase of 7.7% in the urban area. According to the predictions made in this study, the metropolitan will develop by about 0 percent under the strict Environmental scenario, and not only conserve much more natural resources than the second scenario but also lead to compact urbanization that facilitates service-level capacity for urban managers. Based on the findings, the second scenario is more suitable and preferable to Tabriz urban development trend than the first and third scenarios. The values of the appropriate coefficients obtained for each indicator of the model show the effectiveness of the sleuth model for predicting urban growth and produced three scenarios is useful for evaluating the consequences of future urban growth. These scenarios provide different growth strategies for planners. The historical growth scenario shows that there is no limit to the development of the city, and Tabriz will have expanded by around 15.5 percent from 2016 to 2040. Among these three scenarios, the second scenario offers with the highest level of environmental protection and provides a small increase for urban land development relatively, which is the most desired result for urban development of Tabriz metropolis. Overall, the use of practical factors in modeling urban development indicates that Tabriz's urban growth process has been inappropriate due to the loss of valuable lands such as high-quality gardens and lands.

The Sleuth model showed the urban growth characteristics in the Tabriz metropolis and could predict future urban development. The model seems to have a strong potential in urban planning research, enabling municipal managers to understand the nature of urban development and make necessary restrictions for distinct areas, as well as to determine their reactions in a various urban future growth scenario. The findings also showed that the use of GIS is essential for preparing input data, model calibration, and growth impact assessment, and there is a useful link between GIS and CA in implementing the Sleuth model. The model is also used as a support tool for urban managers to realize the consequences of possible actions.

Keywords: Modeling, Physical Development, Urban Management, Tabriz, Sleuth.

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Designing and Developing a Citizen-Oriented Advertisement System Based on the Concept of Geographic Fence (Geofence)

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Extended Abstract

Introduction

Conventional media and environment advertising tools (including radio and television, websites, billboards, and writings on buildings), due to their limitations such as fixed location and time, high cost, and damaging effects on urban landscape, are not location-oriented and, in other words, they are not offered based on the location of the people. Therefore, they have less effectiveness and flexibility. Advertising and marketing based on the location and position of the user is considered as a new and practical way of managing urban advertising. Extensive efforts have been made in the use of Internet-based technologies such as social networks, digital marketing (Barnes, 2002: 401), location-based marketing (Brener and Kumar, 2012: 4) and geographical Information systems (GIS) (Azaz, 2011: 299) has been made to increase the impact of advertising and reduce the negative effects of urban physical advertising. The geographic fence or Geofence is a location-based service, which usually aims to inform the occurrence of an event when a person enters a specified area. Geofences can play an important role in providing location-based information to citizens in different areas. The Geofence in the business sector also plays an important role for targeted and accurate advertising, so that when customers enter a certain distance from a restaurant, store, etc., they receive targeted and accurate ads for their interests and needs. Some of the apps that have used the Geofence to inform citizens, including the PlaceCast app, use the geographic fence to send messages and notifications to potential customers. ShopKick is also a similar program that sends special discounts and rewards when customers enter the geographical area of the store and uses a combination of GPS, WiFi and other sensors for accurate location tracking. CellSafety is a program that enables parents to be aware of their children entering and leaving a particular location. This research tries to use a concept of geographic fence (Geofence) and GIS tools to create a citizen-oriented and location-based service called Customer Finder in order to display advertisements on customers' mobile phones based on their spatial and temporal in urban environments. Through this system, business owners can provide advertisements to their potential customers at a specific place and time. The concept of a geographic fence can link the physical and virtual environment of citizens. This research is presented in three sections. In the first part of the theoretical basis, the concepts of geobusiness and geomarketing, location-based services and geographic fences (Geofence) investigated. In the second part, implementation of

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the advertising system based on the geographical fence expressed and in the final section of the research, results and conclusion presented.

Methodology

The system is divided into three parts including site management, business owners (or stores), and users (or customers). Site administration, in addition to managing the site, is responsible for creating, updating and changing the geographic fence (Geofence) of the stores. Business owners can enter their ads in the system with a specific time and related Geofence, and customers receive messages and notices such as ads and discounts when they enter the Geofence range. The geo-based advertising system is programmed in a modular way and consists of a database, an Android application, and a web application. The system consists of five modules including selection, location, calendar, computational, display guides and databases. The advertising system takes the contents of the advertising database and, based on the selection module; it displays the advertisement on the mobile client. The selection module chooses ads that have the right spatial and temporal conditions. The location module receives the coordinate location of the user by the phone's GPS. The customer's location can be sent to the server every 10 seconds or every 5 meters, and received by the location module. The Geofence is based on the server side determined by the site management for each store. The parameters for determining the range of the Geofence include the location of the store and a radius or range (distance from the stores), which is assumed to be 400 meters by default. The time dimension determines which adverts of each store can be activated at any time and will be disabled on other dates. The owner of the business, for example, the storeowner, determines the time, in contrast to the Geofence. In the computing module, the number of advertisements sent to each user is logged. The important thing is that each ad should be sent to each customer only once and to avoid duplicate advertisements. It can be said that the computational module that stores statistical information and history of sent messages plays a significant role in the system, and if the ad has already been sent to the customer, it will prevent it from retransmission.

