

Crime Prevention after Earthquake (Crisis Management Strategy before the Earthquake)

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Extended Abstract

Concentrate on rescue after occurrence of earthquake in residential areas and accommodation, housing and reconstruction as secondary operations are affecting the problem of crimes after the earthquake. Especially if an earthquake is happen in a metropolis or in a vast area, the commitment of crimes after that event will be an important matter. The diversity and increase of such offenses could encounter the state with a big problem. Therefore, a big plan will be necessary before the occurrence of earthquake.

Offenses that may be committed after the earthquake are strongly influenced by social, economic and environmental (geographical) factors. These crimes can be categorized as earthquake victims, and opportunist crimes. The crimes committed by earthquake victims are often related to urgent need or psychological problems, but opportunists are individuals, which using the opportunities created by the earthquake to serve their own illegal and immoral purposes.

In this paper, I am discussing the causes of commitment and increase of crimes after earthquake as an event. The role of governmental and non-governmental organization in the control and prevention from these crimes has also been discussed.

Concentrate on rescue after occurrence of earthquake in residential areas and accommodation, housing and reconstruction as secondary operations are affected the problem of crimes after the earthquake. Especially if an earthquake is happen in a metropolis or in a vast area, the commitment of crimes after that event will be an important matter. The diversity and increase of such offenses could encounter the state with a big problem. Therefore, a big plan before the occurrence of earthquake will be necessary.

In this paper, I am discussing the causes of commitment and increase of crimes after earthquake as an event. The role of governmental and non-governmental organization in the control and prevention from these crimes has been discussed as well. Despite numerous researches of criminology of natural disasters and crises, an independent study has not been conducted on the issue of crime prevention after an earthquake. This paper provides practical and

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executive solutions, while explaining the need to implement pre-earthquake crisis management strategy and making preventive decisions to reduce harmful effects, especially post-earthquake offenses, with the geographical division of the crisis center and its management area. Therefore, this paper is innovative and can serve as a basis for further and multidisciplinary researches.

Keywords: Earthquake, Crime space, Social crisis, Causes of crime, Prevention.

Determining the Cropping Pattern of Agricultural Products as a Strategy to Reduce Food Security Disaster in Iran

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Extended Abstract

Selection of cropping pattern is one of the main factors in increasing agricultural productivity. Optimal apportionment of land and determination of suitable crops for each region to prevent excessive consumption of inputs and reduce risks due to lack of food supply resources after scientific study of the factors affecting the cultivation pattern and considering different indicators can be achieved. The present study determines the factors affecting the cropping pattern and their prioritization. This research was conducted in Silakhor agricultural area in Dorud county, Lorestan province, Iran. The data were collected from libraries, interviews, and questionnaires. Variables that affected the cropping pattern were extracted using exploratory factor analysis then Shannon entropy-based TOPSIS method was used to prioritize crop cultivation. Factor analysis results indicated that the effective variables in selecting sustainable crop pattern in the research area can be classified into six factors including mechanization-farming, soil and climate, macro-government management, production support, social, and production margin. These factors explained 61.41% of the variance of the effective variables in the selection of cropping pattern. In addition, in the four-criterion entropy method, Access to cash capital of cultivation needed (0.236), Crop water requirement (0.233), crop profit (0.098), and cultivation area more than 1 ha (0.039) had the highest priority in choosing the cultivation pattern. They had the highest priority in selecting the pattern of cultivation. Finally, the results of TOPSIS Multi-Criteria Decision Making showed that the most influential parameters in the region's cultivation pattern were autumn sugar beet

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(0.598), Wheat (0.589), Barley (0.558), Canola (0.556), autumn peas (0.515).), Rice (0.499), Quinoa (0.471), and saffron (0.390), respectively.

