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Investigating the Capacity of Upgrading the urban density by analyzing the spatial distribution using multivariate decision-making techniques (A case study of Urumia city)

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Abstract

Density as one of the dimensions of city construction is an important factor in understanding how the city works and changes. in the case of the study.the city of urmia has been developing a large horizontal expansion in the recent decades. The purpose of this research is to evaluate the process of change in the types of densities in Urmia city and level of implementation of detailed plan in the field of building density. in this regard, at first, the status of different urban densities in different periods and the degree of fulfillment of a detailed plan was analyzed and Then, with the introduction of effective indicators on determination of real building density, city land capacity was determined and modeled with the Multi-Criteria Evaluation and in GIS. the density indicators in the city are distributed as unbalanced in the urban regions and 78% of the building densities predicted by the detailed plan were not realized. the result of modeling the capacity of building density Suggests unused to 68 % of the city's land capacity and The distance is far to favorable conditions, especially in regions 2,3 and 5of the city. Comparison of the results of the research model with the existing condition of building density in Urmia Suggests The movement of the density profile from higher than the density in the central and middle regions of the city towards the medium and lower density in the city's margins and creates a pyramid mode in the city.

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Introduction

one of the components of city construction is density, determination of urban density is unplanned and often has been summarized in personal desires needs and or financial ability of the applicants and manufacturers but the emergence of new problems such as land limitation and population growth has become a new topic in urbanism, the requirement of building density is to have the capacity to accept infrastructure and other economic ,social and cultural potential .of the urmia city has a history of carrying out three Master plans (in 1976,1989, 2009) and two detailed plan(in years1978 , 1994).this study evaluates the density of the city and identify the factors affecting the determination of real building density , potential and density loading capacity of urmia city by using Multi-Criteria Evaluation and gis are modeled

Materials and Methods

this research is based on the purpose of the kind of applied research and according to the method of work ,it is of descriptive - analytical nature .the statistical population of this research is urmia city and Extractad with gathering information through library studies, The results of official census data ,Urban development plans and maps of the existing situation and .Their process of change was analysed and after determining the indices of the determination of building density and Compilation of required data And complete the questionnaire,weighting and standardization of indicators based on multi - criteria Evaluation models and used by gis , Expert Choice 11 software in order to determine the loading capacity of the Building Density of the urmia city and its zoning.the final stage of this zoning is compared with the existing situation zones of the city and the difference of loads is specified

Results and Discussion

the study of the status of urban indices has been studied from ١٩٧٦ to ٢٠١٦ and in terms of the needs of the research .In these years ,the city's population has always been with a positive growth rate .So that over the course of ٤٠ years of the city population has grown ٤,٥times and It has a total area of / ٧ ,٧and the population density has increased from ١١٣ to ٦٥ per in hectare. This rate indicates that the growth of the city area is far more than population growth .It shows that the city has grown almost twice as many as the population increase.the population density of the urmia city has fallen from ١١٤to ٦٥ in ha to ٦٥ per hectare. that indicates horizontal expansion. The sheer population density has also risen from ٣٦٤ to ٢٦٠ people. It represents a decline in population per unit area of residential infrastructure .The level of the structure is falling down until,١٩٩٦ But since then ,the trend is increasing.The motion represents the compression towards the compression.Residential housing density ,from % ٦٣ in ,١٩٨٦ reached 95.5

%in.٢٠١٦ and the average number of classes comes from ١,٤ to1.٦٥ ,But the average area of a residential block with a decrease of the area from ٢٣١ to ٢١٥square meters.in the present situation ,the average number of classes in urmia city is About ١ / ٦٥ floor and the average level coefficient is 58033 % and the average Building density is .% ٩٦ / ٢٤.
By examining the feasibility of the ١٩٩٤detailed plan, all the different densities of building, in ٢٠١٧, There are only % ٥١ of the very low Density ranges % ٤٤ ,of the average density range % ١٥ ,of medium density and less than % ١ of the density range and about % ٢ of the apartment density limit , and in general ,only % ٢٢ of the density prediction has been achieved
in order to achieve optimal urban density indexes ١٣ ,indices are considered in three categories of service - social ,physical ,environmental ,and with analysis of ٢٠distributed questionnaires ,the mean correlation coefficient of indicators is 0.8 and the standard deviation of indicators is less than 0.1 , which indicates that their extracted weight is correct.
The results of the research show that 2% the city's area on the capacity of a very low building density capacity, 21% of city on average capacity,31%on average capacity,30% of city area on high capacity and١٦ %of city area in the capacity of building density is very high. Whereas ,in the existing case , 37% of Uploads in very low building density, % ٥٤on low density, % ٧ , in average density, % ١ in high density % ١ ,density is too high.the great distance to the desired state.In zones ٣ ,٢ and ٥ are more evident

