A resource based view to small firms' sustainable competitive advantages: A case of Iranian small firms

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A R T I C L E I N F O	A B S T R A C T
	During the last decades, the importance of small firms as one of the main economical parts in each country has been proved. Considering to the resources limitation in one hand, and the competitive global market in the other hand, it is very important that firms can obtain sustainable competitive advantages (SCAs) to compete with other rivals. This paper, at the first step, tries to explore the potentially SCAs of Qom's small firms by using of Structural Equation Model (SEM). Then, the real current situation of firms in using these competitive advantages has been examined. The results tell that except firms' location, other potentially SCAs do not have acceptable condition. © 2012 Growing Science Ltd. All rights reserved.

1. Introduction

There are more than 80000 small manufacturing units in Iran, which constitutes more than 94 percent of all the country' industrial centers. These small firms bear 53 percent of country's employment directly, 25 percent of nation's value added, and more than 30 percent of industrial products' value. There are 1,659 small firms in Qom province, which almost consist of 94 percent of province' manufacturing firms. Their share in creating employment for 2,0000 people that is equivalent of 65 percent of total industrial employment of province. According to the important position of small firms in Iran, recently Ministry of Industry has attendant to small firms' issues, especially. One of the main programs in this line is recognizing the resources by which small firms can obtain sustainable competitive advantages. In this paper, at first, by using of SEM models, RBV and managers views, a conceptual model indicating important potentially resources of Qom' firms has been achieved. Then, these potentially resources have been examined in the real world and the current condition about them was tested. The purpose of the second test was to assay now, which resources are creating sustainable competitive advantage and which not (Seijani, 2009).

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In the recent years the subject of SCA has been considered by many researchers. Some of them argue that there are four factors affecting competitive advantages including firm's strategies, process, capabilities, and resources (Porter, 1985; Prahalad & Hamel, 1990; Barney, 1991; Persson & Virum, 2001). Among these factors, to obtain SCAs, understanding their sources is very necessary for firms (Progoulaki & Theotokas, 2010). In this area, applying RBV is very efficient in recognizing the relationship among the kind of resources firms have and their performance (Ainuddin et al., 2007). RBV does not believe that all the resources firms have led them to SCA, but the resources in which firms can gain long run SCA are important (Fahy, 2002; Bowman & Toms, 2010). Now, the term of resource has to be defined. RBV theorists have used a variety of cases and items to explain the meaning of source, such as competencies (Prahalad & Hamel, 1990), skills (Grant, 1991), strategic assets (Amit & Schoemaker, 1993; Ross et al., 1996), and stocks (Capron & Hulland, 1999). In addition, (Barney, 1991) argues there are three classes of resources shown in Fig. 1.
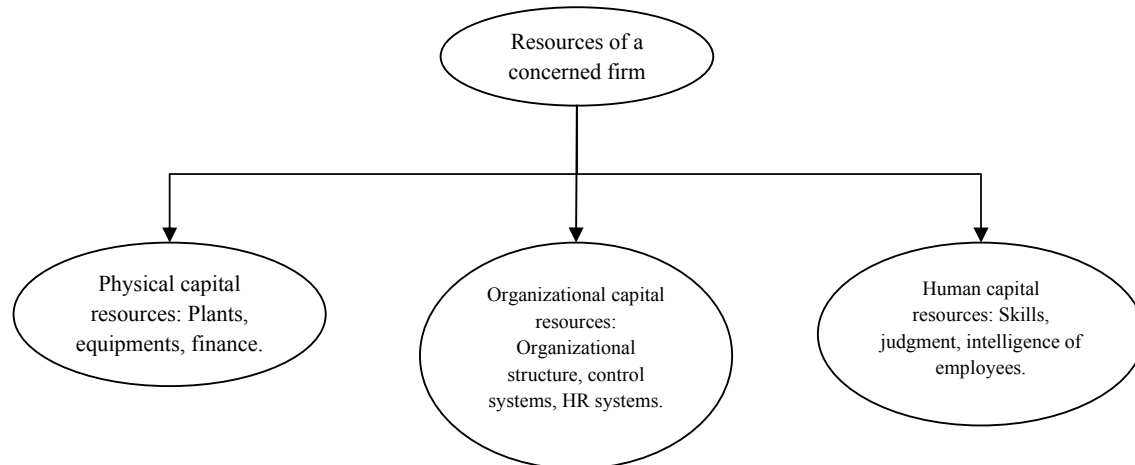
Fig. 1. Different categories of resources (Barney, 1991)