Introduction

Ensuring the continued availability of regular food production resources is critical to food security. Food markets are supplied through domestic production and international trade. There may be a number of risks associated with supply chain disruption, commodity price fluctuations, along with other unforeseen circumstances, including natural disasters. To reduce the challenges that threaten the stability of food systems, the decision in the food sector must be increased and strengthened to be able to accommodate any changes that may result in food shortages [9]. The fast growth of the population and the deterioration of the environment make food security, at the lowest environmental cost, essential for the sustainable development of developing countries. It is possible to reduce the risks by planning an appropriate cultivation pattern of an operational approach, based on the diverse production of farmers, especially in grain production and productivity of farmland [12]. The advantages of the cultivation pattern include minimal consumption of fertilizers and herbicides, thus reducing food contamination with chemicals, high land use efficiency, performance stability, distribution of labor share during the growing season, less dependence on storage. Construction pointed to greater market opportunities by balancing crop production, sustainability, and long-term profitability without the need for additional financial investment will be cited [13]. Cropping pattern changes occur under the influence of the social, economic, and environmental conditions of rural communities because of proper planning or because of an emotional response to market conditions [7]. By prioritizing the effective criteria for reducing the sustainability of agricultural ecosystems, the researchers stated that among the ecological, social and economic criteria, the most important is related to the economic criterion [1]. The results of a multi-criteria decision-making study showed that salinity criteria, soil organic matter, soil erosion and soil texture are considered as limiting factors of cultivation pattern in rainfed Golestan province [4]. Researchers in analyzing the effects and factors affecting the development of saffron cultivation pattern stated that the most important components affecting the cultivation pattern are geographical factors and consumer market attractions [3]. The results of research on the ranking of agricultural products with a multi-criteria decision-making approach showed that this method is one of the most appropriate methods in terms of priority [6]. One of the important advantages of the TOPSIS method is that objective and subjective criteria can always be used [11]. In different conditions and researches such as prioritizing the cultivation pattern of strategic products of Alborz province, selecting the appropriate tractor and comparing the operational management efficiency of agricultural machinery exploitation systems, researchers to finalize the research criteria and rank the options in terms of

experts and methods. Expert decision makers specifically used the TOPSIS method [14, 10]. Therefore, in this study, first, the variables affecting the selection of cultivation pattern are identified among the various criteria of agricultural production and in the next step; the priority of crop cultivation is determined by relying on engineering and comprehensive methods along with practical experiences by looking at the central product model. Undoubtedly, one of the results of the cultivation pattern is food security, and in this regard, by designing a successful cultivation pattern, the effectiveness of its results can be increased.

Material and methods

Research area was located at Lower Silakhur plain, between the cities of Dorud and Boroujerd (38° 36' 56" N, 48° 31' 39" E), Lorestan province, Iran. In this study, in order to gain a more accurate understanding of the factors affecting the cropping pattern, the following steps were taken from both a scientific (documentary and expert view) and a practical (farmers) perspective. A questionnaire consisting of 22 items was designed within initial 78-item with expert opinion. One hundred and fifty five questionnaires were distributed among farmers and the relevant interviews were conducted with them in the field from 2016 to 2017. To determine data suitability for factor analysis and significant correlation of variables, sampling adequacy index (KMO) and Bartlett test were used, respectively, and for analysis of principal factors, the Varimax rotation method was used in SPSSv22 software. Based on Shannon entropy method a decision matrix was used to calculate the weights of the indices. These weights were used in the TOPSIS steps to rank the options. After normalizing the decision matrix and calculating the weight of indices by using the entropy method, TOPSIS method was developed in Excel software.

Discus and Results

Based on the Kaiser Scale Mechanization-Farming factors as the first and most important factor with a specific value of 3.96 alone explain 18.03% of the variance of factors affecting cropping patterns. Soil and climate factors with 11.28%, macroeconomic policy factor with 9.88%, production support factors with 8.09% social factors with 7.90%, and marginal factors with 6.04% of variance explained. In addition, the results showed that soil chemical properties factor with 78.1%, mean precipitation with 77.9%, and quantity and quality of access to water resources with 74.1% had the highest share among groups. In this regard, the first factors can be called Mechanization-Farming factors. The next ones were climate and soil factors related to the cropping pattern, and so were components such as maintaining crop sustainability, having consistent seed, having guaranteed purchases and government incentive policies on crops in the third factor, which can also be called macroeconomic factors of government and policymaking. The fourth factor, including product insurance and cash capital needed for cultivation, was considered as supporting factors for

production. The fifth were the social factors related to the cropping pattern such as farmers' experiences and customs which were the most important characteristics of such factors because the experience of farming one or more specific crops over the years affects the selection of cropping pattern. Finally, the plant pest of the area and the average temperature of the growing season were ranked as the sixth factors influencing the crop pattern. The priority of cropping pattern with TOPSIS decision cultivation in the study area was determined by crops, Autumn Sugar beet, Wheat, Barley, Canola, Autumn Chickpea, Rice, Quinoa, and Saffron, respectively. Comparing the results of this study with previous studies on the pattern of cultivation, showed that in terms of using the expert system, determining the cropping pattern is similar to designing an expert cultivation pattern in Mazandaran [2]. The factors affecting of cropping pattern and using multi-criteria decision-making methods, in relief with research indicators, the ranking of agricultural products is multi-criteria decision making [5]. In addition, in prioritizing the most important indicators of crop cultivation and using expert methods, decision-making is consistent with the results of priority cultivation of agricultural products in Kermanshah [8].

