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Practical model for measuring progress towards Sustainable rural tourism

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ABSTRACT
Global growth in tourism has brought a wealth of economic and global. Today one of the planners in the tourism resources that have attracted more and more rural areas. Overall, a very valuable part of our heritage, rural world And especially the indigenous architecture and unique identity of a region well-supported and reflected in its territory Thus, according to the situation in rural areas And development necessary to sustain it, Rural tourism can be an option for rural development .In this study population, statistical information is from 19 villages in Isfahan city. A matrix with 11 rows and 19 columns, including indicators to be studied include the village. Component analysis based on survey results showed Six factors (distance from the village to the city center, The number of rural doctors, Village distance to the center section Sports facilities to count toward the village, High proportion of rural banks and rural villages have a number of drinking water to villages), about 86/89% of the cumulative variance is explained. Weighting and aggregation of these factors with the environment, GIS, and the potential areas of tourism infrastructure services were identified. Village on the area of tourism and Jrqvyh Lyy as the Ramshh Village, Sistani and Zefreh tourism in terms of having been the last times. The Euclidean distance method and a gap analysis, four regions were similar in terms of its tourism infrastructure services.

Introduction

Tourism industry in the world today, one of the major sources Ramd and cultural exchanges between countries and also factor in as the world's largest service industry, a special place is important. The global growth of tourism has brought a wealth of global economic and Priority projects and programs in nations and communities around the world are (Gunn, 2002, 18). The most popular types of tourism, rural tourism has been identified (Mostofi Almmalky, 1998: 451). Chain as the ring opening of village settlements are located in direct contact with nature. From this perspective, with high tourism potential in nature. For review and evaluation of a variety of tourism attractions, activities and tourist attractions that should be considered in tourism planning is important. Tourist attractions are classified in different ways;In a resource and tourist attractions can be divided into two groups.

Natural attractions and scenery that forms the basis of the natural environment And human or cultural attractions that human activity is based, Divided into Ins keep, 1991, 75-77 tourism programs such as why it is necessary to be equipped with the tools and techniques of sustainable Permanent addition to the productivity of its destructive effects are also reduced.

One of the planners in the tourism resources that today more than ever to have Khvdjlb rural areas. Overall, a very valuable part of our heritage, rural world and special and unique local architecture An identity of its own territory and reflects well supported (Dragaoni, 2008, 3). And enjoyment of cultural attractions Social and natural and can be very favorable for tourists near and far provides. Thus, according to the situation in rural areas and the need to develop a sustainable, Rural tourism can be an option for rural development (Sharif-Zadeh and Mradnzhad, 1381, 51).Attention to rural tourism, especially in third world countries is essential and vital

Because "the rapid growth of urbanization and industrialization and rapid development of air in the third world countries, for several decades, The rural sector has been forgotten and ignored, or low And this may result in your being denied access to the countryside and the spread of poverty in rural communities, Vrvstay increasing gap between the city and the rural-urban migration has been "(joomeh-Poor, 2007: 2). This situation led to job creation in rural areas with rural tourism development And residents to remain in place and improve their living conditions will And the frequency of impact would And the other "cities in developing countries do not have any power to attract rural migrants Rural labor force in these countries and their populations lose Cities but also due to population pressures often severe cultural issues, Social, economic and political encounter "(Saeed, 2007: 89-90) Among these "Iranian rural income due to low price Lesions and high The low yield per unit area and villages And in rural communities due to the absence or lack of social services such as Education and health, safe drinking water, Technical and communication services, electricity and roads is inappropriate And the overall quality of life and enjoyment of being in Iranian villages In comparison with urban life is low. Lack of diversity in employment in the rural community can be seen sharply. Employment in industry and services sectors is very low and mostly confined to the agricultural sector. Work and unemployment is less common in rural areas "(Comfort, 2008: 9).

Rural tourism boom will be able to overcome some of the problems mentioned So with a "firm decision regarding the preservation of rural areas and supporting agricultural production and farmers as guardians of national security In many parts of the country with urban problems And prevent the spread of the marginalized And prevent the strategic areas of the population will be necessary to empty "(Hosseini cloud, 2002: 195). So "can be said that rural tourism on the one hand providing new opportunities for many rural As the device is that it gives life to rural communities, These areas are under development Habitats, and this keeps them loyal. The planned

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development without the social and environmental damage is in the rural settlements "(honorary and Mahdavi, 2004: 8). Of items that can be involved in tourism planning can help Tourism is the identification of homogeneous regions The following recognize the homogeneous region tourism One of the basic needs in planning Land use planning program is particularly And tourism is essential for understanding complex phenomena. Zoning often based tourism is tourism of different variables Thereby determine the role of tourism places tourism all variables to be considered. In this study, also using cluster analysis The city's zoning district of rural tourism Based on the factors affecting rural tourism has been paid.

