

Urban Planning

Evaluation of Creative City Indicators of Qazvin City in Order to Explaining the Trend and Determining the Dominant Field of Creativity

Kh. Shamsi¹, Z. Karkehabadi^{2,*}

¹PhD, School of Geography and Urban Planning, Semnan Branch, Islamic Azad University, Semnan, Iran

²Assistant Professor, School of Geography and Urban Planning, Semnan Branch, Islamic Azad University, Semnan, Iran

Received: 11 September 2016, Revised: 5 January 2018, Accepted: 22 January 2018, Available online: 28 February 2018

Abstract

The aim of evaluating and studying the creative city indicators of the city of Qazvin is to determine the creativity trend of this city during the past years and to recognize the dominant field of creativity for this city. Therefore, this study has tried to analyze the creative city indicators about the city of Qazvin by using "descriptive-analysis" method as well as applying secondary data, TOPSIS model, AHP model and SPSS software. First, 13 indicators have been collected to determine the creativity trend from 2009 to 2015, then the current trend of creativity in recent years has been obtained using quantitative models. Regardless of the year 2009 and the years before that, the best rank belongs to 2013 with 0.3228 scores. Generally, the creativity trend has decreased with a gentle slope in recent years. In the following sections, within introducing the dominant field of creativity among the five investigated fields, this conclusion has been made that the city of Qazvin has potentials to move toward a creative city.

Keywords: Index, Creative city, City of Qazvin, Urban planning models, Garlic creativity.

1. INTRODUCTION

We have seen great alterations in cities during the 21st century so that the economics of city centers mostly depended on service activities than manufacturing activities [1]. At the same time, the criteria to assess the success of places have been changed so that in today's world, a successful city is the one, which focuses on the third section of manufacturing containing banking, technology and creative activities [2]. Therefore, it is necessary that the current economic, spatiotemporal and cultural systems of the cities could easily adapt themselves to new economics. Montgomery stresses that with the new economy; cities would be successful, which vastly invest in developing their creative capacities. If cities want to be successful and earn and sustain a long-term competitive advantage, they should not forget their cultural capacities [3]. This subject represents alterations in perception of the city space and the guiding forces of the city developments [4]. In this regard, since the mid-1990s, with introduction of the idea of "creative city", this new strategy has been a progressive idea for urban and economic planners in the

field of the old industrial cities revitalization. Therefore, the spreading of this idea in these societies, in turn, has increasingly made developing tools in cultural and artistic fields [5]. Nowadays, during the global competition of cities, culture, entertainments, consumerism and city facilities play a crucial role in strengthening the position of cities [6]. Creative cities are respectable due to their aesthetics and ability to improve the perception and communications. People can enjoy the creative activities in their daily lives where the cultural diversity is cherished and a creative expression in all its forms is encouraged [7]. The concept of "creative city" has been apparently created based on the experience of "cultural city of Europe" and "cultural capital of Europe" introduced by the European Union in the mid-1980s. However, some researchers have argued that creative city policies even before such events have been originated from the entrepreneurship competitions for investment [8]. The creative city, in particular, is a form and process of urbanization in which the creativity stands at the forefront. Here, creativity refers to a process through which a field of culture turns into a symbolic mode. The birth of new songs, new ideas, and new cars is the limits of creativity [9] As a result; a creative city and consequently a new city should be the result of a common change in current paths and profit-driven urban development [10].

* Corresponding author: Z.karkehabadi@yahoo.com
Tell: +982333654040; Fax: +9823-33654049

Iranian cities also have a wide range of facilities and services as the absorbent of the creative capital, having the proper field for keeping and providing the life with relative prosperity [11]. In this regard, investigating the potential and operation of Iranian cities in competitive international cultural and artistic networks is highly important. The concern is that how a part of this reached civilization could be introduced to the cultural and artistic networks of the world beyond the symbols. How can it be turned into a dynamic and full pulse-pounding, which through its travel from far past to nowadays, keeps its identity and authenticity not to be forgotten [12]? However, the spectrum of discussion on this subject is very wider than the current research. This study only focuses on the creative city indicators at the level of Qazvin areas to determine the creativity trend of recent years, and the dominant role of creativity in this city to finally address these questions:

- Has the city of Qazvin moved in recent years to adapt to indicators of the creative city?
- Which of the five fields is the dominant field of the creative city of Qazvin?

