IDENTIFYING AND RANKING THE FACTORS AFFECTING THE PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (THE CASE STUDY OF A PROVINCE IN IRAN)

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Abstract

The purpose of this study is to identify and prioritize the factors affecting the performance of small and medium enterprises (SMEs). In other words, this study aims to answer the following questions: What are the factors affecting SMEs performance? And how are these factors ranked? Currently, due to the specific characteristic of SMEs in the economic sphere, the development of activities can be aimed at determining strengths and weaknesses, identifying opportunities and challenges, identifying critical and control points, and providing information needed for the analysis. The research method used in this study was applied in terms of target, and a descriptive survey in terms of data collection. The method utilized for data analysis was AHP. Therefore, after studying literature and considering SMEs experts' viewpoints and by relying on the etiological three-dimensional model, three factors _ structural, content and environmental _ were identified as the main factors influencing SMEs performance. Each of these factors was divided into four components. The results revealed that in AHP, structural factor has the highest rank, and content and environmental factors rank second and third respectively.

Key words: *Small and Medium Enterprises (SMEs), performance, three-dimensional model*

1. INTRODUCTION

In most countries, small and medium enterprises (SMEs) account for over 95% of manufacturing and industrial enterprises and provide two-thirds of employment in private sector. In Iran, these firms are in a good position by enforcing article 44 of the Constitution and, hence, a large number of studies have been conducted on them (Alidousti, 2009). Various definitions of SMEs have been presented. In its report, UNIDO (2003) indicated that the definitions of SMEs in Iran are not in agreement, and different organizations and institutions have provided different definitions. In the sixteenth chapter of the book called *The Strategy of the Country's Industrial Development* in the part regarding the position and role of the mentioned industries in Iran, the firms with the personnel of below 150 people have been introduced as small and medium enterprises (Azizi, Vakil Alroaia, & Tavangar, 2012).

In Canada, 98% of enterprises are small and medium (Halabisky, 2006). In Japan 60% of industry exports belong to this kind of enterprises. Although 99% of enterprises in Iran are small and medium, only 17% of industry value-added tax belongs to them (Nasehifard, Saadeat, & Abbasi, 2010). Hence, it is evident that there are deficiencies in SMEs performance. The main purpose of the present study, therefore, is to identify and rank the factors affecting SMEs performance. Identifying these factors assists managers and planners in evaluating these firms and improving the performance of the firms involved in small and medium industries by eliminating the existing weaknesses in each index. According to the report of United Nations Industrial Development Organization (UNIDO), SMEs play a decisive role in producing employment and reducing poverty (UNIDO, 2003). They also have an important effect on the absorption of additional (redundant) labor force as one of the consequences of privatization of the activities related to government. SMEs development improves the level of democracy and creates a civilized society and also encourages entrepreneurs to participate in the country's economy, politics, and social systems. Small and medium industries have plenty of competitive advantages compared to large companies. For example, they have more ability for innovation and originality, and owing to their flexibility, they can respond better to environmental changes and satisfy their customers' emerging needs (Azar, Sadeqi, & Kordnaech, 2012). They also

have more opportunities to redesign or alter and improve their management tools and information systems. Moreover, the employees can improve their expertise in novel fields. In spite of the significance of SMEs in countries' economies, research has shown that a great percentage of SMEs encounter failure in the initial years. Ballantine, for instance, demonstrated that 11% of the SMEs established one year ago and also 80% of the new SMEs set up five years ago experience failure (Ballantine, Levy, & Powell, 1998). Although setting up a successful SME in any segment of industry and trade is complicated, these challenges and problems reduce by identifying the factors affecting positive or negative performance of small and medium industries. According to the report of Iran's small industries and industrial cities organization, about 90% of economic institutions in Iran are the ones with less than 50 staff (Iran's small industries and industrial cities organization, 2001). The significance of this study is evident since the country's small and medium industries currently do not know what the criteria and indices of their performance evaluation are and how these criteria are ranked so that by using this prioritization they can provide a checklist for themselves and be aware of their own and their competitors' work processes. Although a lot of studies have been conducted into the literature of SMEs, there has been no study concerning identifying and prioritizing the factors affecting their performance. Prioritizing these factors can assist policymakers and policy-making organizations with purposeful and effective measures regarding these enterprises and can also help the owners of the enterprises focus on key and pivotal measures to achieve growth and improve their performance.

