Prioritizing tourism destination infrastructure of Kermanshah province with the GIS and SAW technique

Hossein Mousazadeh
Ph.D. student, Department of Regional Science, Eotvos Lorand University, Faculty of science, Budapest, Hungary

Parisa Mohammadpour
Faculty Member, Assistant Professor of Research.Forests and Rangeland Research and Watershed Management Department (Research Division of Natural Resources), Gilan Agricultural and Natural Resources Research and Education Center, AREEO (Agricultural Research, Education and Extension Organization), Rasht, Iran.

Mehdi Khodadad
M.A. of Geography and Rural Planning, University of Golestan, Gorgan, Iran.

Ebrahim Moammeri
M.A. of Geography and Urban Planning, University of Golestan, Gorgan, Iran

Abstract

Leveling tourism destinations is used as an approach and strategy in order to decrease the misbalances of the area and region. In this manner, the present study is prioritizing tourism destinations infrastructure of Kermanshah province using the SAW and GIS technique. The infrastructures under study in this research includes tourism sample areas, transportation corporations, number of cinemas, theaters, fairs, Islamic holy places, gas stations, public inhabitants, transported passengers, travel agencies, and restaurants. For analyzing the related data related to the tourism infrastructures of Kermanshah province which are extracted from the annual statistics of the year 2013, the decision making technique of simple average weighting SAW in the software of excel and also in order to draw the map of spatial distribution of province's tourism infrastructure the Arc GIS software was used. The results show that although the Kermanshah province has many touristic attractions but due to not-providing of equipment and required facilitations and imbalanced in distribution of tourism infrastructures, a massive difference exists in the manner of tourism infrastructure in the province. In a manner that the Kermanshah township as the center of the province has the most tourism infrastructure and solasbabajani has put the most enjoyable and the most deprived in the province.

Keywords: Tourism infrastructure, simple average weighting technique, Arc GIS, Kermanshah province.

Introduction and statement of the problem

Leveling tourism destinations is used as an approach and strategy in order to decrease the misbalances of the area and region. Leveling in fact, is determining the required layers of a corporation which organizes units in similar levels based on separation of quantity criterion. Quantitative domains are selected in a manner that defines the level difference, duties' quantitative difference and functions (Khezri and colleagues, 2013:42). Levelling tourism areas is some criteria for determining centrality and also determining required infrastructure and adjusting inequality amongst areas. In the tourism researches until 1990, little data has been presented about levelling tourism areas, but during the recent decades, the researchers have conducted levelling tourism in the scale of regional, national and international (law Christopher, 2000:120). Planning for identifying tourism destinations, characteristics causes variety of region and tourism growth and causes vital economic stimulants (liu et al, 2012:413). In tourism planning, it is necessary that different acquirement proportionate to tourism destinations' capabilities should be performed and for determining this matter it is necessary that tourism destinations of a region should be levelled (ziaii and shojaii, 2010:37). From this manner and in order to regulate planning in proportionate to circumstances and facilitations of tourism areas with the goal of reducing the inequalities of the area, cognition and understanding the present differences amongst the areas and different regions is necessary. Otherwise, any effort which is conducted in the manner of planning and economic-social development, faces failure and would be followed by resource waste. Meanwhile, nowadays amongst the countries, the need for analyzing the matters related to tourism activities through utilization of accurate quantitative applicable and logical methods is sensed for managing tourism areas and regions efficiently more than ever (taghdisi and colleagues, 2014:198). For successful tourism development, existence of appropriate infrastructures is necessary and especially for countries and less developed areas which have limited infrastructures often, existence and extension of it is considered as a vital factor (inskeep, 1991:119). Determining poles and excel centers and levelling them in tourism development, in order for better services, social and economic justice in the area is necessary (shamaii and mousavand, 2011:26). It should be considered that the tourism levelling has a different concept

than tourism zoning, in a manner that in an area, multiple region/destination with different roles and different types of tourism (historical, cultural, environmental, commercial, religious, etc.) could exist. in addition to this, in the concept of levelling, convergences, consensuses and different areas' variables, are not very effective but this is the power of tourism development that puts different destinations of an area in one level. In tourism levelling, destinations with capabilities and tourism abilities with same value and level are put in one level not that they are rated in a vertical construction (jalali and khademolhosseini, 2015:154). Therefore, levelling attraction and tourism destination as a part of the spatial and regional tourism planning is very important and it is needed that the spatial distribution of attractions in these areas with supporting service infrastructures should be analyzed (kalantari and malek, 2014:56). In this manner, many researches and studies had been conducted in the country and worldwide including:

