



Analyzing the Challenges for Promoting Saffron Industrial Cluster in Mashhad to Move towards a Knowledge City Paradigm

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ABSTRACT

Industrial cluster is identified as one of the powerful mechanisms in order to stimulate innovation and upgrade competition in specific city region and to enhance its capability to move efficiently towards the concept of knowledge city paradigm. Researches in developing countries also show the increasing interest toward the use of this mechanism. The aim of the current paper is to explore the current status of Saffron industrial cluster of Mashhad city in Iran and evaluate its role in creating a concept of knowledge city according to porter's diamond model. Both qualitative and quantitative research was used for the purpose of triangulation of data and 30 questionnaires were distributed among the Saffron cluster members and 7 semi-structured interviews were conducted with stakeholders' experts, using snowball sampling technique. Results indicate that regarding Porter's diamond model determinant, this cluster do not perform well, although it is assumed by Iranian Government in the later stage of cluster development. Also many deficiencies were found in the system such as trust problem between firms and main actor in the cluster. Suggestions for improving a current situation were also proposed.

Keywords: Knowledge, Innovation, Saffron cluster, Porter's diamond model, Knowledge city, Mashhad.

1. Introduction

The concept of knowledge city is new and very broad. About what knowledge city is and which its main features are, there are different ideas. It may be related to some or all aspects of economic and socio-cultural life of a city according to strategic objective(s) that such a city have. It can be used for regional economy driven by high value added exports created through research, technology and brainpower. These cities invest notably in education, training and research. The main advantages of knowledge cities is creation of more and well-paid employment, more rapid growth in community's income and wealth; a more sustainable economy; revitalization of traditional industries, an incentive for the cities pride and confidence for reinvestment of local capital into the local economy (Ergasakis *et al.*, 2004). One of the useful mechanisms in order to move towards a concept of knowledge cities is industrial cluster development (Yigitcanlar *et al.*, 2008a). Today's survival of SMEs depends on their innovation skill result from external and internal sources (Huggins, 1996). It means that competitive advantage lies in making more productive use of inputs, which needs constant innovation. In this regard companies in any industry such as shoes, agriculture or semiconductor can be productive if they use sophisticated methods and advanced technology and offer unique products and services. So all industries can employ advanced technology and can be knowledge intensive. The more the world economy becomes knowledge-based and dynamic, the more this is true (Porter, 1998).

According to OECD (1999), industrial clusters projects are one of the National Innovation Systems development project in developed countries, and also over the last decade, the mechanism of industrial

clusters have been recognized as an important instrument for improving SME's productivity and innovativeness in developing countries too (Karaev *et al.*, 2007).

The main objective of this paper is the investigation of the role of cluster in establishing the knowledge city concept in the developing countries, especially Mashhad city in Iran. According to this objective, research question were proposed as following.

1. Does Mashhad Saffron cluster motivate Mashhad in establishing of knowledge-based urban development (KBUD)?

2. Research Methodology

In the first stage, the conceptual model for this research was selected based on Porter's diamond model and according to its criticism a cultural component was also added to this model in order to make it more applicable for using in the context of developing countries. The methodology of this paper is based on using both quantitative and qualitative techniques. In quantitative section, 30 questionnaires were distributed among the stakeholders of Saffron cluster of Mashhad in Iran and SPSS software was used for its analysis. Then for evaluation of existing conditions and also extracting the ideas and suggestions of experts and professionals about how to provide the better condition for establishing the knowledge-based city of Mashhad, 7 semi-structured interviews were conducted using the snowball sampling method with all stakeholder including government, university experts and Saffron cluster. Characteristic of interviews has shown in Table 1. For analyzing interviews the theme analysis method was used.

Table-1. Characteristics of Interviewees

Code	Position of interviewee	Organisations/firms	Activity experience	employment	Length of interview
#1	Senior expert	Ferdowsi University of Mashhad/ Central library	-	-	50 Min.
#2	Senior expert	Ferdowsi University of Mashhad/ management of scientific relationship of university and society	8 years	-	1 hour.
#3	Senior expert	Scieintefic and technology park of Razavi Khorasan.	23years	-	1:20
#4	Senior expert	Khorasan Industrial estates company	7 years	-	1hour
#5	Senior expert	Khorasan Industrial estates company	6 years	-	1hour
#6	Expert	Saffron industrial cluster	8 years	-	1:35 min
#7	Expert & stakeholder	Saffron industrial cluster	8 years	< 50	1 hour
					Total:7:45 min