Results and discussion

To develop web pages for managers and business owners or stores, we used JavaScript, PHP, JQuery and Openlayer from JavaScript programming tools. The web address at http://www.geoadv.xyz is accessible online. As stated above, the site management task involves creating, deleting, or modifying the user and the location of the stores on the map, the responsibility of the business owners or stores, including the creation, deletion, or editing of the advertisements along with determine the activation time. The store page provides information and location details of the stores using Google Maps. Site administration in addition to creating a page for each store, also determines the store location on the map. By default, the radius of 400 meters considered, as a Geofence for all stores, so all customers who enter the 400-meter radius of these stores will receive ads for them. The number of people who received the ad for the stores was specified (users who viewed 1 person). Ability to remove or modify the ad is also located on the store page. In the design of the user side (customers), Android application development tools and libraries, such as the Java JDK, Android SDK, Notepad ++, and Genymotion simulator, were used. The graphical user interface of the mobile application includes the menu screen, the user registration screen (if the user first installs the application on their phone, it should log the basic information including the email, contact number, username and password in the system), and the page of the ads viewed with its account manager.

The System Usability Scale (SUS) used to measure user satisfaction and system usability, which used by many researchers for the applicability of a variety of technology products and websites (Şengel, 2013: 3248). Eighteen postgraduate students of Tehran University selected as clients. In addition, four stores selected along the customer traffic route (Laleh Park to Kooy dormitory), which each had four advertisements per day with different items such as food, clothing, and technology and ... within 4 days. Overall, the average SUS score for clients is

70%, which indicates a high level of satisfaction.

Conclusion

In this research, a citizen-oriented advertising system is based on the concept of (Geofence) and GIS tools. The system was designed with the aim of displaying ads on customers' mobile phones based on their geographic and temporal location in urban environment (District 6 of Tehran). In addition, the usability and satisfaction of the system measured by the System Usability Scale (SUS), which achieved over 70% customer satisfaction. Proximity or local marketing using short-range wireless technology such as Bluetooth, WiFi, NFC, RFID and Bacon are relatively expensive compared to the proposed system and do not establish effective communication between customers and business owners. By tracking customers through mobile devices, business owners can send targeted ads to clients based on a precise timing and user placement within a given geographic range that is one of the key pillars of e-commerce.

Keywords: Geographic fence (Geofence), Targeted advertising, Location-based services, Citizen-oriented GIS.

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Stability Level in the Informal Settlements of the Ardabil City by the Sustainability Barometer Model

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Extended Abstract

Introduction

The most important reflection of contemporary urbanization is the emergence and development of vulnerable neighborhoods (informal settlements), in urban center or around the cities. These settlements can be seen as forgotten and unplanned and unplanned settlement than any other urban settlement that is considered stable in terms of sustainability. To evaluate the stability of the four dimensions of sustainability (social - cultural, economic, environmental and physical) dimensions is systematic. Therefore, the purpose of this study is analysis and classification of the stability status of the informal settlements of the ardabil city and their prioritization of future planning.

Methodology

The present study is a descriptive - analytical research and applicable in terms of purpose. The necessary data is collected according to the nature of the problem and the purpose of the research in the form of field studies and library - documents. To assess the stability of the localities, four dimensions (social - cultural, economic, environmental and physical) were selected. The population of research constitutes the citizens of informal settlements (15 neighborhoods) of the Ardabil city. All data processing steps were performed with software (Excel, SPSS) and finally, we measured and evaluated the unreliability of the informal settlements in Ardebil using a barometric model. ArcGIS software was used to show the level of stability of target locations on the map.

Results and discussion

The present study is one side with the results of research findings of researchers such as Blen (2006) that the barometer is the best instrument for measurement of sustainability. Therefore, the results of the research about stability show that the criterion for measuring the stability of the four dimensions is stability. Among the different models used to measure the stability situation, the stability Barometer model can also reflect a better reality of the existing state of mining by providing the possibility of measuring the gap between human well-being and ecosystem welfare.