Despite categorizing sources by some researchers, RBV proposes a systematic approach to discover the competitive advantages. The main point in applying RBV model is that it focuses on the internal forces of firm (Wernerfelt, 1984). In this model discovered by Barney & Hesterly (2006) and was named as value, rarity, imitability and organization (VRIO) four questions survey firm's sources from 4 different aspects: 1) the value, 2) the rarity, 3) the imitability, and 4) the organization support. The summary of VRIO model is as follow:

Table 1

The systematic approach of RBV (Summary of VRIO, Competitive Implications, and Economic Implications)

Valuable?	Rare?	Costly to Imitate?	Organized Properly?	Competitive Implications	Economic Implications
No			No	Disadvantage	Below Normal
Yes	No			Parity	Normal
Yes	Yes	No		Temporary Advantage	Above Normal (at least for some amount of time)
Yes	Yes	Yes	Yes	Sustainable Advantage	Above Normal

In the next section, based on Table 1 at first four hypotheses about Qom's firms' sources have been defined which lead to SCA. Next, by using of SEM, a conceptual model for Qom's firms' main sources is achieved.

2. Recognizing sources and defining hypotheses

The main purpose of this paper is to analyze the SCAs in Qom's small firms industry. In line of this goal, the first step is to recognize the potential resources in which firms could obtain competitive advantages. After modeling and recognizing the advantages, their circumstances in the real world in leading to sustainable competitive conditions would be examined.

2.1. Location of firms

Qom province is located at the center of Iran, it is connected with most of the other provinces in country, and the trading is very convenient with suppliers and buyers in other cities. The next positive point is that Qom is capital's neighbor, and because there is a big amount of trading communication in Tehran, Qom's firms have very good opportunity in accessing to big markets in country. Based on the above explanations, the first hypothesis is defined as follow:

H1: Location of firms is a sustainable competitive advantage.

2.2 Human resource management (HRM)

Studying the literature of human resource (HR) illustrates its important role in the way that firms can lead to create SCAs (Barney, 2001; Barney & Wright, 1998; Wright, Dunford & Snell, 2001). In this paper the meanings of HR are: managers, employees, force labor, and other people who help the firm in creating good or service. Many researchers and experts believe that the most vital source of firms is HR (Dale Young, 2004), because the works are done by them. Managing this important source in creating SCA is one of the main issues in HRM (Barney, 2001).

2. 3. Management of technology

Traditionally, firms and countries' competitive advantages were constructed based on raw material (Bjørn & Bendiksen, 2003), human force (Peter Boxall, 1998), transportation (Debbage, 1999), and financial sources (Gareth & Paul, 2004). Although these factors are important, but nowadays, almost all the firms in the developed countries are driving benefits from exploiting of human knowledge to create new and high technologies so they excel to their rivals (Changsu & Jaeyong, 2007). So, managing technologies and innovations, is a main factor in the enterprises of which want to survive and compete in the dynamic competitive environment (Sefer & Ercan, 2011). Considering to talented human force, scholars, and the necessity of seeking to innovation in Iran, addressing to technology management is very important in Qom's small firms.

2.4. Economic management

The main goal in economic management is how to control and decrease the cost and increase the profit (Paul et al., 2011). In the other words, management tries to optimize using from sources to improve the productive as much as possible. Obviously, efficient use of facilities and sources could be a competitive advantage for a firm to save money and gain more profit. Figure 2 demonstrates the role of cost controlling in obtaining competitive advantage.

2.5. Organizational management

The main goal of organizational management is to see what the general policies of management of a firm in using from research and development capabilities, after sales services, specialized management system, etc. are (Jaafari, 1984). In fact, this aspect of management focuses on general policy making of an enterprise. So, considering the above explanations, the second hypothesis is defined as follow:

H2: Management factors consisting management of technology, human resource management, economic management, and organizational management are sustainable competitive advantages.

2.6. Banking services

Although the purpose of RBV is to evaluate firm's SCAs from internal point of view, but due to the high impact of banking services in Iran's industries, this factor has been considered as a source by which firms can create competitive advantages. Banks have a key role in all of world and their

supporting role from small firms is undeniable. Banking facilities, specially, financial facilities could be considered as strong financial source that can rectify shortcomings in startup firms. They can support industries by giving banking facilities with low interest rate and etc.

2.7. Administrative services

Similar to banking services, administrative services are not internal features of a firm, but because of special laws and administrative configuration in Iran, they play effective role in competitive advantages. Administrative services point to some law in business environment, taxes, e –government services, the cooperation between government and industries owners and etc. that can lead firms to sustainable competitive condition.