Conclusions

The results obtained from the study of the effects of different factors on cropping pattern and factor analysis showed that mechanization-agronomic factors with a specific value of 3.96 justify 18% of the total variances in total plays the most important and crucial role in explaining the pattern of cultivation. Among the subsets of this factor, the presence of mechanized equipment, crop yield, and crop water requirement were particularly important with factor loads of 0.75, 0.74 and 0.74, respectively climate and macroeconomic management of the State with eigenvalues of 2.48 and 2.17, respectively, explained 21.16% of the total variance of the cropping pattern factors. This shows the crucial role of decision making in the upstream sectors. Because without motivating qualifications, it is difficult for farmers to change the pattern of cultivation, and it is necessary to encourage targeted policies to reform the pattern of cultivation. The results of the TOPSIS decision showed that sugar beet, wheat, barley and canola cultivars have the highest priority among the 8 selected crops with 0.559, 0.558, 0.555 and 0.556, respectively. The current cropping pattern of the region is mainly composed of three crops of wheat, barley and rice crops. The water supply method for rice cultivation is the use of deep wells and groundwater, which continues to lead to environmental disaster and depletion of water resources. Based on the multi-criteria decision-making results and considering the effective components of crop pattern, sugar beet and canola can be added to the region's cropping pattern by keeping the farmers' profit margin constant. Optimal design of the cropping pattern leads to policies that first allow farmers access to land and other agricultural inputs to increase farm productivity and

household income and secondly to reduce the risk of food shortages in the country. The future has a major role to play in enforcing this policy effectively.

Keywords: Cropping pattern, Exploratory factor analysis, TOPSIS, Disaster, Food security.

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Evaluation and Analyses of Adaptation Capacity of Local Communities to Climate Hazards (Study Area: Sefidbarg and Bivandsofla Villages, Javanroud County)

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Extended Abstract

Introduction

Capacity building reflects the ability of a region or community to cope with growth and versus change [7]. The ability of individuals to adapt to emerging climate hazards is one of the most important features to consider when considering climate risks. Global changes in climate patterns and events alter the quality and access to natural resources. This leads to a widespread impact on their social and economic systems [4]. This study examines the adaptation capacity to local climate hazards in Javanroud county located west of Iran.

Materials and methods

This research is applied in terms of nature and has been done by descriptive-analytical method based on questionnaire data to assess the adaptation capacity of local communities. In this study, climate hazards adaptation capacity indices including economic, social, infrastructure, personal knowledge, and government factors were studied. The population of the study area consisted of the local communities of two villages Sefidbarg and Bivandsofla in Javanroud county with 60 respondents, which were selected randomly. The questionnaire has been developed in five sections: economy, social, infrastructure, individual knowledge and government. The scores of each index were determined based on the Likert scale (0-5). Then, the effect of each of the components of adaptive capacity and data analysis of data collected using statistical techniques in SPSS software. In order to determine the validity of the data collection tool, the questionnaire was evaluated by the professors of Faculty of Natural Resources, University of Tehran. In addition, Cronbach's alpha coefficient was used to measure internal consistency (reliability) between the indices.

Result and discussion

According to the survey extracted from the questionnaire, the adaptive capacity

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of each component in the target communities indicates that the amount of adaptation capacity of the components in the two villages is different. Examination of the means showed that the components of economics, social, individual knowledge and government with numerical values of 2.57, 2.20, 2.72 and 2.33 were lower than the average of adaptation capacity (3) respectively. In addition, the infrastructure component with average value of 3.21 has higher average compatibility capacity. Adaptation capacity in the village of Bivandsofla with a mean of 2.33 has more inappropriate than the village of Sefidbarg with a value of 2.88. The average adaptive capacity of local communities in the two villages of Sefidbarg and Bivandsofla is 2.60, which indicates that local communities in the study area have low adaptive capacity facing with the climate hazards.