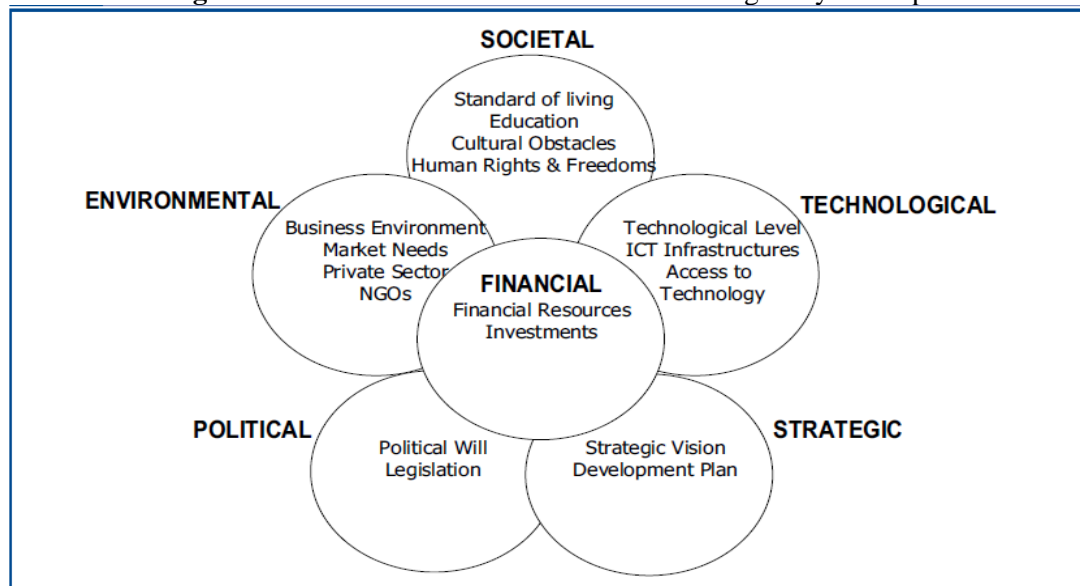
Reference: Ergasakis *et al.* (2004)

3. Knowledge Cities and Urban Development

Engineering and orchestrating the development of creative urban regions is not an easy task to undertake. Besides a strong economy, organization skills, knowledge pool for talent and investment, socio-cultural vibrancy, rich natural, physical and knowledge assets and amenities, it also requires a new understanding and perspective in physical, economic and social development dynamics of our cities. As an emerging field of study and practice, knowledge-based urban development principally is about processes of knowledge production, and their reflection on urban form and functions, which provides a new perspective for the development of creative urban regions. KBUD is considered as a new strategic development approach in tough global economic competition. KBUD involves contemporary understanding and management of value dynamics, capital systems, urban governance, development, and planning. The main promise of KBUD is a secure economy in a human setting, in short, sustainable urban and economic development (Yigitcanlar *et al.*, 2008b). In this regard "Knowledge-Based Urban Development" has become a powerful strategy for sustainable economic, socio-cultural and urban growth and for the post-industrial development of cities (Yigitcanlar *et al.*, 2008b).The process of developing a knowledge city is neither quick nor simple and some success factors are required. These factors are

environmental, societal, technological, financial, political and strategic factors. In societal factor, a high level of knowledge-sharing culture is very important. In an environmental part, two very basic factors that should be deeply analyzed are business environment and the market needs (Ergasakis *et al.*, 2004).

Figure-1. Success factors related to the Knowledge City Concept



Reference: Ergasakis *et al.* (2004)

The KBUD has three pillars named society, economy and environment. In the economy pillar, it aims the competitive, creative, innovative and knowledge-based products and services and finally making a local economic development that is competitive and integrated with global knowledge-based economy (Yigitcanlar *et al.*, 2008b). In this approach economic development leads to sustainable urban development, increasing of quality of life, human & social development and improvement of intellectual capital.

4. Knowledge Cities and the Role of Industrial Clusters

Paradoxically, in a global economy that is far more dynamic, anything that can be provided by distance through global markets cannot be as a source of competitive advantage; so the sustainable competitive advantage lies in local things such as knowledge, relationships and motivation that result from concentration of highly specialized skills and knowledge, institutions, rivals, related business and sophisticated customers. Geographic, cultural and institutional proximity leads to special access, closer relationships, better information, powerful incentives and other advantages in productivity and innovation that distant rivals cannot match. On the other words, more important to ongoing competitiveness is the role of location in innovation (Porter, 1998).