Khezri and colleagues (2013), in a research with the title of levelling the fars province townships based on tourism criteria using the factor points' method have concluded that the distribution of equipment and tourism infrastructures in the fars province's townships is not synced. Khatami and firuzabadi (2013), in a research have conducted the levelling of tourism shores of south of Iran using the AHP method and the results showed that Kish has been acknowledged as the best tourism shore. Ghanbari and colleagues (2014), in a research with the title of levelling the townships of eastern azarbaijan province based on urban tourism infrastructures with the decision making methods with multi criterion and piersonchully coefficient have concluded that first the townships of Tabriz, maraghe and shabestar are the three first townships and varzaghan, charavimagh and khodaafarin are the three last townships in the levelling based on acquiring the urban tourism development. Pourahmad and colleagues (2015), in a research utilizing the multi-criterion decision making to evaluate the tourism capabilities of the Semnan province and the results show the lack of unbalanced and unequal distribution of infrastructures and tourism capabilities in the province.Choghajerdi and mokhtarimalekabadi (2016), have conducted in a research, the levelling of Isfahan townships from the manner of sport tourism infrastructures using the

HDI model and have concluded that the Isfahan province from the sport tourism manner is in the poor state. Sahne and moamerri (2017), in a study have prioritized the tourism development equipment and its spatial distribution in the golestan province using the multi-criterion decision making have concluded that the Gorgan townships with the point coefficient of 13 and Gonbad-e-kavoos with the point coefficient of 11 with the first rank from the manner tourism criteria have a desirable state and Gomishan township with the coefficient of -11 and maravetapewith the coefficient of -13 are in the deprived state and 10 other townships are in the semi-acquired state.

Dang, king and baer (2002), in the evaluation of victoria's natural park's natural attractions in Australia have levelled this park into 4 levels from the manner of tourism capabilities and concluded that the AHP could aid the managers in selecting the appropriate place for tourists and prioritizing investment. Asadi and colleagues (2011), in a research with the subject of strategies for tourism cure development in Iran which have used the Topsis model have concluded that they should prioritize the offensive strategies and according to the various strength points of the cure tourism industry in Iran, amongst offensive strategies, production and development of the market were recommended and using the Topsis strategy, they have prioritized the cure tourism in Iran. Hiangandping (2012), in their study with the Phase and topsis model have evaluated the competition in tourism industries in nine south eastern Asian countries. This study was performed in 2009 using 6 criteria (attractions' accessibility, appropriate transportation, appropriate costs, safety, products' market, natural sights) and 15 sub-criteria which have been weighted in different sectors and finally the evaluation was performed. The results show that in the rating, amongst nine countries, based on the foretold criteria, in order china, japan, Hong Kong, Malaysia, Thailand, Singapore, Taiwan, Korea and Philippines had the best performance (moosavi and colleagues, 2015:20).

Iran from the manner of tourism attractions is one of the ten first countries of the world and from the manner of historical artifacts is one of the first five regions in order of ecotourism attractions and various vegetation and animal kinds (tajali, 2006:4). Evaluating the townships from the manner of acquiring the tourism criteria need special social and economic development programing for each area (moosavi and colleagues, 2015:19). According to the importance of

tourism industry from one side and existence of tourism potentials in the Kermanshah province from the other side, the rating of different areas of this province in order of effective and appropriate planning in order of better service and social and economic justice in different area levels are necessary.

Materials and methodology
Methodology

The present study with nature of developmental-applicable and a combined (descriptive, documental and analytic) methodology have conducted the levelling of Kermanshah's province townships from the manner of tourism infrastructures. In this research, the tourism infrastructures include: tourism sample areas, transportation corporations, number of cinemas, theaters, fairs, Islamic holy places, gas stations public inhabitants, transported passengers, travel agencies, and restaurants. For analyzing data related to tourism infrastructures of Kermanshah province which was extracted from the annual statistics of 2013, the SAW technique in the excel software was used and also in order to draw the map of spatial distribution of province's tourism infrastructure the Arc GIS software was used.