Conclusions

Study of physical indices associated with urban density indicates the horizontal expansion of urmia city and the short growth of its building density ,and only ٢٢ % of the proposals detailed plan have been made . comparing the existing conditions and the research model indicates that ٦٨ %of the city's land capacity is idle .the results of the research model led to the movement of the density and gradient profile of the city to moderate and lower density of the city to moderate and lower density in the city margins , and the density of these areas in the city and the lower density of structures in the southern and western margins of the city is relative to the local land and maintenance of the city's pyramid statethe results of the research model led to the movement of the density and gradient profile of the city from increasing density in central and middle regions of the city to the middle and lower density on the outskirts of the city and the Slope of city density in a mild and sensible way and expresses the proportion of these areas across the city,and the rational state of the altitude,Less density of structures on the southern and western margins of the city relative to domestic landpreserving the city's pyramid state

Keywords: buildings density, Multi-Criteria Evaluation Model, Geographic Information System, Urmia City

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Analysising the accessibility to urban parks by an environmental justice approach

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Abstract
The purpose of this study is to analyze the status of urban parks enjoyment and accessibility in Eslamshahr, a city with a population of more than 540000 located in 12 Km southwest from Tehran. The research method is Comprative evaluation and we use descriptive statistics indexes such as per capita and covered land ratio, and accessibility measures based on minimum distance to the nearest park, and the park access areas. Finding showed that both per capita park lands (2.2 m2) and ratio of park lands are low (2.2 m2 and 1.3% respectively). There are also large disparities in spatial distribution of parks as more than 42% of the city's area, in which more than 29.5% of the population reside in, is not within parks access areas. This is while in the southern part of the city, access area of 10 parks are overlapped. In term of accessibility, district 4th of Eslamshahr municipality in south, has a more appropriate condition, so that half of its inhabitants reside in a maximum distance of 60 m from nearest park. In contrast, district 5th has only one park and the distance between most residents and the park is high. In order to move towards environmental justice, it is necessary to allocate more land to parks and construct and develop parks, especially in the central part and in the parts with no access to existing parks.

Introduction
Parks are urban public spaces that the need for them has been felt and be considered for cities since the era of industrialization and conducting populations in artificial spaces as cities. These unique spaces are valued for cities and people living in cities from different aspects. Investigating the status of access to parks and other recreational facilities is included in the environmental justice approach. Environmental justice has widespread meanings that almost all contribute to the fair distribution of environmental

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impacts, goods and services within and between generations as well as between people and the natural world. The difference in the accessibility of spatial units at different levels is one of the most important and useful indicators in the assessment of environmental justice. Based on this approach, it is necessary to cover the appropriate part of the city's areas with parks and that there has been a sufficient amount of parks in the city. Also, the distribution of these spaces in the city is important too. Hence nowadays planners and urban managers are paying more attention to developing and organizing of parks in urban environments. The purpose of this study is to analyze the status of urban parks enjoyment and accessibility in Eslamshahr, a city with a population of more than 540000 located in 12 Km southwest from Tehran (the capital of Iran).

Methodology

The research method is comparative evaluation and we use descriptive statistics indexes such as per capita and covered area ratio, and accessibility measures based on minimum distance to the nearest park, and the park access areas. First, the data on the location and area of the parks taken from the Parks and Greenfield of Eslamshahr Municipality was entered in Arc Map as a layer. The 2016 population blocks received from Iranian Statistical Center and the land use file of the study area were other data that entered in Arc Map. Then the buffers of the parks were drawn with radii as 220 m for neighborhood parks, 350 m for area parks, 650 m for regional parks and finally 750 m for urban parks and analysis was carried out on the basis on output information and maps.