H3: Supporting factors including banking services and administrative services are sustainable competitive advantages.
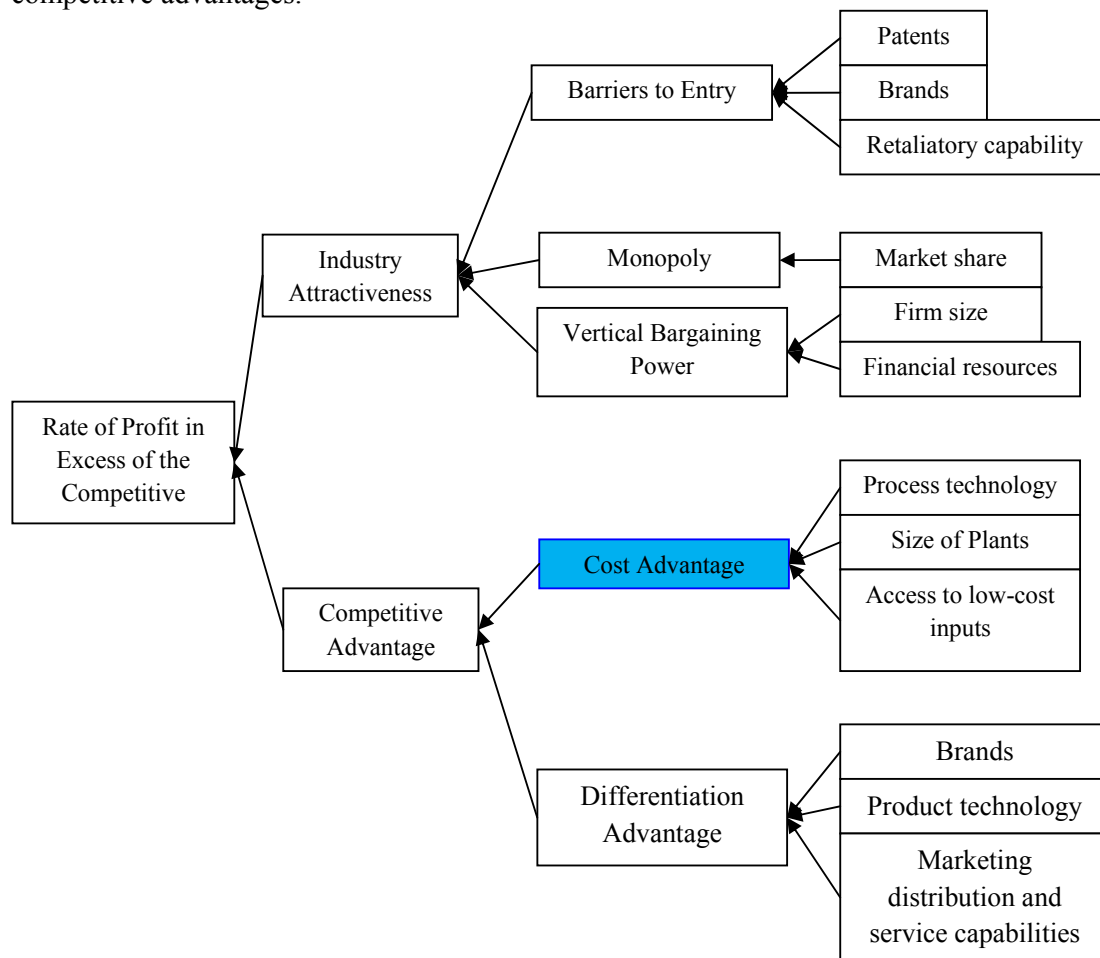

Fig. 2. The position of economic management in creating sustainable competitive advantages (Grant, 1991)

3. Using from structural equation model to create the basic conceptual model

SEM is a useful tool that generally has two main features (Lee et al., 2009; Di Tommaso, 2007):

1. Can find the relationships between independent and dependent variables,
2. Can find the correlation among dependent factors.

In this paper, SEM method is presented where a questionnaire consists of 36 questions by use of 9 – point Likert scale have been examined was designed. Fig. 3 and Table show some of the results.