Melbourne is one of the knowledge cities where knowledge clusters play an important role in the success of KBUD of Melbourne (DSE (Department of Sustainability and Environment), 2003). Melbourne 2030 based on the view that all sectors of the economy are important for economic success, making arrangement i.e. expanding logistic and communication infrastructures for internationally competitive clusters (Victorian Government, 2002). Although most of the cluster literature focuses on developed countries, there is much evidence that clustering in developing countries is an important mechanism for improving the economic growth (Schmitz and Nadvi, 1999).

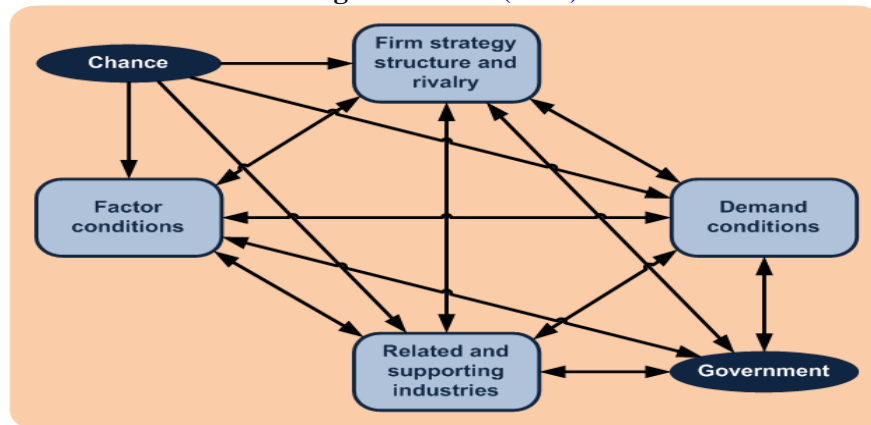
According to Porter (1998) today's economic map of the world is dominated by clusters. He describes the cluster as "a critical mass of companies in a particular location, whether it is a country, a state, a region or even a city". In his opinion there is a strong correlation between the concept of cluster and competitiveness.

When companies and suppliers from a particular sector are connected in geographically proximate groups (clusters), efficiency is heightened, greater opportunities for innovation are created and barriers to entry for new firms are reduced (World Economic Forum, 2010).

It is very important to mention that the mere collocation of companies, suppliers and institutions only creates the potential for economic growth and it does not lead to its accomplishment. Achieving to the competitively assets in a cluster requires some conditions that as shown in Fig. 2 porter categorized them

to four determinants **1. Factor condition** or the position of the region or city in terms of factors of production like natural resources, human resources such as skilled labour, capital resources, physical infrastructure, administrative infrastructure and specialize infrastructure like information infrastructure, scientific and technological infrastructure which are necessary for competing in a given industry **2. Demand condition** or the structure of home demand for the industry's products or services such as sophisticated and demanding local customer(s) or customer's needs that anticipate that elsewhere **3. Related or supporting industries** or the availability of capable, locally-based suppliers and presence of competitive related industries **4. Firm strategy, structure and rivalry** which emphasize on the issues of the conditions in the region, governing how companies are created, organized and managed and indicates the degree of rivalry exist among domestic firms plus two additional variables, "Chance" and "Government". These factors, as a system create the situation (Diamond) in which a nation firms compete (Porter, 1998).

Figure-2. Porter (1990).



Reference: Porter (1990).

According to Charitoudi *et al.* (2011) six elements are considered as crucial components for creation of successful cluster including geographical proximity, trust and cooperation, innovation, knowledge sharing, government, university and research institutions, new technology and participatory management.

A very important element that impact on changing the diamond into a dynamic system is a social glue such as personal relationships, face-to-face contact, a sense of common interest and also continuous relationship with government bodies and local institutions like utilities, schools and research group (Porter, 1998).

In developing country the role of government is very significant (Schmitz and Nadvi, 1999). They act as a catalyst for the creation and survival of clusters (Hood and Peters, 2000). So the new role of the national and local government is to ensure the supply of high-quality inputs such as educated citizens and physical infrastructure and also setting the rules of competition by protecting intellectual property and enforcing antitrust laws (Porter, 1998).