2. IMPORTANCE AND NECESSITY OF RESEARCH

In the 21st century, we observe dramatic changes in cities such that the economy of city centers is addicted from production activities to servicing activities [1]. Parallel to this change, the criteria of evaluating the success of locations are also changed so that now in the world, a city is successful that is concentrated on the third part of production i.e. banking, technology and creative activities [2]. Therefore, it is necessary for the current economic, spatial and cultural system of cities to be able to adapt to the new economy. Montgomery emphasizes that in a new economy, those cities are successful that have wide investment in developing their creative capacity. Cities, large or small, must accept the best creative ideas and talents from all over the world. Cities need targeting the method of using efficiency and influence of all their resources for competitiveness, including economic, political and especially cultural resources. Cities must not forget their creativity and cultural potential if they want to be successful and to obtain and preserve a stable and long-term competing advantage [3]. This subject shows the change of tendency to urban space and conducting forces of city development [4].

Qazvin has stimulated the demanders of establishing industrial units to invest in this province due to the vicinity to Tehran and prohibition of constructing industries within 120km of Tehran. On the other hand, the presence of many artistic, educational and tourism centers along with the communicating situation of the city bridging six provinces of Tehran, Hamadan, Zanjan, Markazi, Gilan, Mazandaran, and also east-European countries via Turkey, has resulted in making this city unique at national and international levels.

3. RESEARCH LITERATURE

Foord (2012) investigated the role of technology in one study entitled "The new boomtown? Creative City to Tech City in East London" as an element of creative city in east London and the results demonstrated that developing the technological level in the city leads to city developments technologically [13].

"Creative Cities and/or Sustainable Cities: Discourses and Practices" is another study conducted by EugenRatiu (2013) to evaluate the concepts of creative and sustainable cities. He concludes that creative cities and sustainable cities are complementary concepts resulting in collective identity, social belonging and a deeper sense of belonging to the place [14].

Additionally, Vanolo (2015) published a study titled "the Fordist City and the Creative City: Evolution and Resilience in Turin, Italy" investigating Turin as one of the industrial and historical cities of Italy precisely to explain the evolution process of this city from Fordism era to the contemporary period and converting it to a creative city in cultural economic industries. He focused on the flexibility principle to show the change of this city from an old industrial structure to a modern city. Finally, he mentioned the automobile industry of Fiat factory in the recent past of the city to explain how the city transitioned from a one-good consumer city to a creative city with many cultural economic potentials [15]. Therefore, in parallel with the above-mentioned research, we have attempted to assess and analyze indices of the creative city of Qazvin.

4. RESEARCH METHODS

This applied study uses a descriptive-analysis method. The data collection in this research employed librarian, fieldwork, documents, descriptive and analytical methods. The data collection tools to evaluate creative city criteria are 12 indicators of the creative city gathered from population and housing census, statistical yearbooks, municipalities, higher education, science and technology parks, growth centers and relevant organizations and institutes. Since the nature of the study demands the analysis of statistical data, SPSS and Excel software were used. Then, using regional planning models, the ranking of the regions and determining the coefficient of importance of each criterion have been addressed. In the next step, map of three regions of Qazvin city would be designed in GIS setting with regard to creative city indicators.

5. STUDY AREA

The study area includes the city of Qazvin and its surroundings with an area of 10464 hectares in the geographical coordinated of 49 degrees, 56 minutes and 54 seconds to 50 degrees 3 minutes and 36 seconds east longitude, and 36 degrees 14 minutes and 25 seconds to 36 degrees, 20 minutes and 3 seconds of north longitude that

altogether contains province and city of Qazvin. (Map No. 1). The Qazvin city was divided into 3 regions, including region 1 with 1060.13 hectare area and 104360 inhabitants, region 2 with 1312.45 hectares area, consisting of the north

areas of Taleghani Street and south-east of Moalem Boulevard with 158699 inhabitants and finally, region 3 with 1300 hectares area and 118539 inhabitants that is the largest region in Qazvin.