2. REVIEW OF LITERATURE

Karpak and Topcu (2010) utilized analytic network process to prioritize the factors affecting the success of manufacturing SMEs in Turkey. According to the results of this research in which ANP has been used, rules and regulations are the most effective factors in the success of small enterprises. Chorev and Anderson (2006) analyzed crucial factors of success of small, newly formed enterprises possessing superior technology in Israel. According to the results of this research, the most important factors affecting the success of these enterprises include the commitment of management group, expertise, organization methods in general and marketing methods in particular, relation with customers, and managerial capabilities and research. In a study, Man et al. (2002) reviewed the literature of SMEs' success and showed that three features affect the success of these enterprises: endogenous factors, personal qualities, and entrepreneurs' personal qualities (Man, Lau, & Chan, 2002). Rogoff (2004) identified 11 factors affecting the success of small enterprises: personal qualities, managerial issues, financial affairs, marketing activities, human resources issues, economic conditions, product characteristics, competition, discipline, technology, and environmental factors (Rogoff, Lee, & Suh, 2004). In another study, Benzing investigated the factors of success and failure of entrepreneurship in Turkey by utilizing factor analysis statistical method. According to the results of this research, entrepreneurs in Turkey believe that the popularity of the firm and its management including sincerity and social skills, previous experience and the manager's character traits are the most important factors of success of small enterprises. Additionally, a complicated tax system and inability to absorb and keep reliable staff were mentioned as the most important problems of entrepreneurship (Benzing, Chu, & Kara, 2009). Helali and Saedi (2008) in an article entitled "The Role of Small and Medium Industries in Economic Development" stated that small and medium industries development is the secret of economic development in the next decade. In this article, they considered the advantages such as the existence of transportation effect, the effect of market size, the effect of adjustment, the effectiveness of selection and the control effect to be effective in manufacturing most products in small and medium industries compared to large ones. Sepehrdoost and Kamran (2012) in an article entitled "The Evaluation of Technical Efficiency of Small Industries in Hamedan Province" mentioned that some reasons of developing countries' attention to small and medium industries compared to large ones are high flexibility, low cost investments, orientation towards target groups, and dynamic management in these kinds of industries which can create job opportunities, reduce poverty, improve income distribution, and meet basic needs as well as increasing gross national product. The results obtained from the research showed that the average technical efficiency of the performance of small industries in the provinces of the country was 96% during the

study. Analyzing the sensitivity of the factors affecting the efficiency proved that factors such as employment, value of investment, and products value have an important role in the improvement of efficiency of the country's small industries. The average efficiency of small industries in Hamedan Province was obtained 92% during the study and ranked 12 on average among the provinces of the country. Also, the analysis of efficiency index of all production factors showed that efficiency growth of small industries in the province does not have a positive and expected procedure. Aminaqae (2008) in an article entitled "The Study of the Factors Affecting the Performance of Small Industries from Rural Development Experts' Viewpoints" obtained the following results. The present situation of Iran's small rural industries is not able to respond to redundant labor force in agricultural section, significant difference of welfare level between villages and cities, lack of villagers' immigration to big cities, and economic and social development in Iran's villages. The study of the factors affecting the performance of Iran's small rural industries can clarify some important points concerning reasons of lack of agreement between Iran's small rural industries and rural development goals and clarify basic planning lines of enterprises managers and government policymakers. In this article, the factors affecting the performance of Iran's small rural industries have been categorized into three groups, namely structural, environmental and content factors. Then by utilizing the descriptive-quantitative method, Iran's rural development experts' viewpoints are studied regarding the extent to which each factor affects the performance of small rural industries and then each factor is ranked. Aminbeidokhti and Zargar (2011) in an article entitled "The Study of Existing Obstacles to SMEs Development and Presentation of a Framework Supporting Them" maintained that SMEs have encountered various endogenous and exogenous obstacles and problems. Besides, the results of the statistical analyses showed that facilities and financial and nonfinancial supports from SMEs have not been sufficient in financial, technical, marketing, and executive fields. Piri et al. (2013) indicated that the purpose of this research was to study the direct and indirect effects of competitive industrial forces on adopting strategies and performance of small and medium industries in industrial cities and areas in Hamedan Province that was conducted by testing three hypotheses. The method of this research was applied based on the purpose of research, but in terms of procedure and nature, it was a causative research. The population of study, i.e., the managers of manufacturing companies of industrial cities and areas in Hamedan Province, was 501 people. In this research, a questionnaire was designed to collect data, and after testing its validity and reliability, it was given to the sample including 273 managers employed in manufacturing companies of industrial cities and areas in Hamedan Province. Data analysis in this research was carried out by utilizing modeling techniques of structural equations with the software LISREL. The research findings confirm the moderating role of managers' performance by adopting strategies and show that the managers of small and medium industries can moderate some of the negative effects of competitive industrial forces by adopting appropriate strategies in production, study of environment, and flexible decision-making. This research also indicates that the managers' performance can be assessed by comparing direct and indirect effects of competitive industrial forces on performance. The obtained results of this research confirm the moderating role in the performance of managers of industrial units in Hamedan Province by adopting an appropriate strategy.