5. Introduction to Saffron Cluster of Mashhad in Iran

Razavi Khorasan is a province located in northeastern Iran. Razavi Khorasan covers an area of 144,681 km² and has a population of 5,593,079 (2011). Mashhad is the capital of Razavi Khorasan Province and the second most populous city in Iran. Its population was 2,772,287 at the 2011 population census. It is located in north east of the country close to the borders of Afghanistan and Turkmenistan (www.wikipedia.org/en/Mashhad).

Razavi Khorasan has 21 cluster development projects according to local potential that it indicates the high importance of cluster-based development and special notice of local policy makers and authorities toward local development using cluster mechanism. Among these projects the development program of two projects, Furniture and saffron clusters have finished and two clusters- jewelry and shoes- are in the phase of implementation. The Mashhad Saffron cluster is amongst the first of 42 national clusters. This cluster now has 1000 employment. This cluster also has a high potential for export. In Table 2 the features of this cluster before and after the clustering program has shown (Vice Chancellor of Khorasan Industrial Estates Company Report, 2012).

Table-2.The Features of Saffron Cluster of Mashhad, 2012.

Title: The Saffron cluster of Mashhad			
Condition	Before	After	Rate of growth
Number of firms	90	100	11%
Number of network	0	3	300%
Number of BDS	0	5	500%
Number of involved organization	0	4	400%
Employment	900	1000	11%
Rate of sale (Billion Rials)	50	118	136%
Rate of export (Billion Rials)	50	118	136%

Reference: Document available in [Vice Chancellor of Khorasan Industrial Estates Company Report \(2012\)](#).

6. Results and Findings

General managers, sales and product managers were respondents of questionnaires in the saffron cluster. Firms in the Saffron cluster involved in activities such as packaging and selling saffron in foreign and domestic markets. All of firms in Saffron cluster have private ownership and have less than 50 employees. 30 % of firms in saffron cluster didn't have any joint cooperation with other related organizations in activities such as consultation, joint R & D, taking part in conferences and having research contracts.

According to analysis of 30 questionnaires that has been done by SPSS.16 software and also theme analysis of interviews, existing condition of this cluster have been evaluated based on 5 factors of porter's diamond model (Factor condition, Demand condition, Supporting and Related Industry, Firm strategy, structure and rivalry, Government) and Culture component that in Tables 3 to 14 has been shown separately. In these Tables values 1 means very weak, 2 weak, 3 medium, 4 strong and 5 very strong. CF in all tables means "cumulative frequency" of scores 1, 2 and 3.

6.1. Factor Condition

In factor condition, as shown in Table 3 the mean of all 11 variables is between 3.90 and 1.63. It means that this cluster is not in a good condition especially in specialized input. From Table 3 it can be seen that in saffron cluster, access to necessary input, quality of input and access to unskilled labour is relatively favorable. In three items including training investment for cluster members, access to venture capitals and access to FDI (Foreign Direct Investment), this cluster has unfavorable condition but in five items including effectiveness of IPR, the role of intermediary organizations such as incubator centers and science parks, cooperation between universities and industry and quality of universities and public research centers, and access to skilled labor, this cluster has unfavorable condition. Results of interviews are presented in Table 4.

Table-3. Existing condition of factor condition in Saffron cluster of Mashhad

1. Factor Conditions	Values								
	Mean	Mean Rank	S D	1	2	3	4	5	CF (1+2+3)
1. Access to Necessary Input	3.60	67	0.968	6.7	0.00	33.3	46.7	13.3	40
2. Quality of Input	3.90	76.48	0.845	0.00	3.3	30	40	26.7	33.3
3. Access to Unskilled Labour	3.37	86.10	0.765	0.00	6.7	60	23.3	10	66.7
4. Training Investment for Cluster Members	2.10	63.98	0.885	30	33.3	33.3	3.3	0.00	96.7
5. Effectiveness of IPR	2.32	65.18	1.073	33.3	23.3	30	13.3	0.00	86.7
6.The Role of Intermediary Organizations such as Incubator Centers and Science Parks	2.27	70.77	1.112	30	30	26.7	10	3.3	86.7
7. Cooperation between Universities and Industry	2.03	66.42	1.066	36.7	36.7	16.7	6.7	3.3	90
8. Quality of Universities and Public Research Centers	2.37	71.62	0.999	20	36.7	33.3	6.7	3.3	90
9. Access to Venture Capitals	1.63	58.43	0.850	56.7	26.7	13.3	3.3	0.00	96.7
10. Access to Skilled Labor	2.77	76.88	1.251	20	20	33.3	16.7	10	73.3
11. Access to FDI (Foreign Direct Investment)	1.67	62.73	0.884	56.7	23.3	16.7	3.3	0.00	96.7