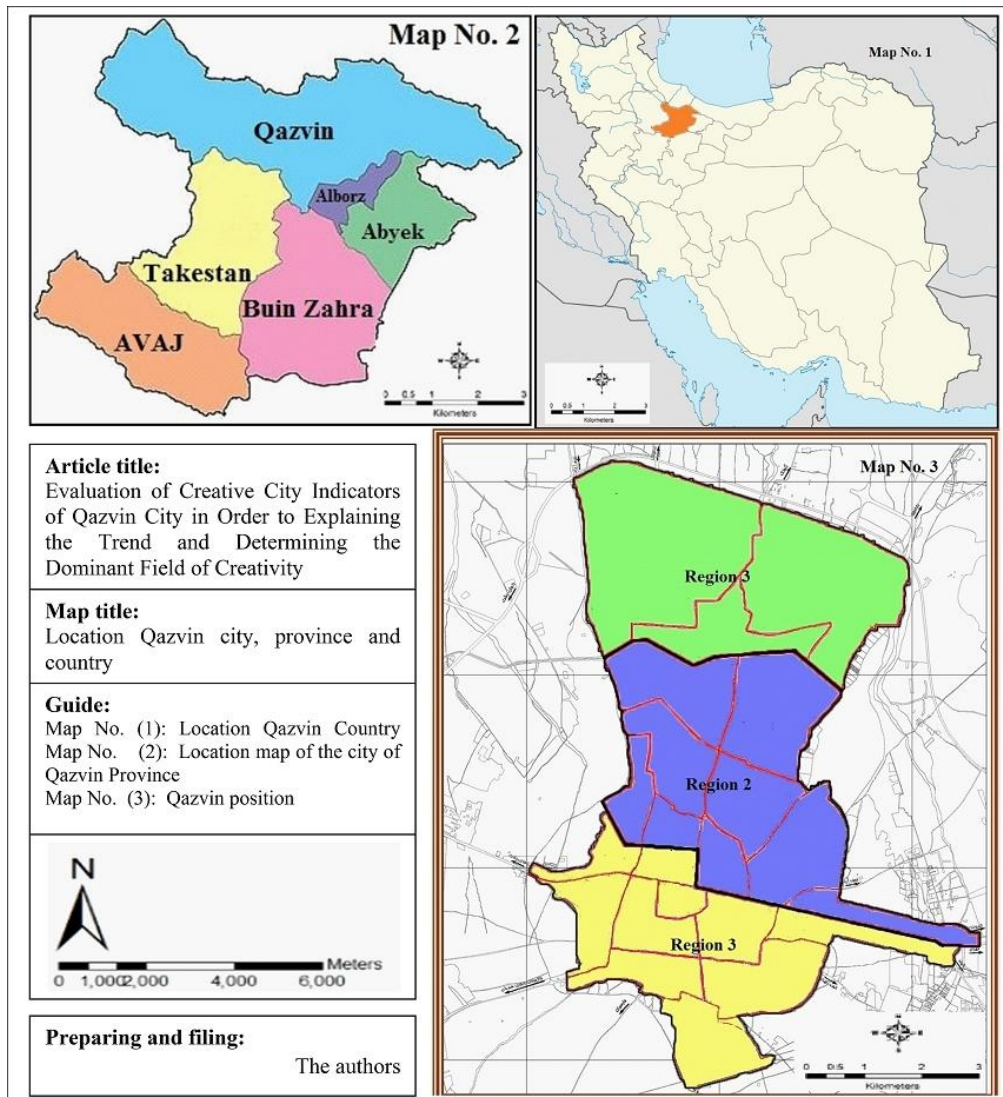


Fig. 1 Geographical location of the study area of the city, province and country

6. DEFINITIONS, CONCEPTS AND THEORETICAL PRINCIPLES

Human civilization moves toward urbanization with acceleration in the 21st century so that the world more and more becomes a world full of cities [16]. The cities with 50% of the total world population [17], and in 2007, this ratio rose to 60% of the total population while in 1900; only 10% of the world population lived in the cities. Population increase in cities and relative cultural, social and economic issues caused this subject to attract considerable attention, therefore, it can be mentioned that the basis of developing countries is cities [18].

In this context, cities and urban areas use new competitive parameters usually demanding revisiting traditional strategies by discovering innovative economic patterns and employing new competitive approaches to

survive in the international arena. During recent years, most of world cities experienced considerable changes in a series of regional improvement activities such as urban competition by their creation or absorption [19].