Table 2
An example of questionnaire

Factor	Description	Levels
Location of firms	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Human resource management	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Management of technology	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Economic management	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Organizational management	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Management factors	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Banking services	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Administrative services	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)
Supporting services	Valuable	1–9 (1:very much darkness, 9: very much lightness)
	Rare	1–9 (1:very much darkness, 9: very much lightness)
	Costly to imitate	1–9 (1:very much darkness, 9: very much lightness)
	Organized properly	1–9 (1:very much darkness, 9: very much lightness)

To increase the validity of the questionnaire, 8 people that constitute 3 Ph. D students, 3 people of small firms' managers that had more than 15 years working experience, and 2 experts in management field, gave their valuable opinions on the questionnaires.
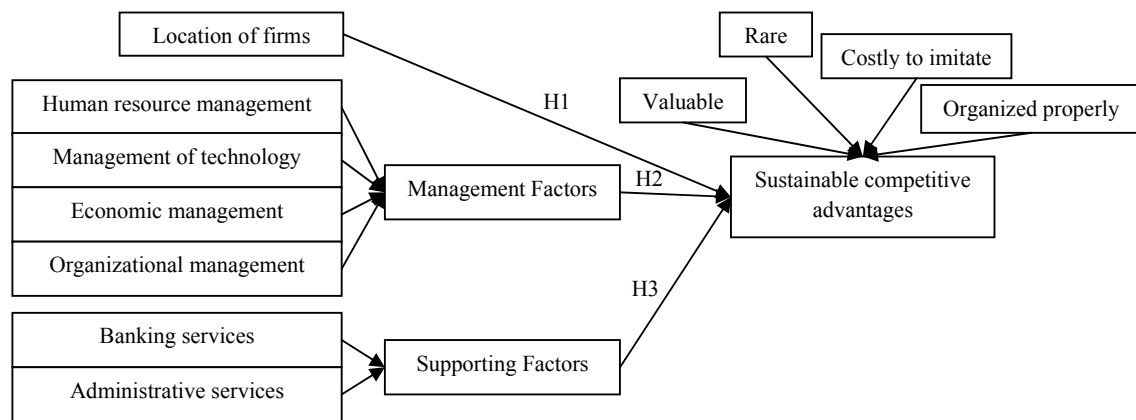

Fig. 3. An initial conceptual model for factors

To fill the questionnaires, 200 people of Qom's firms' managers and engineers participated in survey and 196 questionnaires were filled and returned.

3.1. Model fitness

To examine the hypotheses GFI (Goodness of Fit Index) and AGFI (Adjusted Goodness of Fit Index) were used. The application of GFI and AGFI is to verify the reliability and validity of SEM' model (Di Tommaso, 2007). The results of analyzing the sustainable competitive advantages by using of LISREL 8.50 software and the fitness indexes are shown in Table 3.

Table 3
Final model for SCA and modified model fitness

Index	Modified model	Remarks
Degree of Freedom	121	
Minimum fit function Chi –Square	363.937 (P=0.0)	Model acceptance (P=0)
Normal theory weighted least square Chi square	367068	Path acceptance
Estimated non –centrally parameter (NCP)	246.68	
90% confidence interval for NCP	(192.808; 308.177)	
Goodness of Fit Index (GFI)	0.9225	If GFI>0.9, accept
Adjusted Goodness of Fit Index (AGFI)	0.902	If AGFI>0.9, accept
Standard RMR	0.0415	
Root Mean square Residual (RMR)	0.0197	
Normal Fit Index (NFI)	0.909	If NFI>0.9, accept
Non – Normal Fit Index (NNFI)	0.911	If NNFI>0.9, accept
Root Mean Square Error of Approximation (RMSEA)	0.048	If RMSEA<0.05, accept

According to Table 3 and the acceptable results that have been achieved, the verification of the proposed model is as follow:

Table 4
Verification of the proposed model hypothesis

Hypothesis	t –Value	Remarks
H1: Location of firms is a sustainable competitive advantage.	2.411	Accept
H2: Management factors consisting management of technology, human resource management, economic management, and organizational management are sustainable competitive advantages.	7.911	Accept
H3: Supporting factors including banking services and administrative services are sustainable competitive advantages.	2.428	Accept