Area under study

Kermanshah province with an area equal to 24434.25 square kilometers and is limited to kordestan from north, lorestan and ilam from south and east to Hamedan and from west to Iraq. This province in the year of 2011 had 12 townships including: western Islamabad, paveh, javanrood, ravanasar, solasbabajani, sarpolzahab, songhor, sahne, ghasreshirin, Kermanshah, kangavar, western guilan and hersin/ based on the 2011 census, its population was equal to 1945227. Based on the latest country divisions, the Kermanshah province has 14 townships, 28 cities, 29 districts, 85 rural areas (noori and taghizade, 2011). (table 1)

Table 1: general indications of sample tourism areas in Kermanshah province

name of the pole	Covered cities	Covered sample areas
Kermanshah	Kermanshah, Bistun, Harsin	Nozhioran, Taghebostan, Bisotun, TalabHasheylan, SarabNiloufar, SarabHarsin, Gharehso River, Gamasiab River, SarabGhanbar, Sohrab Fountain
GhasreShirin	GhasrShirin, Gilan-e-Gharb, SarpolZahab	Piran, Cham Imam Hassan, SarabGelin, Charkhapi, Tang-e-Hamam, Gilan-e-Gharb, Hot seabream, Qasr-e-Shirin palm groves, BaziDeraz, Sarab-Mort, Deira district
Islam Abad-e-Gharb	Islamabad-e-Gharb, Kandahar-e-Gharb, Dalahu	SarabKarand, Shiyan Temple, Morsad forest park, Sharafabad mirage, Rijab

Kangavar	Sahne, Sonqar, Congawer	Dar band Sahne, Charmlahila, Sara banafsh- Garoos waterfall, The temple of Anahita,Gazanhele, Maran Mirage, Sirjan, Badr and Parishan
Oramant	Ravansar, Javanrood, Pave, Salas Babajani	Dalani, GhooriGhale, Nodishe, SarabRavasar, Shervine, Hajij, Shamshir, Cheshmerize, Ozgolebemoo, Vis algharn, Mamishan, SefidBarg, Bid Miri, Nosood, BoozinMarkhil

(source: noorizade and colleagues, 2012:82)
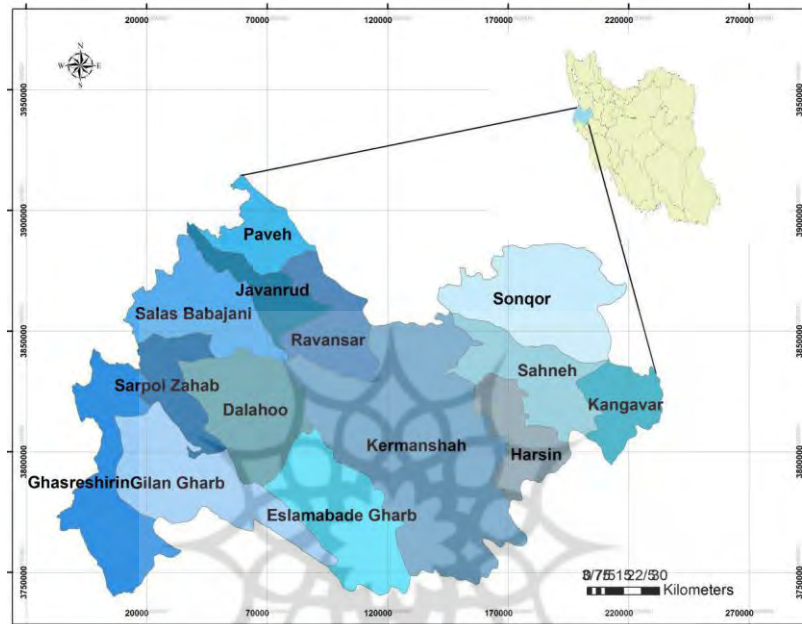
Fig1: Kermanshah province's location