According to the results of the Friedman test in the village of Sefidbarg, we found that the components of adaptive capacity have been evaluated as desirable. Component analysis shows that infrastructure component with 4.12 in the first place, economic component with 2.98 in the second place, personal knowledge component with 2.92 in the third place, government component with 2.68 in the fourth place while the social component ranks fifth (last). The components of adaptive capacity have also been evaluated in the village of Bivandsofla. In this regard, Friedman test results show that the infrastructure component with 4.78 in the first place, the individual knowledge component with 3.57 in the second place, the economic component with 2.88 in the third place, the government component with 1.95 in the fourth place and social component in the fifth place. The significance level of the Friedman test is 0.0001, indicating that the components under study are significantly different in terms of adaptive capacity. In addition, the results of Mann-Whitney test showed that according to the absolute value of Z statistic the components of 0.860 and personal knowledge of 1.553 are less than 1.99. So, H_0 is accepted as the two components in the Sefidbarg, and Bivandsofla villages had no significant difference and the absolute values of economic, social and government components are 4.839, 4.408, and 4.527, respectively. They are above 1.99, which indicating the importance of these components. Regarding the significant level, we observe that the infrastructure and knowledge components are not significant with the levels of 0.39 and 0.12, respectively. In the economic, social, and government components, the level of significance is less than 0.05, which means that the mean of adaptation capacity of these components is significant in the region, which can be stated that the economic, social and government components are different in terms of adaptation capacity in the two studied villages.

Conclusion

Developing countries are severely vulnerable to climate hazards, and climate hazards are increasing the magnitude and severity of severe weather events and

extremes weather. Adaptation to climate hazards depends on the current adaptation capacity and development models pursued by developing countries [6]. Climate hazards has increased food shortages, social unrest, local conflicts and even wars. The common goal of adaptation analysis is to estimate how the impact of climate hazards can be reduced or compensated by the ability to adapt to affect [3]. Effective factors affect the adaptation capacity of communities, countries, and communities their willingness or ability to adapt. These factors determine the capacity to adapt to economic, social, institutional, and technological conditions that include facilitating or limiting the development and expansion of adaptation measures [1]. Therefore, adaptation is a precautionary action and it is important to reduce the impacts of climate hazards and to use the potentials and benefits of communities [2].

The results of the adaptation of local communities of the two villages Sefidbarg and Bivandsofla indicate that the local communities of Bivandsofla with a mean of 2.33 and Sefidbarg village with a mean of 2.88 have a low adaptation capacity in the face of climate change. The low adaptive capacity of the two villages has directly related to economic, social, infrastructure, personal knowledge and government components. In addition, the two mentioned villages have the highest adaptation capacity in terms of infrastructure component and the economic, social, individual knowledge and government components have low level of adaptation capacity. Therefore, it is necessary to pay special attention to promote and improve the economic, social, personal knowledge and government status. Our research has shown that awareness of climate hazards is associated with an increased adaptive capacity. The climate hazards awareness is a valuable investment for industry planning and climate change risk management [5]. Also, providing supportive policies in the economic, social, individual knowledge and government sectors by organizations related to rural communities and job creation and also creating new job opportunities in rural communities can increase their capacity to adapt to climate hazards and potential damages in the future.

Keywords: Climate hazards, Adaptation capacity, Infrastructure, Management change strategies.

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Shiraz Environmental Resilience of the March 2019 Flood Hazards; through Landscape Approach, Systems Theory and DPSIR Model

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Extended Abstract

Introduction

Both ‘resilience’ and ‘landscape’ are conceptually complex terms. The concept of resilience is defined differently across different disciplines [41]. These definitions include a range of meanings such as rigidity, coherence, bouncing back, bouncing forward or transforming forward [32]. The definitions of the word landscape have also been different from the perspectives of different disciplines. These definitions range from objectivism to subjectivism.

According to the definition of the European Convention of 2000 and systemic and holistic approaches, landscape is known as a phenomenon that is the result of human interaction and perception of the environment [26]. This approach is systemic and holistic and considers it impossible to separate objectivity and subjectivity. Although this definition may not seem challenging, the landscape system is complex, dynamic, and chaotic.

With the global climate change and the expansion of cities, natural hazards and crises and the resulting damage have been on the rise [11]. Since in a complex system such as a city, disruption of any part of the system could lead to the disruption of the whole, [11] it is necessary to examine climate hazards along with human risks in a systematic and holistic perspective. Recent studies in the field of environmental risk and hazard management, unlike the past, have taken the direction of improving resilience [1-8], and this shows the importance of resilience concepts.