Background investigation

Masoudian (2004) with twenty-seven climate elements Using the base component showed Iran's climate is the climate of six components .Cluster analysis based on a component basis chiliad climatic zones in Iran revealed the existence of fifteen That any increase or decrease in the climate of Iran has not occurred in most areas. Masoudian (2006) using the components of the To examine the geographical distribution of precipitation in Iran, Represents the full scope of the rain Tuesday in Iran.

Dean Pajooh and colleagues (2002) for zoning of Iran's precipitation method based components and space used. The study is based on the entire country is made up of six regions of homogeneous and a heterogeneous region. Jahanbakhsh and Torabi (2005) for review and forecast temperature and precipitation changes in Iran Time series and cluster analysis method used. Rezaie and Azizi (2010) to identify homogeneous precipitation areas West of Iran Of component-based methods and distance methods are used. Results showed that the roughness and latitude location of the boundaries and differences are very important. Changed following the review of monthly precipitation showed Moving from south to north with maximum precipitation will transition from winter to spring.

Taste and colleagues (2009) factor and cluster analysis to classify the climate of Sistan and Baluchestan province took advantage. Based on that province's climate is influenced by climatic elements. Based on five areas were identified in the climate. Zarrabi et al (2011), cluster analysis was used to analyze spatial Sistan ecotourism. Research results indicate that in Sistan-half of the wells, Khwaja our lakes and mountains due to having a high potential of ecotourism at the highest levels are absorbed. China's crude front and associates (2011), for zoning zoning for cluster analysis using the maximum daily precipitation in Iran and the country is divided into seven regions. Karimi and relaxation (2011), the spatial analysis of tourism in rural areas benefiting from the base component and the distance between the villages of Jabal (The Foothills - Esfahan province) have And on Jabal village was divided into four tourism regions.

The study area

As one of the city of Isfahan, Isfahan city Isfahan is located in the heart. The city district is 19 (Fig. 1).

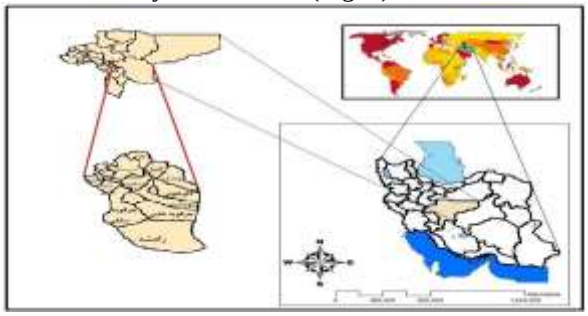

Figure 1. Location of study district

Materials And Methods

The statistical information is from 19 villages in Isfahan city. Data and information required "The number of rural health centers The number of rural doctors, Proportion to the number of village libraries, Sports facilities to count toward the village, Benefit ratio of gas to rural villages, Proportion to the number of rural villages benefited from the post office, Proportion to the number of rural villages benefited from the cooperative, Benefit ratio of bank branches to rural villages, The benefit of safe drinking water to rural villages, Distance from the village center, village center and the center of the city center "was adopted. Tourism infrastructure facilities were then mapped matrix. And therefore the first field study and library Potential matrix was formed. A matrix with 11 columns Includes indicators And 19 rows of villages is studied (Table 1). The method of the base component and hierarchical cluster analysis, the potential level of infrastructure.

Component analysis based

The first factor analysis and data standards,

Then, using the correlation method and the analysis is Varmus rotation. Analysis carried out showed that the 6 factors of about 86/89% of the cumulative variance is explained. Factor analysis model is as follows:

$$X_1 - \mu_1 = \ell_{11} f_1 + \ell_{12} f_2 + \ldots \ell_{1m} f_m + \varepsilon_1$$

$$X_2 - \mu_2 = \ell_{21} f_1 + {}_{\ell X_1,\ldots,X_n 22} f_2 + \ldots \ell_{2m} f_m + \varepsilon_2$$

$$X_p - \mu_p = \ell_{p1} f_1 + \ell_{p2} f_2 + \ldots \ell_{pm} f_m + \varepsilon$$

Random vector with p components visible on X μ and covariance matrix Σ is an average. The factor model

assumes that Linearly dependent on some random variable X invisible F1, F2, ... Fm is They say that the common factors And other sources of variables p ε1, ε2, ε3, ..., εp are When errors or specific factors (Specific Factor) are called. Values in Table 2 Factor loadings and variance explained by the six rotation and without rotation are shown.