Analysis
Levelling with the SAW technique

One of the levelling methods of the areas under study is the SAW technique. This technique was used for the first time during the world war with the purpose of operational optimization. Since then, this method has been used in different sciences especially social sciences in a vast manner for its simplicity and low error coefficient (rahnamaii and colleagues, 2011:228). For using the foretold technique, the performance of these steps are necessary:

Step one: decision making matrix formation

Step two: un-scaling; in the SAW technique, in order for the decision making matrix's columns to have a similar unit in manner that we could easily compare them, the linear un-scaling (equation1) is used:

Equation 1:
$$n_{ij} = \frac{aij}{\max aij}$$

Step three: criteria weight determination;
Determination of criteria weights is performed using their entropy.
Following with the un-scaled matrix times the weight of criteria.

Table2: decision making matrix

criteria / township	tourism sample areas	transportation corporations	number of cinemas	theaters	fairs	Islamic holy places	gas stations	public inhabitants	transported passengers	travel agencies	restaurants
Western islamabad	2	11	0	1	6	3	8	6	1077	3	138
Paveh	7	1	0	3	5	3	6	8	131	0	82
Solasbabajani	3	0	0	1	3	0	3	0	0	0	0
Javanrood	2	3	0	1	4	2	2	2	219	2	92
Dalahoo	2	0	0	2	3	2	2	0	119	0	0
Ravansar	3	1	0	1	3	1	4	0	145	0	0
Sare pole zahab	4	2	0	2	6	1	3	1	420	1	51
Songhor	3	3	0	1	4	11	4	4	210	1	75
sahne	3	0	0	2	5	7	7	1	87	1	46
Ghasreshirin	3	0	0	1	5	2	3	21	156	1	40
Kermanshah	6	13	2	5	21	9	47	63	2921	36	939
kangavar	3	1	0	1	5	3	8	0	87	2	94
guilangharb	4	2	0	2	5	1	2	1	244	0	37
Hersin	5	0	0	2	4	2	5	0	280	2	41
max	7	13	2	5	21	11	47	63	2921	36	939

Sources: research findings, 2017

Table 3: synchronized un-scaled matrix

criteria / township	tourism sample areas	transportation corporations	number of cinemas	theaters	fairs	Islamic holy places	gas stations	public inhabitants	transported passengers	travel agencies	restaurants
Western islamabad	0/285714	0/846154	0	0/2	0/285714	0/272727	0/170213	0/095238	0/368709	0/083333	0/146965
Paveh	1	0/076923	0	0/6	0/238095	0/272727	0/12766	0/126984	0/044848	0	0/087327
Solasbabajani	0/428571	0	0	0/2	0/142857	0	0/06383	0	0	0	0
Javanrood	0/285714	0/230769	0	0/2	0/190476	0/181818	0/042553	0/031746	0/074974	0/055556	0/097977
Dalahoo	0/285714	0	0	0/4	0/142857	0/181818	0/042553	0	0/040739	0	0

township / criteria	tourism sample areas	transportation corporations	number of cinemas	theaters	fairs	Islamic holy places	gas stations	public inhabitants	transported passengers	travel agencies	restaurants
Ravansar	0/428571	0/076923	0	0/2	0/142857	0/090909	0/085106	0	0/049641	0	0
Sare pole zahab	0/571429	0/153846	0	0/4	0/285714	0/090909	0/06383	0/015873	0/143786	0/027778	0/054313
Songhor	0/428571	0/230769	0	0/2	0/190476	1	0/085106	0/063492	0/071893	0/027778	0/079872
sahne	0/428571	0	0	0/4	0/238095	0/636364	0/148936	0/015873	0/029784	0/027778	0/048988
Ghasreshirin	0/428571	0	0	0/2	0/238095	0/181818	0/06383	0/333333	0/053406	0/027778	0/042599
Kermanshah	0/857143	1	1	1	1	0/818182	1	1	1	1	1
kangavar	0/428571	0/076923	0	0/2	0/238095	0/272727	0/170213	0	0/029784	0/055556	0/100106
guilangharb	0/571429	0/153846	0	0/4	0/238095	0/090909	0/042553	0/015873	0/083533	0	0/039404
Hersin	0/714286	0	0	0/4	0/190476	0/181818	0/106383	0	0/095858	0/055556	0/043663
Weight	7/142857	2/846154	1	5	3/761905	4/272727	2/212766	1/698413	2/086957	1/361111	1/741214
	0/007862	0/092739	0/273361	0/015658	0/020316	0/040297	0/062976	0/137133	0/085636	0/158706	0/105317