Results and discussion

In Eslamshahr, there are a total of 132 parks with an area of 79.3 ha. 48 parks are neighborhoods with an area of 24.8 ha. There are also 76 area parks with an area of 29.2 ha, 4 regional parks with an area of 10.7 ha and 4 city parks with an area of 14.3 ha. About 1.28% of the urban lands are covered by parks and per capita of parks lands is 2.22. In terms of the above indicators, the 4th district of the municipality has better condition than other areas. In this area, 3.9 percent of the land is covered by parks, and per capita of park lands is 4.35 m2. In contrast, in the 5th district, only 0.03% of land is covered by parks and per capita of park lands is only 0.25 m2. About 58.1% of the city's surface is at least within the accessible area of one park. In 2nd district, 77.3% of lands are within the accessible area of the parks and in this regard, this district showed a better relative condition. Afterwards, districts 1th, 3th, and 4th are in better condition respectively. While in district 5th, only 7% of the area is within park access areas, and this district showed the worst condition in this regard. About 1/4 of the Eslamshahr area is only within the access area of 1 park, and in less than 1%, access area of 10 parks are overlapped and in over 85% of the study area lands, access area of 3 parks or less are overlapped. In terms of access to more of the parks, district 4th had

better relative condition. In the 26% of this district, access area of 2 parks or more and in the entire surface, utmost 10 park access areas were overlapped. While in districts 2th and 3th there were utmost 5 and in district 5th only 2 park access area overlapped. In the study area, half of the population lives at a distance of 150 m or less than the nearest park. More than 3/4, reside utmost 300 m and more than 90%, utmost 450 m far from nearest park. In district 4th, half the inhabitants can access to at least one park within a maximum distance of 60 m from their homes. While in district 1th, it is twice as much, and in districts 2th and 3th, there are distances of almost three times more than this to the nearest park for half of the residents.

Conclusion

The achievement of environmental justice requires that each city, in addition to having the proportional and standardized green spaces and the parks, achieve to an equitable distribution of parks in the city. The scarcity of green spaces and parks, which are usually cover major part of urban green spaces, is seen in almost all cities in Iran, especially in the cities of arid and semi-arid areas, and Eslamshahr is no exception. The standard per capita share of the park lands in Iran is stated to be 5 to 13 m2. The figure for Eslamshahr is much lower than this and the proportion of lands are used for parks is low too. Also, there are a lot of disparities in the spatial distribution of parks. As more than 40 percent of the city's area, resided roughly 29.5% of the population, is not within access area of parks. While in significant parts, especially in the south of the city, the access areas of parks are even overlapping up to ten. Therefore, in order to move towards environmental justice, it is necessary to allocate more land to parks and construct and develop parks, especially in the central part and in 42% of the city with no access to existing parks.

Keywords: Urban park, Access area, Buffer tools, Eslamshahr.

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The Effect of the Built Environment on Social Capital and Social Sustainability in Historical Fabric (The Case of Linked Neighborhoods to Bazar in Kerman Historical Fabric)

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Abstract
In the urban planning process, consideration of social issues is an inevitable and inseparable part of urban plans. Therefore, it is possible to examine and identify effective procedures on social concepts by determining the dimensions of social sustainability. Quality of life, social capital, and social sustainability are the key pillars of sustainable development which, from one hand, all of them have a deep link with the human and social dimensions of development and on the other hand they are closely interrelated. Lack of satisfaction from built environment quality, lack of positive interactions in cities, distrust, lack of tendency to participate among citizens have been overshadowed social capital and, consequently, social sustainability in the cities. This research aims to investigate the impact of the built environment on social capital and social sustainability indicators using structural equations in the historical neighborhood that linked to the Kerman Bazar. From the goal point of view, the research method is applied and developmental. The questionnaire and field study are the main data collection tools. 491 questionnaires were completed and analyzed by SPSS and AMOS. The results show there is a direct and meaningful relationship between the quality of the built environment and social capital and also there is a direct and indirect meaningful relationship with social sustainability through the role of mediating social capital. The results of structural equations modeling also demonstrate that by improving the quality of the built environment, the situation of social sustainability and social capital in the Linked

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neighborhoods of Kerman Bazar will be improved. The results also imply the importance of the role of the quality of the built environment on social capital and sustainability in the place. According to results, the perceived environment is the most effective criterion on social capital and social sustainability while access to the sports and cultural activities has the least effect. Moreover, the results indicate age increase and residence duration are also effective factors in increasing social capital and social sustainability.