“Deborr” was the first one to raise discussion entitled “Spectacle City or City Show”. He stresses immature emergence of the idea of combining economic and cultural spaces at human level, especially in subjects such as new productive spaces, cultural collections and to display the visual environment in metropolises around the world. The first one who raised the discussion about creative cities and regions is Richard Florida. He published a book entitled “Creative Class” in 2002 and later another book in 2005 to strengthen his subject. Alan Scott in 2007 used the literature applied by Richard Florida to discuss some issues about connection of cities and creative regions [20].

A creative city is a strong city in terms of cultural and inter-cultural learning. In such a city, every citizen believes in his scientific, technical, artistic and cultural capacities [21]. The creative city theory attempts to describe qualities so that the imaginary picture of a city for citizens becomes more beautiful and its memory more long-lasting. This theory evaluates creativity as a general intelligence, therefore increasing in innovation potential and knowledge productivity is among the criteria to evaluate social developments [22].

Until today, creative cities network contains 34 members, including members of Europe, Latin America and Asia. UNESCO is committed to encourage candidates from represented regions of Africa and Arab countries seeking to join the network [23]. According to the statute establishing the creative cities network, its objectives include:

- 1- Increasing and promoting solutions for creating, manufacturing, distributing and benefiting from cultural goods and services at local level;
- 2- Spreading creativity, especially among the vulnerable groups, including women and youth;
- 3- Improving accessibility and participation in cultural life and also enjoying cultural products;
- 4- Integration of cultural and creative industries within the local development programs; [24]

Both theories of traditional human capital and creative class concepts suppose that talented people are more active than others and their absorbance plays a vital role in economic growth. In fact, in Florida’s words, the competition conditions around the center of a nation include “ability to mobilize, attract and retain talented creative people” [25]. It can be mentioned with emphasizing that publications of two books by Richard Florida, *The Rise of Creative Class* (2002) and *The Flight of the Creative Class* (2005) attracted considerable

attention from regional economists and scientists in analyzing concepts related to creative class and creative capital. He explains the creative class in detail as follows “a class consisting of people who add economic value they is produced through their creativity.” This class comprises of experts such as physicians, lawyers, scientists, engineers, and university professors and in particular, bohemians like artists, musicians and sculptors. The thing making creative capital among the people can be defined as “the innate potential of human to create new ideas, technologies, business models, cultural forms and new real important industries” [26]. The value of people’s presence in creative cities as a vital element is as far as that researchers mention that “creative cities and individuals for so many years have been present with people. Ancient Athens and its philosophers are original examples for this matter [27]. We can mention that during the last decades, we have seen increasing roles of cultural and creative industries in world urban development. The trend can be traced in 1960s alterations when economists such as Edward Banfield and Daniel Bell argued that allocation cultural values to product shad many incentives for economic growth [28].

7. DISCUSSION

7.1. Evaluation of creativity trend in the city of Qazvin until 2015

This section describes the information related to 13 indicators of creative city and creative class recognition gathered from the Culture and Islamic Guidance Organization of Qazvin from 2009 to 2015 as shown in Table 1 to define the creative trend of Qazvin during the years.

Table 1 All events and cultural and artistic production in Qazvin until 2015 [29]

Index	2015	2014	2013	2012	2011	2010	2009 years and before that
Museums	1	0	1	1	0	0	7
The number of visitors to the museums and monuments	451132	446589	430670	371021	349216	309780	449260
Parks	1	0	0	0	0	1	39
Universities and educational institutions	0	1	0	5	1	3	17
Films produced	39	5	50	21	24	25	0
The number of theater production	15	35	116	71	77	116	0
The number of music produced	17	44	94	51	49	41	0
The number of titles published books	21	364	270	187	240	221	0
The number of publications	39	39	41	40	39	37	48
The number of journals	40	43	49	50	59	69	18
Atheneums	0	0	0	0	0	0	1
The number of festivals and conferences	10	15	39	35	50	32	0
The number of exhibitors	174	73	75	176	65	152	0

7.1.1. Determination of creative trend of Qazvin using TOPSIS technique

7.1.1.1. Weighing the information with AHP technique

Based on the results of AHP technique, parks with the score of 0.151 were at the top of the indicators and other

indicators such as higher education institutes and universities (0.118), the number of books published (0.188), the number of exhibitions (0.089), the number of published journals (0.086), the number of published papers (0.077), the number of held festivals (0.075), the number of produced films (0.070), the number of museum and historic sites visitors (0.063), the number of produced

music albums (0.048), the number of produced theaters (0.039), the number of museums (0.036) and finally the

number of literary associations (0.029) have been ranked, respectively Diagram 1.