Conceptual Model: In this study, the factors affecting SMEs performance are the independent variables and SMEs performance is the dependent variable. The following conceptual model was obtained by considering the experts' viewpoints and studying the review of literature. This model is called three-dimensional since the relationship between structural, behavioral and contextual factors is in a way that no organizational phenomenon or event can take place out of these three dimensions interaction. Therefore, this model has a particular comprehensiveness compared to other models, and no item seems to be ignored in it.

Structural dimension: The factors that expose the unit's structures to crisis are called structural damages. Organizational structures are routes, canals and containers in which organizational processes and operations flow. Structural dimension includes all the organization's physical and non-human elements, factors, and conditions that have been joined to each other in a special manner and constitute the organization's physical framework.

Content dimension: As mentioned, the structure is like the container of unit's activities and measures. The content or material that flows into the organization's container is people's activity or behavior. Therefore, unit's major content is human behavior, and human activities and measures are conducted to achieve the organization's predetermined goals. The sum of human's work and energy and the organization's goals and structures appear in organization's main functions or duties. In knowing behavioral damage, functions and operations are centers of attention and we must analyze the factors that disrupt the unit's functions or deviate people's performance from normal state and harm their effectiveness and consequently cause crisis in the organization and stop its healthy growth in general.

Environmental dimension: Environmental dimension has a specific position in three-dimensional theory and organizational etiology. The most important feature is the breadth and history of this dimension compared to structural and content dimensions. The significance of environment can be realized by noticing that the existence of the other two dimensions depends on environmental dimension. The concept of context, that is synonymous to the concept of environment in the systematic theory, is so important that has improved from the level of concept to theory, and researchers and theorists of organizational theories have recently developed important theories on it. The main function of environmental factors is to manage the relationships of organization with its higher systems since each system or organization in its specific position is in constant interaction with systems higher than it and is considered a subsystem in relation to the higher systems. Therefore, all the factors that develop, manage, and provide the organization's timely and appropriate reactions in relation to more important systems are called context or environment. Therefore, contextual or environmental damage is the one that disrupts the organization's appropriate relationship and interaction, or in systematic terms the organization's timely and right reaction, with its environmentally contiguous systems and cause crisis in these relationships.

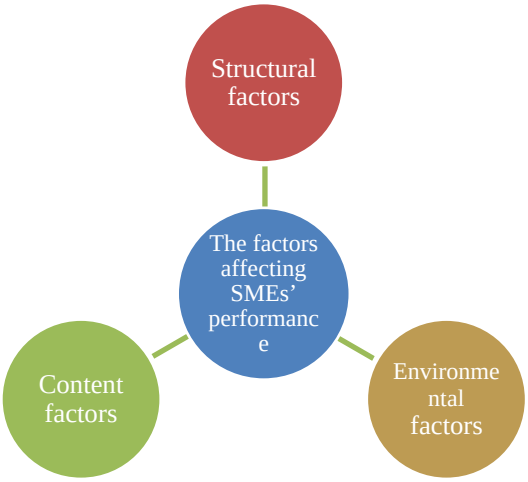


Fig. 1. Conceptual framework of the research

3. METHODOLOGY

This research was applied in terms of purpose and descriptive in procedure. It was conducted in SMEs from the beginning to the end of 2014. The main purpose of the present research is identifying and prioritizing the factors affecting the performance of SMEs. For this reason, first by utilizing different resources and references and also domestic and international articles relevant to small and medium industries, the factors affecting SMEs performance were extracted and then by using factor analysis test, the indices were refined and finally according to the three-dimensional model, three major factors were determined: structural, content, and environmental. Each of the factors had four subdivisions and eventually there were 12 factors. Then by utilizing matrix average of pair comparisons filled by 365 SMEs experts, employees and managers, the initial matrix of the indices' effects on each other was obtained. Then the factors affecting the performance of SMEs were prioritized by using AHP technique. The phases of conducting the research shows in figure 2.