Introduction

Social sustainability and social capital have become important issues in Iran, particularly in urban planning and regeneration policies. In the case of social capital, interest has been drawn to both academic and political fields, However, there is no specific guideline or suggested design scheme. This derives from a lack of research on the spatial elements that can influence social sustainability and social capital. This study suggested an integrative model of neighborhood environment, social capital and social sustainability and empirically examined the model. This research aims to identify and investigate the impact of the built environment on social capital and social sustainability indicators in the historical neighborhoods that linked to the Kerman Bazar.

Materials and Methods

This study investigates the theoretical causal relationships among neighborhood built environments, social capital and social sustainability using structural equation modeling (SEM), through a case study in Kerman, Iran. Historical neighborhoods that linked to the Kerman Bazar (Ganjalikhan-Mozafari and Ghale Mahmoud) are selected for this study.

The dataset consisted of responses from a questionnaire survey completed by 491 respondents. Neighborhood built environments were also objectively measured by GIS analysis, using a 250-m buffer based on the home addresses of the respondents. The dataset consisted of responses from a questionnaire survey completed by 491 respondents. Questionnaire analyzed by SPSS and AMOS. Neighborhoods built environments were also objectively measured by GIS analysis, using a 250-m buffer based on the home addresses of the respondents. A total of four latent variables of the neighborhood physical environments were used in the model: perceived neighborhood environment, characteristics of the residential area, land use diversity and access to parks and sport facilities. Respondents' demographic information and duration of residence were also considered in the model.

Results and Discussion

The results of the present analysis indicate that there is a direct and meaningful relationship between the quality of the built environment and social capital and also there is a direct and indirect meaningful relationship with social sustainability through the role of mediating variable of social

capital. The results of structural equations modeling also demonstrate that by improving the quality of the built environment, the situation of social sustainability and social capital in the Linked neighborhoods of Kerman Bazar will be improved.

The results also imply the importance of the role of the quality of the built environment on social capital and sustainability in the place. According to results, the perceived environment is the most effective criterion on social capital and social sustainability while access to the sports and cultural activities has the least effect. The perceived good quality of an environment can promote residents' spending time in the neighborhood, resulting in a greater chance of social interaction. Land use diversity can have similar aspects of influence, because mixed use development can attract more people to the area, which has been emphasized by new urban planners.

The quality of the perceived neighborhood environment has a positive effect on social capital. This relationship has been suggested in precedent studies (Yoo & et al, 2016; Dempsey, 2008) that amenity and social cohesion or closeness among inhabitants has positive relationships with social capital.

Namely, in a neighborhood with a good environment, inhabitants tend to be more active in the neighborhood and have more opportunities to encounter and interact with their neighbors. Perceived neighborhood environment quality not only has a positive direct effect on social capital, but also has both positive direct and indirect effects on social sustainability. Namely, among the neighborhood environment variables, the quality of perceived environment has the most significant and strongest impact on social sustainability. With regard to social sustainability, the indirect effect (0.26) of the quality of perceived environment has a stronger impact than its direct effect (0.147). Moreover, the results indicate age increase and residence duration are also effective factors in increasing social capital and social sustainability.

Conclusion

With regard to social sustainability, social capital has a more influential positive impact than any other factor, according to the present analysis. The results indicate that enhancing social capital will result in a more sustainable society. In the same way, this study substantiates the importance of the neighborhood environment in dealing with social issues. The results indicate that urban spatial planning can play a critical role in social issues. However, urban policies on social issues still lack awareness of the role of the neighborhood built environment.

This study suggests that adopting certain elements, such as accessible public sport facilities or the good quality of the environment should also be included in the social policies. However, this does not mean that the neighborhood built environment is the definitive and the only factor in sustainable

development. Other factors, such as socio-cultural context and economic factors can be also influential.

Furthermore, the results suggest that perceived environment and access to parks or sport facilities should be considered as essential elements in urban planning and urban regeneration aiming to enhance social capital and social sustainability. This is also suggested in precedent studies because the good quality of the environment and facilities where people establish relationships positively effects on social capital and social sustainability. The findings also indicate the importance of such neighborhood environment elements.