Reference: Authors

Table-4.Qualitative Results of Interview

1. Factor conditions
General factor: Majority of experts supports the quantitative results and evaluated that the general factors in the Saffron cluster is nearly good but undesirable.
Specialized factors: Respondents agree that specialized training, strengthening the R&D unit, quality of universities/research centers and their connection with industries and access to communication infrastructure is very weak which more attention should be paid to these aspects in order to give more dynamism to this cluster.
 According to (#3): “The main problem in this context is the absence of common understanding language between university and research centers with industry”.
 One respondent in government sector mentioned that “inefficiency of IPR in Iran leads competitors to make copy and duplicate the basic products easily” (#5).

Reference: Authors

6.2. Demand Conditions

In Table 5 among 8 options evaluated in demand condition factor, the extent of products diversification according to customers will and ability to respond to the local demand are relatively favorable. It has also relatively favorable condition in items such as extent of international demand, ability to respond to the international demand and also sophisticated customers because it is an export oriented product. But extent of national demand is undesirable. Results of interviews are presented in Table 6.

Table-5. Existing condition of demand conditions in Saffron cluster of Mashhad

Items	2. Demand Conditions		values							CF (1+2+3)
	Mean	Mean Rank	S D	1	2	3	4	5		
1. Extent of products diversification according to customers will	3.17	54.57	1.020	6.7	13.3	46.7	23.3	10	66.7	
2. Sophisticated customers	3.40	65.97	1.070	6.7	10	33.3	36.7	13.3	50	
3.Extent of local Demand	2.70	47.85	0.877	10	26.7	46.7	16.7	0.00	83.3	
4. Ability to respond to the local demand	3.53	64.90	1.169	6.7	13.3	23.3	33.3	23.3	43.3	
5. Extent of National Demand	2.93	68.18	1.048	13.3	13.3	43.3	26.7	3.3	70	
6. Ability to respond to the national demand	3.63	80	1.129	3.3	13.3	26.7	30	26.7	43.3	
7. Extent of International Demand	3.37	81.20	1.377	13.3	16.7	13.3	33.3	23.3	43.3	
8. Ability to respond to the international demand	3.37	79.47	1.402	13.3	20	6.7	36.7	23.3	40	

Reference: Authors

Table-6.Qualitative Results of Interview

2. Demand conditions
 According to result of interviews, increasing the quality of production would improve the extent of demand condition in three local, national and international stages.
 Experts believe that the high priority of the saffron cluster is development of the international market because it is an export product with a good potential for progress. Considering good markets in Saffron cluster, it is essential to promote the ability to respond to this demand by supporting rules and encouraging the innovation and competition based on continuous improvement.
 Referring to the unique capacity for export, one respondent noted that “producing the high quality productions and doing market research in the first priorities and then innovation are critical factors in improving the demand condition (#7)”.

Reference: Authors

6.3. Supporting and Related Industries

As shown in table 7 the existing condition of supporting and related industries of this cluster is not desirable, because the mean of options such as a number of supporting and related industries, extent of the link and competition between these industries is 2.47 to 2.10. Also 93.3 percent of responses revealed that

the relationship between supporting and related industries with producers is weak. Results of interviews are presented in Table 8.

Table-7. Existing condition of Supporting and Related Industry in Saffron cluster of Mashhad

Items	Mean	Mean Rank	S D	values					CF (1+2+3)
				1	2	3	4	5	
1. Extent of Competition among Supporting Industry	2.47	51.57	1.196	23.3	33.3	23.3	13.3	6.7	80
2. Extent of link between enterprises	2.10	44.87	0.960	33.3	30	30	6.7	0.00	93.3
3. Number of Supporting and Related Industry	2.17	52.32	0.913	26.7	36.7	30	6.7	0.00	93.3

Reference: Authors

Table-8. Qualitative Results of Interview

3. Supporting and Related Industries
Majority of experts mentioned that there is a few supporting and related industries in Saffron cluster. Supporting organizations don't have a constructive link with these clusters. One of the respondents indicated that, "despite of existence of the supporting organizations, due to the lack of clarity in their tasks, their performances is inefficient (#5)".