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This article, by combining systems theory with AIDA and DPSIR models in a comparative process with the destructive flood event of March 2019 in Shiraz, explores the main parameters of Shiraz resilience and the relationships among such parameters together with the exploration of the Shiraz resilience and the consequences of the flood.

Method

Considering that the landscape is the result of the users perception (citizens) of events and environment [31], the view of Shiraz flood was examined from the perspective of Shirazi citizens (both ordinary people and experts).

Given that the landscape system is a complex system consists of i.e. social, environmental, political, economic, legal, technological systems, and complex communications and processes and the occurrence of events such as butterfly effects; hence, the study of such a system involves great challenges. Therefore, the reaction process of the landscape system against risk factors such as floods through systems theory in combination with the DPSIR and AIDA model was investigated.

Since the Landscape approach refers to human understanding of the nature, and objectivity in general, the information required must be the result of human perception. Data were collected and obtained through field observations of citizens' behaviors. There were also 50 in-depth interviews with the affected people, as well as an analysis of the content of the lectures and panels that took place right after the floods in Shiraz. Finally, the resilience of Shiraz against the flood was explored based on the field observations and documentations including the interviews and the content analysis of three lectures and four specialized panels.

Results and Discussion

Driving Forces of Shiraz's landscape system in the March 2019 floods can be divided into two main categories. First, the driving Forces belonging to the objective (physical) realm, including physical flood damage to residential homes, cars, streets, and some infrastructure (in the form of accumulation of water and mud). Second, the driving Forces in the realm of the mind, including shocks caused by the sudden death of a number of compatriots during Nowruz 2019, the psychological damage experienced by Saadi district residents and people's grief during Nowruz, which indirectly affected other social and economic processes.

Therefore, during the terrible flood in Shiraz in March 2019, the landscape of Shiraz was examined along with the the people's responses. Perception of time, environmental state and human needs as the three main parameters of Shiraz landscape in the crisis situation were identified. People's responses were the result of their decisions based on their awareness, their interest and the outcome of the three main parameters. These parameters and their relationships, as well as its conceptual model, are explained in the main text of the article .

If a driving force such as a flood enters the landscape system, it is received as pressure in the landscape system. This pressure creates a special state in the environment, which results in destruction of and/or damage to the environment. The environment left or preserved from the destruction, or the capacity left in the destroyed environment, or even accidentally created by the destruction, shapes the state of the environment. Humans, based on their thoughts, beliefs, needs and interests, and their perceptions of the crisis and the amount of time they have to react to the crisis, and of course, with the intervention of emotion, perceive time and enter the decision-making process. In this process and in accordance with the AIDA model, decisions are made based on awareness and interest and actions are taken.

Conclusion

The Shiraz city was physically and economically damaged due to the March 2019 flood. The structure of the city was not damaged or rapidly returned to its original state. There was not much of economic impact on the body of the city and the people (except for Saadi neighborhood), and the assistance of charities and people to the affected people and areas was satisfactory.

Regarding to its social impact, the incident increased people's solidarity, their sense of belonging to each other, and their city of residence. People's behavior was not racist. This flood led to the formation of a series of events and specialized meetings of architecture and urban planning in Shiraz, which led experts to take a holistic view of the flood hazards.

Crisis management began hours after the flooding of the Quran Gate. There was no disturbance in the management of the people's and institutional crisis.

In a holistic analysis, it can be said that the shock to the people during the floods in Shiraz, caused a severe emotional leap of the people, as they were not mentally prepared to face the crisis of the flood due to successive droughts, especially in the happy days of Nowruz. This caused a huge emotional leap and empathy in the people. Emotions led to quick and timely actions by the people. As a result, the physical environment returned to the normal state more quickly. It seems that people, institutions, and the organizations involved performed well in terms of coordination in response to similar crises.

Keywords: Landscape Resilience, Landscape Approach, Shiraz Flood hazards, Systemic and holistic Approach, Climate Change, DPSIR Model.