Sources: research findings, 2017

Table 4: determination of criteria weights

Western islamabad	0/002246	0/078472	0	0/003132	0/005804	0/01099	0/010719	0/01306	0/031575	0/013225	0/015478
Paveh	0/007862	0/007134	0	0/009395	0/004837	0/01099	0/008039	0/017414	0/003841	0	0/009197
Solasbabajani	0/003369	0	0	0/003132	0/002902	0	0/00402	0	0	0	0
Javanrood	0/002246	0/021401	0	0/003132	0/00387	0/007327	0/00268	0/004353	0/00642	0/008817	0/010319
Dalahoo	0/002246	0	0	0/006263	0/002902	0/007327	0/00268	0	0/003489	0	0
Ravansar	0/003369	0/007134	0	0/003132	0/002902	0/003663	0/00536	0	0/004251	0	0
Sare pole zahab	0/004493	0/014268	0	0/006263	0/005804	0/003663	0/00402	0/002177	0/012313	0/004408	0/00572
Songhor	0/003369	0/021401	0	0/003132	0/00387	0/040297	0/00536	0/008707	0/006157	0/004408	0/008412
sahne	0/003369	0	0	0/006263	0/004837	0/025644	0/009379	0/002177	0/002551	0/004408	0/005159
Ghasreshirin	0/003369	0	0	0/003132	0/004837	0/007327	0/00402	0/045711	0/004573	0/004408	0/004486

Kermanshah	0/006739	0/092739	0/273361	0/015658	0/020316	0/032971	0/062976	0/137133	0/085636	0/158706	0/105317
kangavar	0/003369	0/007134	0	0/003132	0/004837	0/01099	0/010719	0	0/002551	0/008817	0/010543
guilangharb	0/004493	0/014268	0	0/006263	0/004837	0/003663	0/00268	0/002177	0/007153	0	0/00415
Hersin	0/005616	0	0	0/006263	0/00387	0/007327	0/0067	0	0/008209	0/008817	0/004599

Sources: research findings, 2017

Table 5: rating the Kermanshah province's townships based on tourism infrastructures with the SAW model

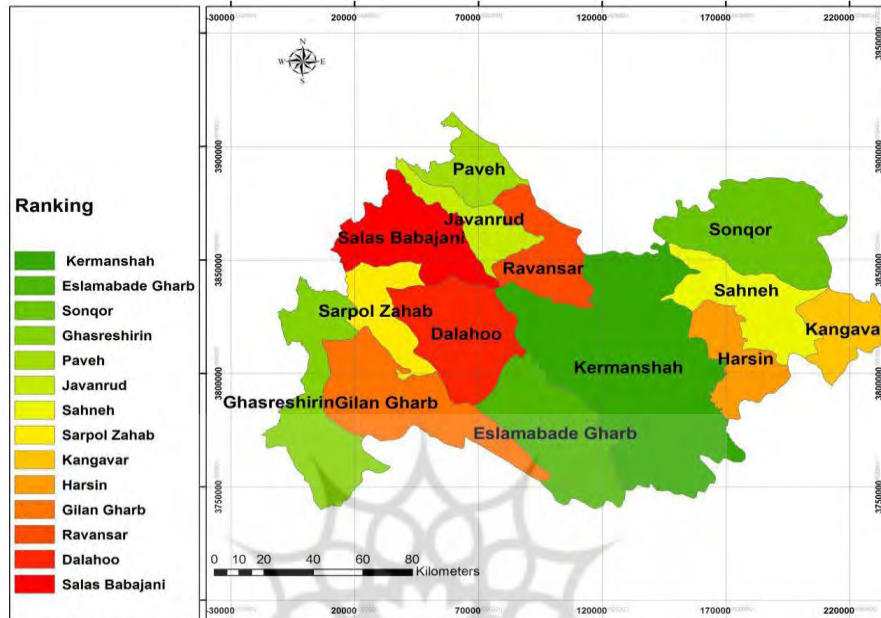| Rank	Township	coefficient
1	Kermanshah	0/99155
2	Western Islamabad	0/184702
3	Songhor	0/105113
4	Ghasreshirin	0/081864
5	Paveh	0/078709
6	Javanrood	0/070565
7	Sahne	0/063788
8	Sarepole zahab	0/063129
9	Kangavar	0/062092
10	Hersin	0/051399
11	Guilangharb	0/049684
12	Ravansar	0/029811
13	Dalahoo	0/024907
14	Solasbabajani	0/013423