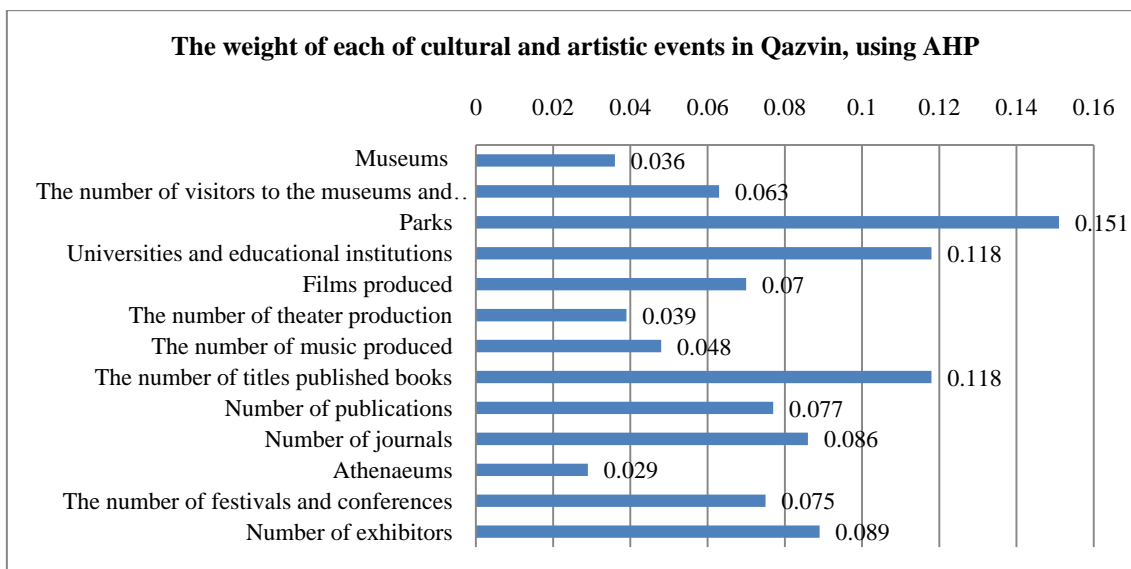


Fig. 2 Weighting each cultural and artistic events in Qazvin, using AHP

7.1.1.2. TOPSIS technique explanation in depicting reactive trend of Qazvin

According to the nature of this section, namely determination of creative trend of Qazvin city based on creative city indicators in the mentioned years and obtaining near coefficients, the results can be interpreted as follows. The year 2009 and the years before that with the score of 0.6174 gained the first rank of creativity, 2013 with the score of 0.3288 gained the second rank, 2012 with the score of 0.3186 was ranked third, 2010 with the score of 0.3162 was ranked fourth, 2011 with the score of 0.2895 was ranked fifth, 2014 with the score of 0.2794 was ranked sixth and finally 2015 with the score of 0.2762 was ranked at the bottom of the creative city ranking. Overall, it can be mentioned that the creative trend in Qazvin in terms of cultural and artistic events and activities in recent years has been downward except in the case of 2013; however, the activities never ceased completely Table 2.

Table 2 Final results, the garlic creativity in the city of Qazvin using TOPSIS technique

Result	Near factor
2009 years and before that	0.6174
2013	0.3228
2012	0.3186
2010	0.3162
2011	0.2895
2014	0.2794
2015	0.2762

7.1.1.3. Depicting the trend for Qazvin city toward creativity during the years before 2015

Diagram number (2) has demonstrated that the results attained in previous section, explain Qazvin trend between 2009 and 2015. However, the trend had a decreasing trend with gentle slope but according to current situation in national level, this reduced activity is considered normal.