Keywords: Built Environment, Life Quality, Social Capital, Social Sustainability, Sustainable Development

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Evaluation and zoning of Sanandaj city's worn out texture neighborhoods seismic vulnerability, with passive defense considerations, using the IHWP and GIS model

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Abstract

According to the rapid global growth in urban population and the concentration of facilities and infrastructure in cities, in the event of an earthquake, the city's vulnerability is very widespread and it would threaten so many lives and properties. Therefore, providing logical solutions and applying passive defense principles can be an effective way to meet citizens at the event of crises. The research has been done on the basis of documentary methods, in Sanandaj. In order to achieve goals of the research, using the library studies, and existing documents, the necessary indicators to determine the vulnerability of urban textures to earthquakes were identified and extracted. In the next step, using the multi-criteria decision-making techniques such as the hierarchical analysis process and using Delphi fuzzy method, the level of importance of the effective indicators on the degree of vulnerability was identified. The purpose of using Delphi method is to reach an agreement between experts in relation to a particular topic, which is done by using a survey of experts on a variety of occasions and with regard to their feedback. The advantages of this method is providing unbiased answers, frequency and statistical analysis of the results of questionnaires. Results show that with the movement to the depths of neighborhoods, magnitude of the vulnerability of the monuments has been increased. The results also show that 26.87% of the buildings had the highest vulnerability, 36.6% had high

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vulnerability, 23.03% had a moderate vulnerability, 9.69% had low vulnerability and 36.4% Had the least vulnerability.

Introduction

The earthquake is known as one of the most dangerous natural disasters in the current era, which in a short time has put miserable harms to human societies. Meanwhile, due to the rapid growth of urbanization and encountering of cities with a greater concentration of the population; in the event of an earthquake, the city's vulnerability would be very widespread and threatens enormous number of lives and property of people. Therefore, providing clear and logical solutions for proper planning, recognizing urban spaces and their proper design can be considered as an effective way to meet the different needs of citizens at the levels of prevention, coping and post-crisis measures.

Materials and Methods

In order to achieve the desired goals of research, in the first step, using the library studies, existing documents and evaluating the results of previous studies, the necessary indicators to determine the vulnerability of urban textures to earthquakes were identified and extracted. In the next step, using the multi-criteria decision-making techniques such as the hierarchical analysis process and using Delphi fuzzy method, the level of importance of the effective indicators on the degree of vulnerability was identified. The purpose of using the Delphi method is to reach an agreement between experts in relation to a particular topic, which is done by using a questionnaire and a survey from experts on a variety of occasions and with regard to their feedback. The advantages of this method is providing unbiased answers, frequency and statistical analysis of the results of questionnaires (converting subjective data to objectives).

Results and Discussion

Results show that the old and worn-out nature of these neighborhoods and their low quality of architecture and urban design characteristics have made them unsustainable in terms of earthquake sustainability, and this is just because of weakness in street networks, low width of passageways, especially in the depths of the neighborhoods, old buildings, and unsustainable structural materials. So it is clear that implementation of effective guidelines in order to enhance building resiliency in this neighborhoods should be considered as the necessities of urban management actions, in order not to being faced with such a dilemmatic circumstance after occurring earthquakes.

Conclusion

Overall, the results of this study show that physical spatial features of urban spaces such as buildings and their physical features, urban design and planning, spatial distribution of land uses all play a decisive role on the

severity of cities and vulnerabilities. And it needs to be addressed in order to prevent irreparable damages.

Key words: Vulnerability, Earthquake, IHWP, Passive Defense, Sanandaj Worn Out Texture.

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Analysis and evaluation of pedestrian-oriented policies in historical textures with emphasis on Pedestrian Streets (Case study: Southern Khayyam Pedestrian Street of Urmia)