Sources: research findings, 2017

Fig 2: rating the tourism infrastructure of Kermanshah province's townships with the SAW technique

Conclusion

One of the main efforts done for development of Iran's tourism is rating the infrastructure and adjustment of inequalities in different areas of the country. In this manner, the present study with the nature of developmental-applicable and a combinational methodology (descriptive, documental and analytic), have conducted the levelling of Kermanshah province's townships in the manner of tourism infrastructures. In this study the infrastructures under study include tourism sample areas, transportation corporations, number of cinemas, theaters, fairs, Islamic holy places, gas stations public inhabitants, transported passengers, travel agencies, and restaurants. For analyzing the related data related to the tourism infrastructures of Kermanshah province which are extracted from the annual statistics of the year 2013, the decision making technique of simple average weighting SAW in the software of excel and also in order to draw the map of spatial distribution of province's tourism infrastructure the Arc GIS software was used. The results show that although the Kermanshah province has many touristic attractions but due to not-providing of equipment and required facilitations and imbalanced in distribution of

tourism infrastructures, a massive difference exists in the manner of tourism infrastructure in the province. In a manner that the Kermanshah township as the center of the province has the most tourism infrastructure and solasbabajani has put the most enjoyable and the most deprived in the province. So in order to achieve the social justice in distribution of tourism infrastructure in the Kermanshah province, the following recommendations was presented.

• Acknowledging the capacities and values of the area to the local society and more education of appropriate behavior to the tourists by the people.

• Confronting the seasonal limitations with utilization of the area's high capabilities due to existence of historical, cultural and natural attractions in the province.

• Considering the matter of constructing midway restaurants and appropriate and consecutive supervision on the health state of the midway service centers and existing restaurants in order to provide tourists and people with appropriate and adequate services.

• Utilization of investment capabilities of the governmental and private sectors in order to create, reconstruct, development of services and equipment and infrastructures.

• Development of social justice in townships which have a lower rate of tourism infrastructures.

Resources

1. Pour Ahmad, Ahmad, Shahbazpour, Ahmad &Khaliji, Mohammad Ali (2015), Utilizing Multivariate Decision-Making Models in Assessing Tourism Capabilities of Case Study of Semnan Province, Geographical Survey of Arid Areas, Sixth year, 20th and 1st, Autumn, Pages 66-50.
2. Tajali, Masoume, (2006), Economic Impact of Tourists in the Islamic Republic of Iran, Master Thesis for Economic Sciences, Assistant Professor FatemehBazazan, Alzahra University, Tehran.
3. Taghdisi, Ahmad, Taghvayi, Masoud&Piri, Siamak (2014), Evaluation and Leveling of Villages in Dalahu City Based on the Capacity of Tourist Resources in attracting tourists, Geographical Survey Quarterly, 29, No. 4, Winter, pp. 214-197.
4. Jalali, Mahboube&KhademAlhoseini, Ahmad (2015), Levels of Tourism Types in Kerman Province, Regional Planning Quarterly, Vol. 5, No. 17, Spring, pp. 162-151.
5. Choghajerdi, Iman&MokhtariMolkabadi, Reza (2016), Levels of Isfahan City for Sporting Tourism Infrastructure by Using HDI Model, New Attitudes Quarterly in Human Geography, Eighth Year, No. 4.

6. Khatami Firoozabadi, Ali, Asgarpour, Hosein&Bakhshande, Ghasem (2013), Ranking of tourist beaches of southern Iran by using AHP method, Journal of Tourism Management Studies, Eighth Edition, No. 23, pp. 96-71.