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An Analysis of the Distribution of Hospital Centers with Passive Defense Approach to Hazard Management using Neural Network (Case Study: Tabriz City)

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Extended Abstract

Introduction

Hospital as one of the critical parts of the city should be considered in terms of passive defense to hazard management. Since the city of Tabriz has a large supply of medical services, it is necessary that the hospitals in this city be investigated and suitable parts from the perspective of passive defense are presented. In the present study, using 13 effective criteria and using neural network method, we investigated the position of hospitals in Tabriz city. The criteria include: distance from fire stations, distance from industrial and military centers, distance from parks and urban green spaces, distance from health centers, distance from main roads, population density, distance from faults, distance from riverside, Distance from training centers, distance from business premises, distance from warehouse and urban facilities, distance from fuel centers and dispersal and access radius of hospitals. The layers were first straightened and standardized in the Arc map, then using Neural Networks method using MATLAB software. To achieve the research goals, 104 educational points were introduced to the system. The results of the study indicate the status of hospitals in terms of non-operating defense that among the current hospitals of Shahid-Ali-Nasab had the best position in terms of passive defense to hazard management, and the hospitals of Imam Reza, Madani and Taleghani had a more unfavorable situation than others, as well as the northwest of Tabriz city. The best conditions regarding the passive defense and hazard management features are northwest parts of city for building new hospitals.

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Methodology

To work with Artificial Neural Network, firstly, effective parameters to locate the hospital should be provided to the network as input layers. Then, a number of training points should be given to the network so that the network uses the training points to determine the impact of each of the input layers; in fact, the network has received the training needed to cope with new areas. Finally, the entire city of Tabriz has been provided to the trained network, and in the end, the network, using what has been learned, identifies the optimal locations for the hospital.

The neural network has several types. In this study, Multilayer Perceptron method was used with back-propagation algorithm to determine the optimal location of the hospital.

Result and discussion

After providing the necessary trainings to the network and run it, the result of the map of the optimal locations for the construction of the hospital was presented. The output is a valuable layer between zero and one.

Conclusion

The city of Tabriz is the provider of many health services and the city as one of the big cities of Iran has the potential to attack enemy targets during a possible attack. On the other hand, there are natural risk factors in the city. The need to examine the status of the current hospitals finding the right place to build a hospital. According to the mentioned cases, necessary studies were carried out and 13 criteria for the mentioned goals were determined. These criteria were determined using previous studies and natural conditions of the city.

The method used in this study was a neural network method, which was used with multi-layer perceptron method with error propagation algorithm. We have plotted results with a numerical value from zero to one. By examining the position of the current hospitals in Tabriz, it seems hospitals are located in the central regions of the city and are more likely to follow the population factor.

The results show that Ali Nasab Hospital has a better position in terms of passive defense to hazard management than other hospitals. The hospital also has an appropriate distance from the environmental threats, such as faults and streams, and in the distance from the critical centers at the time of target of a possible enemy attack, and it has access to the main routes and the first arteries, and open green spaces, which, in times of crisis, provide space for emergency relief and emergency hospital establishment. After that, Amir Al-Momenin and Artesh hospital have a more favorable situation than other hospitals. Shahid madani, Imam Reza, and Taleghani hospitals have the worst conditions than other hospitals. Considering that, most hospitals are in Tabriz 1 and 2 districts and those have no radial distances with other hospitals in the areas that two Shahid Madani and Imam Reza hospitals are these centers. Because the hospital should be have distance at least 1000 meters from the fuel supply centers, this is

not adhered to the case in the Taleghani Hospital. There are two fuel centers in the 1000-meter hospital privacy. Accordingly, the southeast parts of Tabriz is the most unsuitable areas for construction of new hospitals, and the northwest were identified as the best areas for building new hospitals.

keywords: Hospital, Location, Passive Defense, Disaster Management, Artificial Neural Network, Tabriz City.

Analyzing the Hazards Affecting the Development of Sustainable Tourism Entrepreneurship in Koohrang County by using Qualitative Comparative Analysis of Fuzzy Set

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Extended abstract

Introduction

For growth potential Entrepreneurship Tourism and its product can only be consumed in its place; Tourism plays an important role as a strategy for local development. The aspects of tourism entrepreneurship, in addition to being strongly related to physical space (territory) and intellectual space (interaction between local and social actors); It is also closely related to culture and nature conservation. Unlike industry, tourism entrepreneurship must protect its production to survive. Given that the tourism industry is made up of various components such as tourists, the host community, commercial companies hand the environment; several factors may threaten one or more sectors of tourism entrepreneurship that affect the overall performance of the industry. As a result, tourism entrepreneurship is strongly affected by disruptions and risks such as recessions, political crises, weather events, and natural disasters. What is important is that there should always be a coherent system for supporting, planning, and managing tourism in times of crisis, and be prepared to act before it happens. Accordingly, one of the requirements for achieving the resilience of the tourism destination community and entrepreneurial activities in tourism is accurate and appropriate recognition and evaluation, along with the rationalization of risks in order to control and control it. Unfortunately, the lack of information in this sector reflects the fact that little attention has been paid to risk management in tourism entrepreneurship, which increases the importance of paying special attention to risk management.