The table above six factors with loadings of each variable are named as follows.

The first factor: the village to city center

The second factor: the ratio of the number of rural doctors

The third factor: the distance to the center of village

The fourth factor: the ratio of the number of rural sports facilities

The fifth factor: the ratio of rural to rural banks

The sixth factor: the ratio of water to rural villages

Operating times is the variables that represent Villages that have compared the number of rural banks and rural banks from the The number of rural villages to the highest weight in the city center have been operating. The second factor of the gas mixture ratio of the villages the number of villages and the villages of the rural cooperative. The third factor of the ratio of drinking water in villages The number of villages and rural villages, most times the number of banks has The fourth factor varies with the ratio of the bank in villages The number of villages and the ratio of water to rural villages are having the greatest weight. The fifth factor combination of distance to the center of villages and rural areas is attributed to the number of doctor and operating variables from the sixth district to the city center and the number of village doctors are the highest weight. (Table 3).

Table 4 shows the load factor mentioned by the district.

According to Table (4) Maximum weight Rodasht district and village to village shrine Abdulaziz lowest weight in the distance are the city center (Figure 2).

Table 1 - Matrix indicators and villages studied

Gav khoni	0	0.1	0.1	0	0.4
Jarghoii sofla	0.09	0.09	0.13	0	0
Jarghoii vosta	1.17	1.17	0.33	0	0
Jarghoii olia	1.2	0.8	0.8	0	0
ramisheh 0.89	0.22	0.11	0.11	0	
abdoaziz	0.24	0.2	0.04	0	0
rodashat 2.33	4.33	1	0	0.67	
tooshak	0.19	0.1	0.02	0	0.05
jabal 0.19	0.16	0.03	0	0.08	
zafreh	0.21	0.11	0	0	0.05
sestan 0.16	0.32	0.05	0	0.05	
Baran s	0.5	0.18	0	0.05	0.77
Baran n 0.41	0.67	0	0.04	0.04	
jei	0.29	0.29	0.04	0	0.67
Ghahab s 0.19	0.33	0	0.05	0.29	
Ghahab n	0.57	3.33	0	0.05	0.52
karaj 0.43	0.2	0.5	0.03	0.7	
Mahmod abad	1.44	0.11	0	0	0.89

district	Proportion to the number of rural villages benefited from the post office	Proportion to the number of rural villages to benefit from cooperative	Benefit ratio of bank branches to rural villages	The benefit of safe drinking water to rural villages	Distance from the center of the village center	The district center of the city center
Rood shat	0	0.14	0.29	0.71	82	3
Gav khoni	0	0	0	0.9	87	-8
Jarghoii sofla	0.09	0	0	0.04	88	25
Jarghoii vosta	0	0	0.17	0.17	100	23
Jarghoii olia	0.2	0	0	1	100	-23
ramisheh	0	0.11	0.11	0.22	60	-63
abdoaziz	0.08	0	0.08	0.24	75	29
rodashat	0	0.33	0	0	85	12
tooshak	0.05	0.02	0.05	0.21	78	-4
jabal	0.08	0	0	0.19	88	7
zafreh	0.05	0.05	0	0.11	45	19
sestan	0	0	0	0	69	47
Baran s	0.14	0.05	0.09	0.36	60	60
Baran n	0.04	0.04	0.07	0.15	63	63
jei	0.04	0	0.04	0	86	86
Ghahab s	0.1	0.05	0.52	0.1	77	77
Ghahab n	0.1	0.05	0.19	0.29	80	80
karaj	0.07	0.03	0.37	0.1	72	72
Mahmod abad	0.33	0	0.56	0	84	84

Source: (Governor of Isfahan, 1387, 234-229).