7. Khezri, Hosein, KhademAlhoseini, Ahmad &Ghaed Rahmati, Safar (2013), Levels of Fars Province Cities Based on Tourism Indicators, Geography Quarterly and Environmental Studies, Second Year, No. 6, Summer, pp. 54-42.

8. Rahnamayi, Mohammad Taghi, AyoobManouchehriMian Doab, & Amin FarajMalayi (2011), Analysis of urban quality of life in wastewater, Miandoab, Urban Management, No. 28, 223-240.

9. Zebardast, Esfandiar&Haghrousta, Somaye (2015), Comparative analysis of regional inequalities among neighboring provinces of Case study: Hamadan and Central provinces, Urmia, No. 15, Autumn and Winter, p. 113.

10. Shamayi, Ali &Mousavand, Jafar (2011), Leveling of Isfahan Province Cities in terms of Tourism Infrastructure Using TOPSIS and AHP Model, Urban and Regional Studies and Research, Third Year, No. 10, Autumn, pp. 40-23.

11. Sahne, Bahman &Moameri, Ebrahim (2017), Prioritization of Tourism Development Facilities and Its Spatial Distribution (Case Study: Golestan Province), Regional Planning Quarterly, Volume 7, Issue 26, Summer, pp. 24-15.

12. Ziyaii, Mahmoud &Shojaii, Moslem (2010), Leveling Tourism Destinations: New Conceptual Analysis in Spatial Planning Tourism Journal of Tourism Studies, No. 13, Tehran. Pages 46-25.

13. Ghanbari, Abolfazl, Shojaiivand, Bahman &Zeinali, Bahram (2014) Ranking of cities in East Azarbaijan province based on urban tourism infrastructure with multi-criteria decision making, geography and urban-regional planning, No. 12, Autumn, Pages 112-89.

14. Kalantari, Mohsen &Malek, Marzie (2014), Spatial Analysis and Leveling of Tourism Attractions and Communication Infrastructure and Road Network in Desert Regions of Iran (Case Study: Khor and Biabanak Township), Geographical Studies of Arid Areas, Fifth Year, Seventh, Autumn, pp. 70-53.

15. Statistics Center of Iran, Detailed results of the Population and Housing Census (Kermanshah Province, 2011).

16. Maleki, Saeed &Mavesat, Elias (2014), An Analysis on the Distribution and Prioritization of Tourism Infrastructure in Yazd Province Using Planning Techniques, Journal of Applied Geosciences Research, Vol. 14, No. 34, Autumn, pp. 68-47.

17. Mousavi, Mirnajaf, Veisian, Vahid, MohammadiHamidi, Somaye& Akbari, Mahnaz (2015), Investigating and Prioritizing the Power and Infrastructure of Tourism Development with Multi-Criteria Decision Making (Case Study: Cities of Kurdistan Province), Urban Tourism Journal, Volume 2, Number 1, Spring, pp. 31-17.

18. Nouri, Gholamreza&Taghizade, Zahra (2011), The feasibility of the Sarab potential of Kermanshah province from the viewpoint of ecotourism and nature tourism, Proceedings of the first national tourism and sustainable development conference of the Azad University of Hamedan.

19. Nouri, Gholamreza, Fotuhi, Samad&Taghizade, Zahra (2012), Prioritizing the tourism poles of Kermanshah province based on the potential of tourism destination areas using the multi-criteria decision making method of Topsis, geography and environmental sustainability, No. 4, Autumn, pp. 94-75.

20. Asadi, R. and Daryaei, M., (2011), Strategies for Development of Iran Health Tourism,European Journal of Social Sciences, Volume 23, Number 3. pp:329-344.

21. Deng.J, King.B and Bauer.T (2002), Evaluation natural attractions for tourism, Annals ofTourism Research, Vol. 29, No. 2, pp. 422–438.

22. Inskeep, E, (1991), Tourism Planning: AnIntegrated and Sustainable Approach, NewYork, John Wiley & Sons.

23. Law Christopher m., (2000), the tourist city review, urban studies, vol 37, no 7.

24. Liu, Chui-Hua &Tzeng, Gwo-Hshiung& Lee, Ming-Huei (2012), Improving tourism policyimplementation e The use of hybrid MCDM models, Tourism Management 33, pp 413-426.