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Abstract

Among the new movements in the field of urban transportation, aimed at promoting pedestrian staging in the city and reducing vehicle dominance, are pedestrian-oriented and policies of making pedestrian street. However, the implementation of pedestrian streets in different cities has been accompanied by a variety of results; To the point where some pedestrian streets have failed and they have been opened again on the cars. In the present study, the evaluation of the policies used in the southern khayyam pedestrian street of urmia projects is being addressed. In this study, the analysis and evaluation of the strategies and policies used in the southern khayyam pedestrian street and the comparative analogy with the standard components and standards of pedestrian spaces attempts to identify the strengths and weaknesses of the axis and to solve its deficiencies. The research method is descriptive-analytical and based on documentary and field studies. In order to make a better comparison, Friedman's test has been used to rank the criteria and criteria. The results of the study indicate that southern khayyam pedestrian street quality is moderate and in some criteria it is not favorable. paying attention to the needs of the stakeholders, diversifying the design and creation of facilities for attracting different users, flexibility of the plan, decisive handling of unauthorized motorcycles and the like, The use of indigenous patterns with the cultural and historical context is one of the ways in which they can create more vibrant, more relaxing pedestrian walkways.

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Investigating the growth of cities in different decades shows that the combination of modern technologies and social-cultural behaviors on the one hand, and the pliability of planners in relying on the movement of the cavalry and responding to the thesaurus derived from it, on the other, causes oblivion Spaces, in particular, have been walking in cities and have made numerous intra-city trips. Pedestrian streets are the highest socially important places that can bring life and life to the city, encourage people to volunteer in the city and, as a result, ensure the city's stability. Pedestrian paths are roads with the highest degree of social role in which they have full mastery of pedestrians. The above paths can be a tool for community work that enhances environmental quality and fosters social peace. A pedestrian often involves equipment for wider, wider and closer social connections. In response to urban problems such as environmental pollution and disturbance, the pedestrian approach was proposed in various cities of the world in order to provide suitable conditions for encouraging people to take a walk and reduce motor transport. Therefore, attention to the issue of improving the quality of urban environments is important in improving the satisfaction of individuals from these environments in different ways. However, the implementation of walkways in different cities has been accompanied by a variety of results, to the point where some sidewalks have failed and have been opened again on the cavalry. Perhaps the first life sparks on urban streets could be found in the book The Death and Life of American Major Cities by Jacobs. Introducing the term "Street View Observer", he highlights the improvement of urban street quality for pedestrians and emphasizes the role of the street as a public space in creating social interactions. Al-Hagla has compared the two streets by identifying twelve indicators for pedestrian crossings. Among the indicators used in this research are the attractiveness, safety, extension of the parts, complete pedestrian, land use, number of creeping lines, the existence of privacy, speed limit, retreat of buildings, retreat of the route, park The margin, the brightness, the number of street trees, the roadways and the.

Materials and Methods

In the present study, the evaluation of the policies used in the southern khayyam pedestrian street of urmia projects is being addressed. In this study, the analysis and evaluation of the strategies and policies used in the southern khayyam pedestrian street and the comparative analogy with the standard components and standards of pedestrian spaces attempts to identify the strengths and weaknesses of the axis and to solve its deficiencies. The research method is descriptive-analytical and based on documentary and field studies. After extracting the main indicators of pedestrian assessment from reliable sources, they were assessed through questionnaires and interviews. The population consisted of the population of residents of surrounding neighborhoods, whose sample size was 377 according to the Cochran formula. The data are estimated by Likert scale and also used to compare the

Friedman test to ranking the criteria and designs. The results of the study indicate that Khayyam pedestrian quality is moderate and in some criteria it is not favorable.

Results and Discussion

Comparison of policies shows that the safety and security index has a significant improvement in the current roadway design, with a fourth rank with an average rating of 3.7 to the first rank with an average rating of 4.8, But the environmental index has fallen from the fifth rank with an average rating of 2.7 to the last rank with a mean score of 1.7. Based on the overall results of the overall assessment, the previous plan with a mean score of 1. 53 is slightly better than the current plan with an average of 1.47 and better than citizens.

Conclusions

Decide better policies to increase security and not clear the face of the problem, such as removing furniture, paying attention to the needs of the stakeholders, diversifying the design and creation of facilities for attracting different users, flexibility of the plan, decisive handling of unauthorized motorcycles and the like, the use of indigenous patterns with the cultural and historical context is one of the ways in which they can create more vibrant, more relaxing pedestrian walkways.