Considering that the development perspective of Chaharmahal and Bakhtiari province and Koohrang county has been developed based on tourism development. Understanding the hazards affecting tourism entrepreneurship is important for two reasons in this province and Koohrang county: First, this province is currently one of the main destinations for rural tourism in Iran. Lack

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of sufficient knowledge of the dangers of tourism entrepreneurship and how and how much it affects the sustainability of rural tourism; it has made little use of the great potential of tourism in employment development and poverty reduction. In addition, it has led to the loss of some environmental resources. On the other hand, one of the most important strategies in the development perspective of Chaharmahal and Bakhtiari province has been developed based on the tourism industry. Accurate and comprehensive knowledge of the risks and how they affect the development of tourism in the region can be prepared by micro-planning, preparing the local community for a timely and appropriate response to risks. This requires that operational research be conducted to identify the risks and their impact on the development of tourism entrepreneurship, and by recognizing the potential challenges in this area, pave the way for achieving the desired development goals. Accordingly, the present study seeks to answer these questions: What are the hazards affecting the development of tourism entrepreneurship? Moreover, what pathways from combining these hazards can be more effective in developing tourism entrepreneurship?

Methodology

This study was an applied type; its' nature and method were descriptive-survey. The present study was conducted in the period of 1398. The research tool was a researcher-made questionnaire containing 5 components. The main data collection tool was a questionnaire taken from Ayashi study, 2012 and Zamanzadeh et al., 2016, the validity of which was obtained by the opinions of experts and its reliability using Cronbach's alpha test for socio-cultural risks 0.76, environmental 0.80, structural-functional 0.65, safety and security 0.71, and for the development of sustainable tourism entrepreneurship 0.79. To calculate the sample size, equivalent with the purpose of the study, which examines the effect of independent variables (conditions) on the dependent variable (result); the number of 244 people was estimated using SPSS Sample power software, which was obtained with a test power of 0.80 and a confidence level of 0.95. The statistical population of the study consists of tourists visiting Koohrang county.

Results

The results of the study show that 76% are men and 24% are women. The statistical sample age is between a minimum of 24 and a maximum of 67 years, and their average age is 40 years. In terms of education, the highest number of people had diplomas with 42.5, and about 37.1% of the studied sample had university degrees in associate's, bachelor's and master's degrees, and 20.4% of their education was under diploma. In terms of employment, about 24.6 percent were unemployed, 48.2 percent were self-employed, and 27.2 percent were employed by companies and government agencies. Condition and result in the analysis were conducted by using qualitative comparative analysis of fuzzy set

and the analysis steps were applied as follows: first, calibrating and standardizing the data, second, using the truth table algorithm, third, classification of conditions and finally X, Y to confirm the effect of the conditions on the desired result in fs / QCA software was terminated.

Conclusion

Given that the tourism industry is made up of various components and in addition to tourists and the host community, it includes commercial companies and the environment; several factors may threaten one or more parts of the industry that affect the overall performance of the industry. This study aimed to investigate and fundamentally identify the risks affecting the development of sustainable tourism entrepreneurship. Data analysis showed that different risk paths affect the development of tourism entrepreneurship, but the type and effect of each are different. Awareness-based anticipation is one of the necessities of the tourism industry. Identifying the threats to the tourism industry is one of the prerequisites for forward-looking management. The results show that accurate and complete knowledge and the necessary predictions to deal with different types of risks can paint a brighter future for the management of the tourism industry. However, given the direct link between the tourism industry and the environment, it seems that the threatening environmental risks have further raised concerns among the target group. Proper preparation following the natural environment and adequate preparation and training in this field can reduce and control its possible harms to some extent. The research findings on the development of the county's development landscape, especially the issue of entrepreneurship and especially tourism entrepreneurship, are important.

Keywords: Tourism Entrepreneurship, Environmental Hazards, Safety-security Hazards, Qualitative Comparison Analysis, Koohrang County.

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