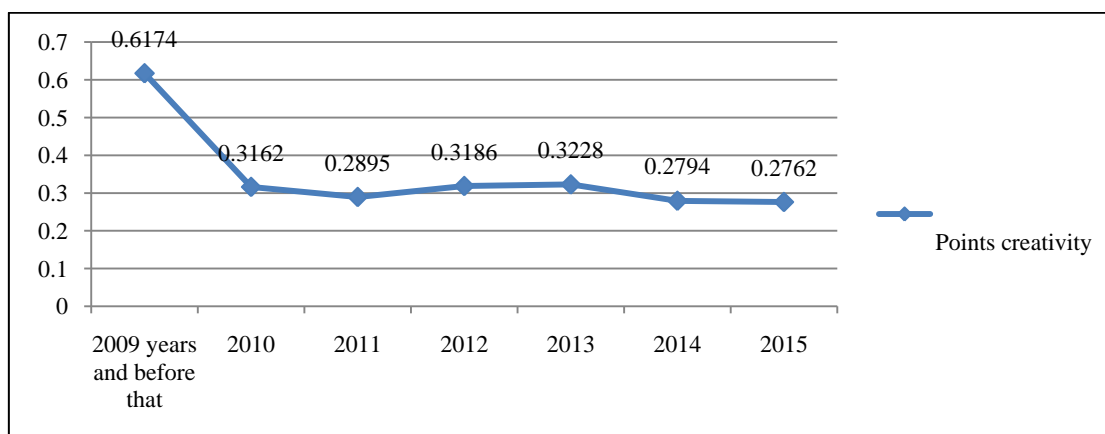


Fig. 3 The trend of the city of Qazvin to the creativity of the years from 2009 to 2015

7.2. Determining the dominant field of creativity in Qazvin city by using the AHP model

There are seven main fields to introduce creative cities, including literature, music, cinema, hand-made crafts and folk arts, nutrition, design and new media. This study selected five available fields in Qazvin city containing

literature, music, cinema, hand-made crafts and folk arts and nutrition and gathered their information Table 3. At the same time, the data achieved from AHP model were analyzed, and the dominant field of creativity in Qazvin city was introduced among the five available fields to invest in and flourish the concealed potentials.

Table 3 Data five major fields of creativity in the city of Qazvin [29]

Creativity types	Field of activity	Number	Total
Music	Music Academy	11	30
	Store music producer	19	
	Cinema hall	5	
Film and cinema, theater	Theater	4	14
	School of Cinema and Film	5	
	Number of publications	37	
Literature	Press	31	105
	The number of bookstores	22	
	Library	14	
	Literary Forum	1	
Gastronomy	Restaurants	32	232
	Traditional restaurant	9	
	Coffee shops and cafes	57	
	Roasted	64	
	Fast food	70	
Crafts and Folk Art	Visual Arts	14	51
	Crafts (weaving)	4	
	Traditional stitching	14	
	Textile Industry	1	
	All areas of crafts and art	12	
	Decorative Arts	3	
	Art galleries	3	

7.2.1. Determining the dominant field of creativity Qazvin city with AHP technique

To evaluate the weighs of each field proposed for the creative city, determination, classification and weight evaluation were performed by using AHP technique and using Expert Choice software.

Diagram 3 presents the ranks of each field in the creative city of Qazvin. Based on AHP results, nutrition with the score of 0.413 is at top, literature with the score of 0.297, hand-made crafts and folk arts with the score of 0.127, music with the score of 0.097 and finally film and cinema with the score of 0.065 are ranked 2nd, 3rd, 4th and 5th, respectively.