Key words: Pedestrian Street, pedestrian-oriented, historical context, Friedman, Southern Khayyam of Urmia

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Urban sprawl growth and transformations of political divisions (A case study of Qom)

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Abstract
The purpose of this article is to survey and analyze the urban sprawl in Qom with emphasis on the developments of political divisions. The purpose of this study is applied and in terms of a combination of documentary and surveying methods at the exploratory level using a combination of quantitative and qualitative models. The method of data collection is library and field studies. In this study, Holdern model, balanced distribution, aggregation rate, Herfindal concentration index, population density, and Structural Analysis model were used to investigate the effects of political divisions on urban sprawl. The results of the quantitative models showed that after the promotion of Qom to the provincial capital in 1996, urban sprawl has intensified. The results of the structural analysis model also show that developments in political divisions can increase the urban sprawl turnout through factors such as the deployment of government political representatives, increased concentration of funds, state laws and policies, and increased migration rates.

Introduction
The government, by changing the levels of state divisions and injecting more oil money, pushes the city out of its slow and natural growth process and

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actually contributes to the expansion of cities through some exogenous factors. In our country, as long as urban growth patterns have been organic and determinants of urban growth, endogenous and local factors, urban land has also provided traditional land use. However, since urban development has become an exogenous nature and oil revenues have been injected into the urban economy, increased investment in urban land has caused disruption to the urban land market and adversely affected the horizontal expansion of cities. In fact, the rapid growth and expansion of the city, under the influence of exogenous factors, after changing its position at the level of the national divisions, specially upgrading the city from the city center to the provincial capital, can lead to a sprawling urban trend. Qom province has not been exempt from this phenomenon, after the province's separation from Tehran and the allocation of funds and facilities to it, Qom as a center of this province has been growing and developing this growth is not properly done and there will be fears that this growing growth and development will become a sprawling urban landscape. Given the very negative effects of sporadic urban sprawl, this research seeks to test the following assumptions:

1. It seems that the city of Qom has a urban sprawl phenomenon and horizontal expansion and its urban sprawl rate has increased dramatically since the year of 1996 and it has become the capital of the province.
2. It seems that the developments of the political divisions and the promotion of the position of the city of Qom to the provincial capital have played an important and important role in changing the physical growth pattern of Qom and its sprawling escalation.

Materials and methods

The type of research is based on applied-developmental purpose and in terms of nature and analytical-exploratory method. The method of data collection in this study is library studies (note taking and documentary) and field studies (questionnaire and interview). In this study, Helderen's models, equilibrium distribution (Shannon entropy, Gini coefficient), aggregation degree (Moran coefficient, Gray coefficient), Herfindal concentration index and population density were used to investigate the urban sprawl phenomenon. Structural analysis model and Delphi technique have also been used to investigate the effects of political divisions on urban sprawl.

Results and Discussion

The results of the studies showed that the highest rate of expansion due to the horizontal growth of the city between different statistical periods was related to 1996 and after. For the period 1995-2005, the rate of expansion due to the horizontal growth of the city reached 61.32%, the highest rate of horizontal growth in Qom. In general, the rate of expansion due to horizontal growth in Qom before 1996 was 6.18% and after conversion to province was 47.03%, which indicates a very strong horizontal growth after Qom 1375 that shows five times growth. The results of the structural analysis model also show that developments in political divisions can increase the urban sprawl turnout

through factors such as the deployment of government political representatives, increased concentration of funds, state laws and policies, and increased migration rates.

Conclusion

The results of this study showed that the developments of political divisions and promotion of the city's status can be the most important factors influencing the emergence and spatial development and sprawl growth of the city. In fact, the results of this study showed that the rapid growth and expansion of the city, influenced by exogenous factors, after changing the position at the level of national divisions, specially upgrading the city from city center to provincial capital, can lead to urban sprawl.

Keywords: urban sprawl, urban development, Physical development, Political divisions, Qom city.

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Land Use change in Cities and Changes in Radiation Characteristics (A case study of Mazandaran)

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Abstract
Changing the balance of radiation through urbanization and change in Land use has led to an increase in the temperature of cities. The radiation Balance is calculated through the properties of the Net radiation flux (RN) including Albedo (α), long input wavelength (RL ↓), short input (RS), Long output radiation (RL ↑), and Land Surface temperature (LST) is measured. The research has examined the radiation Balance with using satellite images of Landsat 4-5 and 8 for the years 1998, 2010 and 2017 in August for Mazandaran. The characteristics of Net radiation in various Land use (urban and suburban residential areas, urban green spaces and suburbs) were analyzed by ANOVA and Tukey's post hoc test. The results showed that the amount of radiation flux in the selected applications has a significant difference. The differences are due to changes in the output energy (α and RL ↑), and any build-up and reduction of vegetation in the region will ultimately lead to changes in the radiation pattern and the formation of the new climate. Therefore, part of the process of increasing the temperature of the meteorological stations located within the city, not because of climate change and global warming but also from urban development and change of Land use.