Reference: Authors

6.4. Firm Strategy, Structure and Rivalry

Data in Table 9 shows that investment on R & D by firms and firms' willingness for cooperation with similar organizations with the mean 2.03 is undesirable in this cluster. Effectiveness of government policy to encourage competition is unfavorable. Competition among producers with mean of 3.87 is favorable and intensive although still there is a gap with the ideal position. Decreasing the monopoly and strengthening the private sectors in saffron cluster is relatively favorable. Results of interviews are presented in Table 10.

Table-9. Existing condition of Firm strategy, structure and rivalry in Saffron cluster of Mashhad

Items	Mean	Mean Rank	S D	values					CF (1+2+3)
				1	2	3	4	5	
1. Competition among producers	3.87	66.32	0.681	0.00	3.3	20	63.3	13.3	23.3
2. Firms willingness for cooperation with similar organizations	2.50	62.82	1.009	23.3	16.7	46.7	13.3	0.00	86.7
3. Decreasing of monopoly and strengthening private sectors	3.33	66.78	1.028	6.7	16.7	16.7	56.7	3.3	40
4. Investment on R & D by firms	2.03	58.82	0.928	33.3	36.7	23.3	6.7	0.00	93.3
5. Effectiveness of government policy to encourage competition	2.57	75.23	1.073	23.3	16.7	40	20	0.00	80

Reference: Authors

Table-10. Qualitative Results of Interview

4. Firm strategy, structure and rivalry
Doing interview with experts it has become clear that the competition in saffron cluster is destructive one. "Over of all there isn't a very much desire among the firms to cooperate with similar organizations. In this direction, the government policy didn't have an effective role toward the creation of constructive competition". Also according to result of interviews, the firms didn't invest in (R&D) sufficiently because investment in the research and development projects is high costs. Most of interviewees emphasize that the main barriers in this determinant is traditional structure of firms. Doing the routine and repeated activity in firms is another important aspect that has a negative effect on firm's development. Another aspect that affects the efficiency of the firms negatively is unhealthy competition among firms and copy of products without any consideration which reflected very inefficient IPR policy. "Firms should change their strategy to competitive advantage rather than comparative advantage (#6)".

According to one respondent "competition along with comradeship is well" (#4).

Reference: Authors

6.5. Government

According to Table 11 it is found that government role in saffron cluster in ten items is not favorable. In five items including ease of establishing new businesses, transparency of rules, support of venture capital industry, stability of rules and regulations and supporting entrepreneurs are undesirable. Effectiveness of international trade rules, extent of government support of the cluster, effectiveness of IPR policy, the role of labour union and tax incentives are undesirable. The mean of these options is between 1.63 to 2.70. It means that although the role of government is very important in developing countries but existing condition show that the government didn't make a suitable condition for the growth and development of this cluster. Results of interviews are presented in Table 12.

Table-11. Existing condition of government role in Saffron cluster of Mashhad

5. Government Items	Values									
	Mean	Mean Rank	S D	1	2	3	4	5	CF (1+2+3)	
1. Effectiveness of international trade rules	2.47	71.63	1.106	23.3	23.3	43.3	3.3	6.7	90	
2. Extent of government support of the cluster	2.00	64.40	0.695	20	63.3	13.3	3.3	0.00	96.7	
3. Effectiveness of IPR policy	2.5	73.27	0.938	20	16.7	60	0.00	3.3	96.7	
4. The role of labour union	2.70	75.12	1.149	13.3	33.3	33.3	10	10	80	
5. Ease of establishing new businesses	1.93	58.97	0.868	33.3	46.7	13.3	6.7	0.00	93.3	
6. Transparency of rules	1.90	62.60	0.712	30	50	20	0.00	0.00	100	
7. Supporting of entrepreneurs	1.63	62.85	0.669	46.7	43.3	10	0.00	0.00	100	
8. Support of venture capitals	1.67	60.47	0.711	46.7	40	13.3	0.00	0.00	100	
9. Stability of rules and regulations	1.70	58.68	0.702	43.3	43.3	13.3	0.00	0.00	100	
10. Tax Incentives	1.80	66.72	0.887	40	46.7	10	0.00	3.3	96.7	

Reference: Authors

Table-12. Qualitative Results of Interview

5. Government role

Most of experts believe that instability in government regulations and lack of transparency of rules leads the development planning of cluster projects don't achieve their objectives. Nearly all of interviewees agree that top-down planning causes inefficiency of resource allocation and result in government regulations, financial, and political support direct towards other sources of investment.