Table 2 Total variance explained by factor and load factor (the authors, 2001)

Cumulative rotation diffraction	Rotation diffraction	Load factor rotation	Cumulative diffraction	Diffraction	Times the diffraction factor	Components
23.69395862	23.69395862	2.369395862	26.98575061	26.985750	2.69857	The first factor
40.22829665	16.53433803	1.653433803	49.56742767	22.581677	2.25816	The second factor
56.47548269	16.24718605	1.624718605	67.70262514	18.135197	1.81351	The third factor
68.14410238	11.66861969	1.166861969	78.63952518	10.936900	1.09369	The fourth factor
79.56663461	11.42253223	1.142253223	84.69015267	6.0506274	0.60506	The fifth factor
89.86006791	10.2934333	1.02934333	89.86006791	5.1699152	0.51699	The sixth factor

Table 3. Loadings on elements of tourism facilities, with Swing Kvarymaks (authors, 2001)

	The first factor	The second factor	The third factor	The fourth factor	The fifth factor	The sixth factor
Proportion to the number of rural health centers	-0.50186	0.733851	-0.12267	-0.06939	0.137967	0.229986
The number of rural doctors		0.534478	0.247574	0.085655	-0.13167	-0.30247
Proportion to the number of rural libraries	-0.64192 0.1609	0.009626	-0.67407	0.605169	0.102824	0.0447
Proportion to the number of rural sports facilities	0.43683 1	0.721417	0.042362	0.042943	-0.37917	0.188305
Benefit ratio of gas to rural villages	0.57449	0.222661	0.494005	0.339791	-0.25063	-0.28353
Proportion to the number of rural villages benefited from the post office	7 -0.54367	0.639555	-0.44306	0.055972	-0.02054	-0.09241
Proportion to the number of rural villages to benefit from cooperative	0.61500 4	0.409266	0.065801	0.377506	0.451138	-0.09659
Benefit ratio of bank branches to rural villages	-0.4277	-0.24891	0.439643	0.576159	-0.14683	0.409278
The benefit of safe drinking water to rural villages	-0.27456	0.215278	0.800892	-0.03858	0.35361	0.050392
Distance from the center of the village center	0.74550 6	0.423107	0.040362	-0.34484	0.031463	0.25855

Table 4. Villages studied loadings on Kvarymaks rotation (authors, 2001)

district	Village to city	distance center	distance to the center	The number of rural doctors Village	Proportion to the rural sports	number of facilities	The number of rural villages have a bank	The ratio of water to rural villages
Rood shat	0.5437		-0.4451	0.29159	1.16413		0.9715	-1.29145
Gav khoni	-0.56111		0.42494	0.28939	2.3161		-0.9009	-0.62489
Jarghoii sofla	-0.52216		-0.77257	0.88374	-0.87044		-0.30322	0.1911
Jarghoii vosta	0.03785		-0.83961	1.53807	-0.35956		0.95294	-0.98996
Jarghoii olia	0.4786		-1.18525	1.13551	2.10714		-0.38709	1.99572
ramisheh	0.47402		-2.08008	-2.66504	0.17804		0.62071	0.08344
abdoaziz	-0.69245		-0.41658	0.31277	-0.29772		-0.30875	-0.04877
rodashat	3.70462		0.34414	0.40345	-0.92766		-0.88997	0.02309
tooshak	-0.51744		-0.78654	0.26174	-0.32019		-0.42984	-0.07141
jabal	-0.5976		-0.61779	0.71087	-0.23696		-0.37824	0.01406
zafreh	-0.49668		-0.25442	-1.01656	-0.95327		-1.66512	0.25478
sestan	-0.64869		-0.07969	0.21902	-1.03379		-0.83671	-0.78557
Baran s	-0.27189		1.53019	-1.6185	0.80557		-0.88382	0.83556
Baran n	-0.42256		0.14963	-0.79253	-0.35675		-0.15461	-0.77408
jei	-0.5404		1.48953	0.70105	-0.48532		-0.69141	-0.55844
Ghahab s	-0.28563		0.04839	-0.45298	-0.45969		2.32418	-0.23566
Ghahab n	0.45935		1.70238	-0.34242	0.93408		0.90861	-1.31821
karaj	0.32832		0.62744	-0.32041	-0.51111		0.57521	0.81508
Mahmod abad	-0.46986		1.16099	0.46123	-0.69261		1.47654	2.4856

Qhab villages of North and South upon the highest weight And villages Ramshh lowest weight in the operating ratio to the number of physicians are devoted to the village (Figure 3). Jrqvyh Village Middle Village highest weight and lowest weight Ramshh in the center of the village to enjoy part (Figure 4). The rural districts and villages in Sistan Gavkhouni and Jrqvyh Lyy greatest weight in the lowest weight ratio to the number of sports facilities are allocated to rural areas (Figure 5). Village of South Qhab highest weight Zefreh district and the lowest weight Villages in the ratio of the number of banks have been allocated to the village (Figure 6). Highest weight and lowest weight Mahmoodabad Village Village North Qhab the ratio of water to rural villages have been allocated to.