After gathering and analyzing the questionnaires by LISREL 8.50 software, the final conceptual figure illustrating the relationship between independent and dependent variables was achieved as Fig. 4.
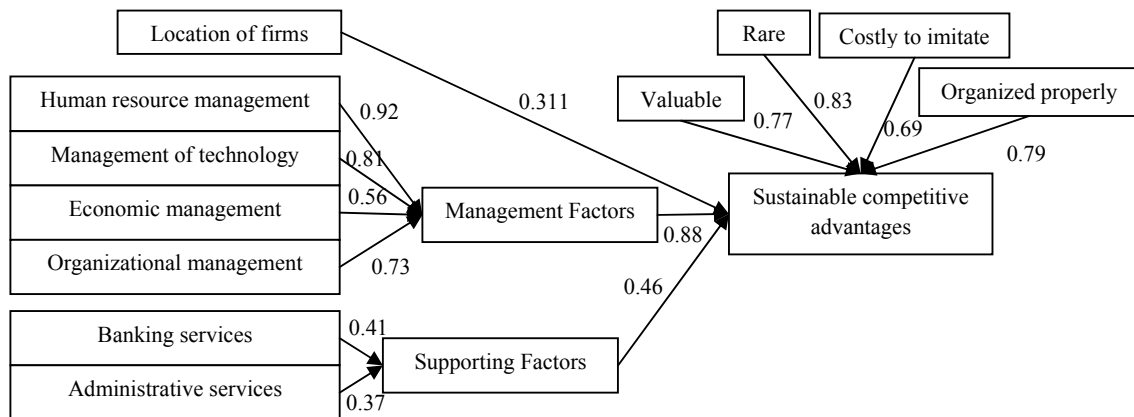

Fig. 4. Final SCA factors of Qom's small industries

3.2 Examining the potentially SCAs in the real world

Up to now, by using of SEM method the main factors that can create SCAs have been recognized. The next purpose is to know the real condition of these potentially factors in making real SCAs.

3.3 Questionnaire

In this paper, questionnaire is the main tool to gather data in order to examine the real world's condition. To design it, at first according to Fig. 4 and based on literature review, some professors' comments, interview with managers of province' small firms, and experts in board of small firms' industry, some general questions were being considered. After defining the questions, all the above individuals who were 27 people confirmed the questions. Then, the indicators by which those questions could be examined were designed. To rank the questions, 5 –point Likert score was used. To measure the validity and reliability of the questionnaire, 65 ones were distributed among academic and industrial managers. Therefore, they gave their comments on questions and some points were corrected. After imposing their comments, 30 questionnaires were distributed among managers. The Cronbach's a –value that indicates the reliability of questionnaire was 96 percent. When the reliability and validity of questionnaire were proved, 200 questionnaires were distributed among Qom's small firms' managers and 167 ones were filled and returned by them.

3.4 Hypotheses

Since the main purpose of designing hypotheses is to examine the proposed conceptual model's elements in Fig. 4, there are 3 main categories for hypotheses. Table 4 demonstrates the main factors, their subsets, and appropriate hypotheses.

Table 5
Factors and hypotheses

Main categorizes	Subsets	Measureable variable	Hypotheses
Location of firms	Location of firms	Firms' locations	H1: Qom's small firms' locations are sufficient.
Management factors	Human resource management	Training, using from skilled forces, expert and productive work force.	H2: Human resource management in Qom's small firms is sufficient.
	Management of technology	The amount of wastes, machinery exhaustion, maintenance and repairing machines, the amount of innovation and new product.	H3: Technologies' management in Qom's small firms is sufficient.
	Economic management	Taking advantage from business plan, technical consulting services, supplying big industries' parts, financial problems, prime cost, balance between revenue and cost, country's economic condition.	H4: Economic management in Qom's small firms' is sufficient. H5: Country's economic instability affects Qom's small firms' economic instability.
	Organizational management	Taking advantage from the role of organizations and associations, R&D center, after sales services, distribution system, early studies of business, consulting services, using from specialized management system, advertisement.	H6: Organizational management in Qom's small firms is sufficient.
	Human resource, economic, and organizational management and management of technology	Human resource, economic, and organizational management and management of technology	H7: There is significant relationship between the way of management, liquidity supply, effective technology, and cost controlling with sustainability of small firms.
Supporting factors	Banking services	The amount of banking facilities, rate of facilities, process of giving facilities, time of giving facilities.	H8: Banking services and cooperation between small firms and banks is sufficient.
	Administrative services	Province' senior officials' supporting, the amount of tax, labor law, social security act, e –government services, environmental condition of business, the qualification of cooperation between small firms and related organizations.	H9: Administrative services and cooperation between small firms and administrations is sufficient.
	Banking and administrative services	Banking and administrative services	H10: There is a significant relationship between banking and administrative services with small firms.

3.5 Statistical analysis

According to the results of the survey, the hypotheses were tested by one –sample t –test method in SPSS software. The descriptive statistics have been provided in Table 6.