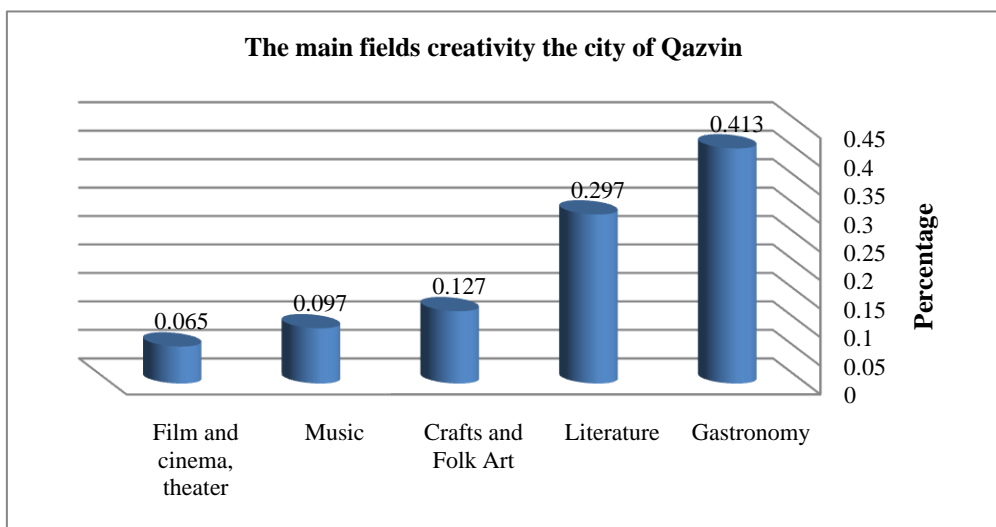


Fig. 4 The main fields of creativity in the city of Qazvin

8. CONCLUSION

Undoubtedly, the best way to attain the ideals of 3rd millennium in the current era is selecting the shortest way for urban growth and improvement. Current cities face many crises among which financial and intellectual problems can be observed. The idea of creative city is beyond these problems. This idea analyzes the city potentials in the defined fields of creative city, and then proposes the best option for development and progress for the city managers.

The current situation in the world is so that most of the popular cities spend a substantial sum to surpass other competitive cities. Absence in the urban competition in the short-term future would cause irreparable damage for city managers. Therefore, this study was conducted to clarify the state of urban creativity in the city of Qazvin. In this regard, Qazvin, due to its position, is a fertile field to become a creative city. In this regard, the field data were collected from organizations and relevant agencies. Finally, the data analyzed by TOPSIS, SPSS and AHP software to obtain the following result.

- The city of Qazvin moved toward creativity in recent years.
- The results of this section determine the creative trend of Qazvin based on creative city indicators that can be interpreted as follows. The year 2009 and the years before that with the score of 0.6174 gained the first rank of creativity, 2013 with the score of 0.3288 gained the second rank, 2012 with the score of 0.3186 was ranked third, 2010 with the score of 0.3162 was ranked fourth, 2011 with the score of 0.2895 was ranked fifth, 2014 with the score of 0.2794 was ranked sixth and finally 2015 with the score of 0.2762 was ranked at the bottom of the creative city ranking. Overall, it can be mentioned that the creative trend in Qazvin in terms of cultural and artistic events and activities in recent years has been downward except in the case of 2013; however, the activities never ceased completely.
- Which one of the five fields of creativity studied was the dominant field in city of Qazvin?

According to the results of this section, the nutrition with the score of 0.413 is located at the top, and literature with the score of 0.297, hand-made crafts and folk arts with the score of 0.127, music with the score of 0.097 and finally film and cinema with the score of 0.065 are ranked 2nd, 3rd, 4th and 5th, respectively.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

NOTE

1. This paper is derived from the doctoral thesis of geography and urban planning with the same title at Semnan Azad University.