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Conclusion

According to the results of the implementation of the model, the Salman abad neighborhood (0/501) has a moderate stability and then KazemAbad locality (0.344), Islamabad (300 / 300) in the state of potential instability and other localities have been in unstable state. Overall, the target neighborhoods are at a very low level in terms of the overall average ecosystem welfare (0.231) and human wellbeing (0.249). Therefore, development plans are essential to the strengths and weaknesses of each neighborhood and based on the stability levels.

Keywords: stability measurement, stability barometer, instability level, informal settlements, Ardebil.

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The Temporal- Spatial Measurement of Urmia Urban Space with Emphasis on Urban Density Indices

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Extended abstract

Introduction

Density is one of the important factors in urban studies, and one of the most important elements of city formation. It has a decisive effect on all aspects of the city and measured by specific indicators in urban planning. The density is very important in drawing the city physical and social status, and its monitoring is also important in the urban development analysis. This research purpose is descriptive – analytical, and is about changes and the spatial-temporal distribution evaluation of urban Density indices in Urmia city, using data and statistical methods during 1996- 2016.

Urmia city experienced widespread physical growth in recent years, and consequently caused environmental hazards and the city instability. The requirement of providing suitable urban services for inhabitants of the city ,that will be made possible through proper planning of urban congestion and suitable loading, the necessity of analysis of changes in urban densities, showed more attention has been paid to the urban densities distribution for planning to reach the balance in the compressive loading. In order to plan for achieving the equilibrium in the compressive loading ,it has more demonstrated that these indices distribution contributed to the balancing of these indices, in order to distribute them into a suitable services and urban infrastructure distribution. The population density ,which indicates the relationship between the people number and the space under their occupation ,is based on two types: first Net population density, and second gross population density. Gross Residential Density is the best known city's development indicator ,and it observes the amount of land that was used for each individual, and measures the amount of land production, and also measures the housing production amount, too.This type of density also is based on two types ,which are located in two forms as recognized as Gross Residential Density and Net Residential Density. The Building Density is the area under construction ratio (in all classes) to the total residential land, which is conveyed in percentage. The Building Density is usually the population density planners and practical language. The FAR also indicates the ratio of floor Area to ground surface. Statistical models can be used for the analysis and measurement of the aggregation degree or the compressive and distribution of a city ratio and they are as following: the Moran and Gray coefficient and the

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various indices that determine the indicators status based on spatial construction.

Methodology

This research is applied, and its research method is descriptive - analytic. The statistical population is 5 regions of the Urmia city. Data were obtained from the official census statistics of population and housing in 1996, 2006, and 2016 after the extraction from different sources in the GIS software. The process of change and their behavior were measured by using SPSS software, and the mean, amplitude, standard deviation, skewness, and kurtosis statistical data were also measured.

Results and discussion

In the GRD index, the district 4 always has the highest value, and district 2 has the highest value in the NRD. The rate of increase in recent decade has been less than that of other regions, and district 1 has the highest increase from 180 to 247 people per hectare in the recent decade. In the Building Density index, has the lowest value for district 2 and the highest in district 1. This indicated that the construction intensity and the ability to attract more population are of greater significance. The district 1 has the highest value and district 4 has the lowest in the capitation floor Area Index. This indicated the difference between the areas of these two regions.

This study show that the Moran's coefficient has completely distinct pattern of random and dispersion on the cluster in all indices. The net residential capital with a coefficient of - 0.04 in 1996 and 0.4 in 2016 was the highest mutation rate from the dispersed. The Geary correlation has been accompanied with the overall decline, but the highest decrease in coefficient or compression in the population, residential units and infrastructure were ranged from 0.82 to 1.28 and the lowest compression has reduction about0.15 in the area. The Williamson correlation was the most inequality in the area, with population, number of households, structure, and other indices. It has more balanced distribution. The highest inequality in the building density and FAR was in district 2and the infrastructure structure in zone ۴ and in other indicators is the zone 5 because it was more unbalanced and has the most inequality in distribution. The entropy of the indices displays that the city has witnessed the distribution pattern in the city area and residential area with increasing coefficient to 1.57, in the residential density. The coefficients of FAR and Building density are expressed by the polarity and imbalance in distribution.

Conclusion

In the past 20 years in Urima city, the values of all indices had increasing, and moving towards the limited compression by using the significant models, but inequality and lack of equivalence in most indicators distribution, and their distribution in city. This is increasing inequality polar distribution explanation in the city. Consequently, district 1 and 2 are the most populated regions in the city, and the first one from the point of building density and infrastructure. The second one from the point of net population density amongst the city's districts is transformation process of the city structure in last decades.

Keywords: Density, Spatial distribution, Statistical models **,**Urmia city**.**

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