The spatial analysis

The spatial distance between them is done by grouping parameters. The views or components that have less distance from each other are placed in a group." The cluster analysis method widely used to reduce the variable dimensions. Real value when it becomes clear that A large matrix of data we want processed "(Yarnal, 1993: 75).

The goal of cluster analysis, create groups and class segregation that diversity and distribution within the group and the group is less than diffraction (Alijani, 1381: 172). Tourism zoning process using cluster analysis may include (Ismail-Nejad, 1384: 48). A) Preparation of the raw data matrix.

B) determines the factor score for each station using factor analysis.

C) integration to the minimum variance method (the method) and determining the final classification. D) Finally, Dendrogram depicting the integration of groups at several stages

The internal correlation between variables is much closer, Emerged a number of factors will be less. Fash clusters to determine the method is used. Clustering process, all observations are grouped in proportion to their distance. The first observations so close together and then the next closest clusters are merged together. Clustering process in a number of observations, there are clusters and in the last stage, all observations are gathered in a cluster (Alijani, 1381: 175).

Finally, Dendrogram obtained from the analysis are shown in Figure 2.

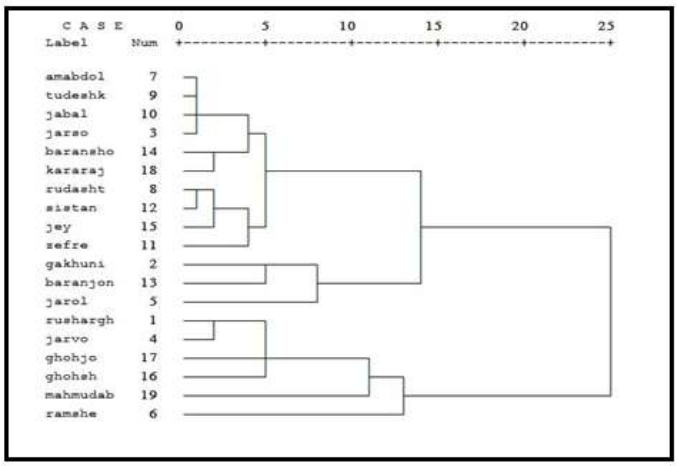

Figure 2. Tree clustering the city's tourist district (authors2011)

The cluster diagram was determined (Figure 2) that the city district of similarities in terms of tourism infrastructure services are divided into four areas;Village Imamzadeh of Abdul Aziz, Tvdshk, Jabal, Zefreh, Jrqvyh Lower, bar an shomali decides, Krarj, Rodasht, Sistan and Jay is in a tourist area, In this district are operating on the weight ratio of water to villages The number of villages, Separation from other villages because it has been. The Gavkhouni district, southern cane and tourism infrastructure are in Jrqvyh Lyy the greatest similarity.

Factor in this district than sports facilities The number of villages Maximum weight is allocated to. The next tourist area includes the villages Rodasht Eastern, Middle Jrqvyh, Mhmvabad, Qhab South and North is Qhab The village also has a village bank The number of villages and rural drinking water to many villages have similar conditions. Also due to the weight factor of Ramshh Village Bank villages to the village, the village has been separated from the other.

Research findings

In this study, component-based approach to zoning and similar tourism-prone areas have been used. Results showed that the component method based on 6 factors of about 86/89 percent is explained by the diffraction data. Mentioned factors are named as follows:

The first factor: the village to city center

The second factor: the ratio of the number of rural doctors

The third factor: the distance to the center of village

The fourth factor: the ratio of the number of rural sports facilities

The fifth factor: the ratio of rural to rural banks

The sixth factor: the ratio of water to rural villages

Giving weight to these elements and combine them in a GIS environment prone areas, tourism was identified (Figure 2). Accordingly, district and village tourism Jrqvyh oliya as the best area of Ramshh, Sistan and Zefreh tourism in terms of having been the last times. The Euclidean distance method and a gap analysis, five regions were similar in terms of tourist attractions: The first area includes the village shrine Abdulaziz Tvdshk, Jabal, Zefreh, Jrqvyh Lower, North decides, Krarj, Rodasht, Sistan is Jay. Second District: The district Gavkhouni, thoroughly covers the southern and Jrqvyh Lyy. Third District: The district includes the eastern Rodasht, Jrqvyh middle, Mhmvabad, Qhab South and North is Qhab. Fourth District: Village Ramshh is involved.

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