Table 6
Descriptive statistics

No	Hypothesis	Number of sample	Mean	Std. Deviation	Minimum	Maximum
1	Location of firms	167	3.13	0.58	1.85	4.62
2	Human resource management	167	2.84	0.75	1	5
3	Management of technology	167	2.64	0.52	1.5	4.5
4	Economic management (internal)	167	2.68	0.47	1.57	3.95
5	Economic management (external)	167	3.54	0.52	1.72	4.61
6	Organizational management	167	2.64	0.62	1.17	4.42
7	Human resource, economic, and organizational management and management of technology	167	2.7	0.48	1.5	4.08
8	Banking services	167	2.33	0.55	1	3.75
9	Administrative services	167	2.55	0.49	1.25	3.58
10	Banking and administrative services	167	2.49	0.43	1.41	3.59

In this paper, test value vas regarded as 3. The level of significant was the base of decision about hypotheses. Table 6 presents the t –test results.

Table 7
T –test results (Test value = 3)

No	Hypothesis	t –test	Degree of freedom	Level of significant	Mean difference	95% Confidence interval of the difference	
						Lower	Upper
1	Location of firms	2.89	166	0.004	0.13	0.0554	0.2035
2	Human resource management	−2.6	166	0.01	−0.1523	−0.2492	−0.0554
3	Management of technology	−8.9	166	0.00	−0.3882	−0.4249	−0.2917
4	Economic management (internal)	−8.73	166	0.00	−0.3105	−0.3718	−0.2492
5	Economic management (external)	13.89	166	0.00	0.5479	0.4827	0.6131
6	Organizational management	−7.33	166	0.00	−0.3523	−0.4317	−0.2728
7	Human resource, economic, and organizational management and management of technology	−7.86	166	0.00	−0.2972	−0.3598	−0.2348
8	Banking services	−15.71	166	0.00	−0.6741	−0.7421	−0.6008
9	Administrative services	−11.71	166	0.00	−0.4498	−0.5134	−0.3863
10	Banking and administrative services	−15.15	166	0.00	−0.5052	−0.5604	−0.4501

Regarding to Table 7 and the hypotheses, Qom's firms' locations are sufficient and could be considered as SCAs. Other potentially resources such as human resource management, management of technology, economic management, organizational management, banking and administrative services are not yet SCAs. Some reasons have been assumed as the causes of the current problems in small firms' area. Tow categorizes as Internal and External Organizational issues are accommodated them.

3.6 Inter organizational problems

The meaning of inter organizational problems are associated within the inside the organization. Generally, they are associated with Management Factors in Fig 4. Some of the problems are as follow:

- Lack of scientific management in small firms,
- Lack of educated workforce,
- Lack of relationship between small firms' managers with scientific and research centers,

- Low rate of innovation and utilizing from R&D centers,
- Machinery wear and lack of serious consideration to the new manufacturing technologies,
- Inefficient cost management,
- Lack of using from experts' technical consultations.

3.7 External organizational problems

Similar to inter organizational problems, the external ones are associated with out of the firms. These problems are related to the supporting factors group in Fig. 4. Some of the external causes are as follow:

- Banks' unwillingness to give facilities to small firms in compare to big firms.
- The high level of banks' facilities rate.
- Lack of supporting laws for manufacturer and extreme supporting from labors.
- Fluctuations in resources' prices.

3.8 Proposing some solutions for the problems

Now that Qom's small firms' problems have been identified, its turn of finding some solutions by which SCAs could be conveyed from potential to actual form. The suggestions are as follow:

- Hiring and utilizing educated managers and human resources,
- Leading traditional managements toward scientific managements,
- Attending to use from R&D centers' capabilities and gaining innovation rate,
- Utilizing from new technologies and accentuating to technologies' repair and maintenance management,
- Making linkage with industrial and technical experts and use from their opinions,
- Reforming the banking system and increasing supports of small firms' managers,
- Creating sustainable economic condition in country.

4. Conclusion

In this paper, the important role of small firms in Iran and especially in Qom province was surveyed. Considering the special position of SCAs in competing with rivals, a SEM model to recognizing Qom's small firms' potentially resources was developed. In line of this goal, a questionnaire of which questions were designed based on RBV distributed among industrial managers. After modeling the resources, the firms' current condition in actualization these potentially opportunities was tested. To do that, another survey in which questionnaire tool was used, was done. The results came from managers views illustrated that except firms' locations, other potentially resources don't have acceptable condition. To lead firms toward using those resources, some suggestions in the end of paper have been proposed.

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