REFERENCES

- [1] Richards G, Wilson J. Developing creativity in tourist experiences: A solution to the serial reproduction of culture? *Tourism Management*, 2006, Vol. 27, No. 6, pp. 1209-1223.
- [2] Currid E. New York as a global creative hub: A competitive analysis of four theories on world cities, *Economic Development Quarterly*, 2006, Vol. 20, No. 4, pp. 330-350.
- [3] Suci MC. Creative ECO omy AD creative cities, *Romanian Journal of Regional Science*, 2009, Vol. 3, No. 1.
- [4] Landry C, Bianchini F. *The creative city*, Demos, 1995, Vol. 12.
- [5] Markusen A. Cultural planning and the creative city, Paper presented at the Annual American Collegiate Schools of Planning Meetings, Ft. Worth, TX, 2006.
- [6] Clark TN. Urban amenities: lakes, opera, and juice bars: do they drive development? Clark, Terry Nichols (2004) *The city as an entertainment machine*, *Research and Urban Policy*, 2004, Vol. 9, pp. 103-140.
- [7] Duxbury N. Creative cities in Canada, *Municipal Educational Research Journal*, 2010, No. 100, pp. 76- 83.
- [8] Sasajima H. From red light district to art district: Creative city projects in Yokohama's Kogane-cho neighborhood, *Cities*, 2013, Vol. 33, pp. 77-85.
- [9] Csikszentmihalyi M. *Flow and the Psychology of Discovery and Invention*, HarperPerennial, New York, 1997.
- [10] Jakob D. Constructing the creative neighborhood: Hopes and limitations of creative city policies in Berlin, *City, Culture and Society*, 2010, Vol. 1, No. 4, pp. 193-198.
- [11] Meshkini A, Qaydrhmtly A, Asgari S. A comparative evaluation of indicators creative metropolises in Iran: A Case Study in Tehran and Isfahan. the first National Conference of Creative and Sustainable Development, Indicators Research Institute, Isfahan, 2014.
- [12] Blury M. The role of new media in creative approach to Iran, The first national conference of creative ideas and challenges in Iran, Qeshm, 2013.
- [13] Foord J. The new boomtown? Creative city to Tech City in east London, *Cities*, 2013, Vol. 33, pp. 51-60.
- [14] Ratiu DE. Creative cities and/or sustainable cities: Discourses and Practices. *City, Culture and Society*, 2013, Vol. 4, No. 3, pp. 125-135.
- [15] Vanolo A. The Fordist city and the creative city: Evolution and resilience in Turin, Italy, *City, Culture and Society*, 2015.
- [16] Dahlman CT, Renwick WH, Bergman E. *Introduction to Geography: People, Places & Environment*, Prentice Hall, 2013.
- [17] Grimm NB, Faeth SH, Golubiewski NE, Redman CL, Wu J, Bai X, Briggs JM. Global change and the ecology of cities, *Science*, 2008, Vol. 319, No. 5864, pp. 756-760.
- [18] Meshkini A, Mhdnzhad H, Parhiz F, Khazaei N. The theory of creative city in the dynamic economic, cultural and urban life, *The First National Conference of Creative Ideas and Challenges In Iran*, Qeshm, 2013.
- [19] Pareja-Eastaway M, Pradel i Miquel M. Towards the creative and knowledge economies: analysing diverse pathways in Spanish cities, *European Planning Studies* (ahead-of-print), 2014, pp. 1-19.
- [20] Khosravi N. Creative idea, creative city, municipal magazine (monthly planning and urban management), eleventh year, 2010. No. 100, pp 113-114.
- [21] Ebrahimi M. Creative city the meeting: implications - policies, case studies of successful and unsuccessful cities, *Centre for Studies and Planning Tehran*, 2008.
- [22] Akbari Motlaq M. The creative aspects of the theory and its impact on sustainable urban development with an emphasis on international experience. national conference on

- sustainable architecture and urban development, enterprise Structures Desert, Boker, 2013.
- [23] Bandarin F. Series on "Urban Creativity Forum", City, Culture and Society, 2012, Vol. 3, No. 4, pp. 327-328.
- [24] Faggian A, Comunian R, Li QC. Interregional migration of human creative capital: The case of "Bohemian graduates, Geoforum, 2014, Vol. 55, pp. 33-42.
- [25] Rosi M. Branding or sharing?: The dialectics of labeling and cooperation in the UNESCO Creative cities network, City, Culture and Society, 2014, Vol. 5, No. 2, pp. 107-110.
- [26] Donovan PJ, Batabyal AA. On economic growth and investment income taxation in a creative region, International Review of Economics & Finance, 2015, Vol. 38, pp. 67-72.
- [27] Andersson ÅE, Andersson DE. Creative Cities and the new global hierarchy, Applied Spatial Analysis and Policy, 2015, pp. 1-18.
- [28] Zheng J, Chan R. The impact of 'creative industry clusters' on cultural and creative industry development in Shanghai, City, Culture and Society, 2014, Vol. 5, No. 1, pp. 9-22.
- [29] Qazvin Department of Culture I. Department of Statistics and Information, 2015.

AUTHOR (S) BIOSKETCHES

Shamsi, Kh., PhD, School of Geography and Urban Planning, Semnan Branch, Islamic Azad University, Semnan, Iran

Email: Shamsikhezer@yahoo.com

Karkehabadi, Z., Assistant Professor, School of Geography and Urban Planning, Semnan Branch, Islamic Azad University, Semnan, Iran

Email: Z.karkehabadi@yahoo.com

COPYRIGHTS

Copyright for this article is retained by the author(s), with publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>).

HOW TO CITE THIS ARTICLE

Shamsi, Kh; Karkehabadi, (2018). Evaluation of creative city indicators of qazvin city in order to explaining the trend and determining the dominant field of creativity. *Int. J. Architect. Eng. Urban Plan*, 28(1): 83-90, June 2018.

URL: <http://ijaup.iust.ac.ir/article-1-351-en.html>