Introduction

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Earth Net Radiation (RN) is one of the most important parameters in various applications such as physical, agronomic and biological applications, and remote sensing enables mapping of RN globally. RN is the total energy that is available for effects in the climate that affects the climate and its resulting phenomena. Land cover changes, such as urban development, agricultural production, or the development of construction and parking lead to increased variation in energy and radiation balance. Compared to the rural or natural landscapes, the characteristics of urban surfaces result in increase of surface water, reduction of hidden heat flux and increased flow of sensible heat to urban environments, all of which affect the comfort and activity of human beings.Awareness of the quality of the impact of vegetation and land cover on the processes of energy exchange, and thereby urban environments are essential in predicting the quality of ecosystem responds to future physical and biological disturbances as designed or unplanned consequences. Singh et al concluded using satellite imagery between 2002 and 2014 concluded that the central part of the city of Lacuna had the highest surface temperature compared to the suburban area. Moreover, the regions with a dense impregnable structure have higher temperature, and areas covered by plants and surface waters have low temperature.

Materials and Methods

The satellite images used in this research are 4-5 and 8 Landset images; they consisted of 3 images on 6/8/1998, 07/08/2010 and 10/08/2017 in a 20-year period. For this purpose, the images were provided by visiting the website of the American Geological Survey. In this context, efforts have been made to provide images without cloud covers, with comparable dates and atmospheric conditions in order to minimize errors. After applying radiometric correction to the images, atmospheric correction was also implemented in order to minimize the errors resulted by differences in atmospheric conditions. The components of net radiation flux were calculated using Surface Energy Balance Algorithm for Land (SEBAL). In this regard, after calculating the characteristics of Net Radiation Flux (RN), earth surface Albedo (α), Short Input Wavelength (RS), Long Input Wavelength (RL↓) and Long Return Radiation (RL↑), the characteristics of radiation flux in various applications (urban and suburban residential areas, urban green spaces and suburbs) were analysed by one-way Analysis of Variance (ANOVA) and Tukey follow-up test.

Results and Discussion

Using the Surface Energy Equivalence Model (SEBAL), the components of radiation flux were calculated for the cities of the middle shores of the Caspian Sea (Sari, Ghaemshahr, Babil, Babolsar, Amol, Noor and Chalous).

Then, the desired Land Use in the study area were extracted from satellite imagery and the average components of radiation flux for different uses for the years 1998, 2010, and 2017 were obtained. To calculate the mean values of Net radiation flux in different Land Uses, 211 points were selected with appropriate dispersion in the region. To sampling these points, we have tried to select pure pixels from each user in the entire scope of the study.

Conclusions

Based on the obtained results of the analysis of variance test, it can be argued that urban microclimate is controlled by the output energy flux which is directly related to the net radiation. Distribution of these flows has considerably changed in the urbanization process due to changes in the physical face of the earth's surface (Albudo, thermal capacity, conducted heat) and replacement of asphalt and materials with vegetation. Significant growth of tourism in the southern Caspian Sea cities during the recent periods has led to the physical development of these cities (Figure 8). This factor has led to application change on a large scale. According to the favourable climate conditions in the area, green spaces have replaced with urban facilities and equipment, and surrounding areas are integrated in the city. Since the city's microclimate is a function of the energy fluxes, any transformation of green space to the living environment will change the Albudo and long energy return. Any change in these applications will change the abovementioned values and results in establishment of new climate wisdom. Various factors such as increasing urban construction, increasing asphalt and concrete ceilings can be effective in increasing the temperature. Therefore, as much greenery is reduced and replaced with what mentioned above, the temperature will increase as a result. Reduction of green space (generally in suburbs) is accompanied by the expansion of cities and urban facilities, so the increase in urban temperature as a result of increase in urban construction expected.

Keyords: Net radiation Flux, Land Use Change, Temperature, Mazandaran

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