According to one respondent, "Regulations are not well-prepared based on needs and requirements of particular industries" (#5).

Reference: Authors

6.6. Culture

According to Table 13 all of the six items in cultural section have undesirable condition. Extent of trust to public institutions is weak because the Cumulative frequency of 1, 2, 3 Or CF (1+2+3) has become 96.7. Items such as extent of trust among main actors of cluster, extent of trust among main group of producers, desire to cooperation and team-working and extent of internalization of entrepreneurship culture have undesirable condition too. 33.3 percent respondents believe that the desire to cooperation and team working in this cluster is weak.

Table-13. Existing condition of Culture in Saffron cluster of Mashhad

6. Culture Items	Values									
	Mean	Mean Rank	S D	1	2	3	4	5	CF (1+2+3)	
1. Extent of trust among main actors of cluster	2.70	52.45	1.022	10	33.3	40	10	6.7	83.3	
2. Extent of individual trust among main actors of cluster	3.00	55.12	1.083	6.7	26.7	36.7	20	10	70	
3. Extent of trust among main group of producers	2.60	49.78	1.037	16.7	26.7	40	13.3	3.3	83.3	
4. Extent of trust to public institutions	2.30	73.63	0.702	10	53.3	33.3	3.3	0.00	96.7	
5. Desire to cooperation and team-working	2.27	50.27	1.015	26.7	33.3	26.7	13.3	0.00	86.7	
6. Extent of internalization of entrepreneurship culture	2.37	55.67	0.669	10	43.3	46.7	0.00	0.00	100	

Reference: Authors

Table-14.Qualitative Results of Interview**6. Culture**

Results of interviews confirmed that trust is a critical factor for cooperation and synergies. One of experts mentioned that “creating the trust required the transparency and sense of solidarity among the members of cluster”(#6).

According to another professional opinion, doing small group activities such as collective buying and sale, doing joint tour and participate in the specialized fairs are appropriate tools for increasing the trust, cooperation and team-working in the cluster (#7).

Nearly all of the experts believe that, porter’s diamond model rooted in developed countries with a nature of risk-taking and entrepreneurial culture as well as advanced networking and cooperation culture. In order to apply this model in the context of developing countries like Iran, it is essential to pay special attention to cultural contexts such as trust, cooperation between actors, entrepreneurship culture and attitude to work and labour.

“The main mission of cluster development is enhancing the cooperation, trust and entrepreneur culture (#4, #6)”.

One of the respondents in saffron cluster mentioned that, “the intensive official bureaucracy, instability of rule and regulations, and lack of transparency, the intervention of Cluster Development Agent as a government organization is not efficient” (#7).

Majority of respondents agree that government don’t have role in internalization of the entrepreneur culture.

Reference: Authors

7. Conclusion and Discussion

Based on results it can be concluded that, the current status of Saffron cluster of Mashhad is relatively weak, although there are some signs for improving the current situation. The main problem of system is lack healthy completion among actors and also lack of trust. The main reason for this was found a relatively inefficient intellectual property system which impedes innovation and competition in this cluster. In cultural aspect, availability of entrepreneur culture, culture of cooperation and tam-working and trust among all of stakeholder of cluster is very important (Karaev *et al.*, 2007), but in the case of Saffron cluster, existing condition is not desirable and result of interview supported this. As in literature has focused, in developing countries the role of government is very significant (Schmitz and Nadvi, 1999). They act as a catalyst for the creation and survival of clusters (Hood and Peters, 2000). However in the case of Mashhad’s Saffron cluster, government should play more efficient role to change the current situation. Interview with experts and also literature review showed that the role of government is to ensure the supply of high-quality inputs such as educated citizens and physical infrastructures and also setting the rules of competition by protecting intellectual property and enforcing antitrust laws (Porter, 1998). Furthermore, results show that despite significant growth in export for 4 years during the implementation period of cluster development project, this cluster has not been able to create the sustained and systematic innovative and competitive infrastructure for the development of city of Mashhad according to porter’s diamond model and culture component in order to help city move towards a knowledge city concept. It can be concluded that the contribution of Saffron cluster is not very strong in the establishment of Mashhad knowledge city concept and it requires more attention both in infrastructural forces as well as government policies.

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