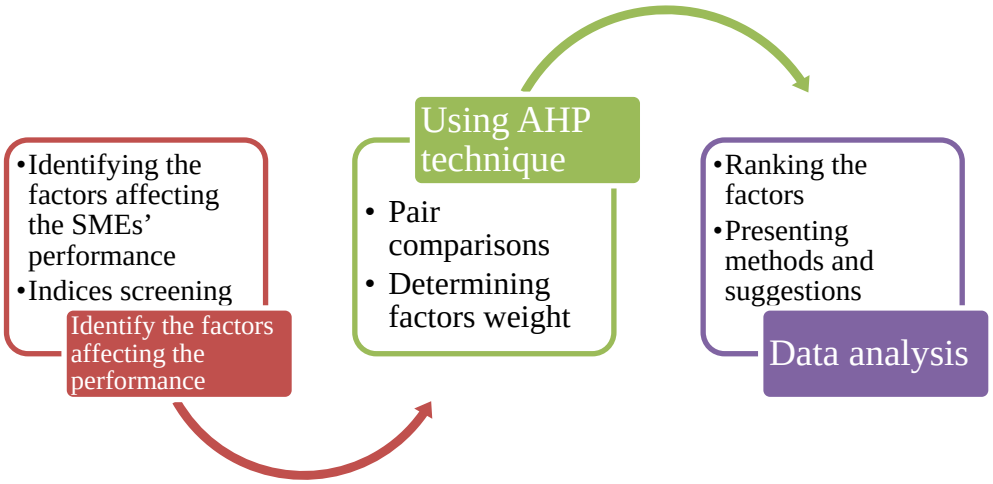


Fig. 2. The phases of conducting the research

In order to prioritize the factors affecting the performance of small and medium industries, the technique of analytic hierarchy process of data (AHP) was used and the following results were obtained by utilizing the software Expert choice.

Table 1. The research variables obtained by literature of research and statistical analyses and interviews

	Structural factors	Content factors	Environmental factors
1	Amount of capital	Human resources	Cultural factors
2	Amount of demand for products	Management strength or weakness	Taxes
3	Amount of financial resources to guarantee contracts	Absorption	Rules and regulations
4	Amount of availability of efficient technology	Development and keeping human resources	Employment and social security regulations
5	Condition of machinery of small and medium manufacturing units	Managers and employees' education	Statesmen and policymakers' viewpoints on small and medium economic enterprises
6	Marketing and sales costs	The extent to which employment and social security regulations are enforced by employers	Amount of presence in national markets
7	Financial facilities	Amount of entrepreneurs' abilities in having healthy and comprehensive competition	Competition
8	Affiliating to larger enterprises	The ability of enterprises managers in making the right and timely decisions when the change in market need arises	Amount of recognition of the significance of small and medium industries
9	Fluctuations in raw materials costs	Amount of familiarity of enterprises managers with information technology and communication skills	Economic conditions
10	Amount of availability of raw materials	Training	Political conditions

Table 2. The variables selected through factor analysis

	Structural factors	Content factors	Environmental factors
1	Amount of capital	Development and keeping human resources	Taxes
2	Amount of demand for products	The extent to which employment and social security regulations are enforced by employers	Rules and regulations
3	Amount of financial resources to guarantee contracts	Amount of entrepreneurs' abilities in having healthy and comprehensive competition	Statesmen and policymakers' viewpoints on small and medium economic enterprises
4	Amount of availability of efficient technology	The ability of enterprises managers in making the right and timely decisions when the change in market need arises	Amount of presence in national markets

The phases of analysis of AHP technique: Applying this technique requires the following five steps;

A. Modeling In this step, problem and goal of decision-making is hierarchically extracted from decision components that are correlated. Decision components include "decision-making indices" and "decision options" (Qodsipour, 2008).

B. Preferred judgment (pair comparisons): Making comparisons between various options of decision, According to each index and judgment regarding significance of decision index with making pair comparisons, after designing hierarchy of decision problem, a decision-maker has to create a collection of matrixes that numerically measure relative significance or preference of indices over each other and each decision option in terms of indices compared to other options. This is done by making two-by-two comparisons between decision components (pair comparisons) and by allocating numerical values which represent preference or significance between two components of decision. For this, comparisons of *i*-th options or indices in relation to *j*-th options or indices are usually used. In the following table the scoring method of indices in relation to each other has been illustrated.

•Scoring of indices in relation to each other

Table 3. The method of scoring in AHP (Mehregan, 2007)

Preferred value	State of comparison of i and j	Explanation
1	Equal importance	i and j options or indices are of equal importance and have no preference over each other.
3	Quite more important	Option or index i is a bit more important than j.
5	More important	Option or index i is more important than j.
7	Much more important	Option or index i has much more preference over j.
9	Completely important	Option or index i is absolutely more important than j and not comparable with it.
2, 4, 6, 8		It shows the values between the preferred ones. For instance, 8 shows an importance higher than 7 and lower than 9 for i.

C. Calculations of relative weights: Determining weight of "decision components" in relation to each other through a series of numerical calculations: The next step in the analytic hierarchy process is to make the required calculations in order to prioritize each decision component by using information from pair comparisons matrixes. The summary of mathematical calculations in this step is as follows:

The average of numbers in each row of normalized comparisons matrix is calculated. This average indicates the relative weight of decision components with matrix rows.

D. Joining relative weights: In order to prioritize decision options, in this step the relative weight of each component has to be multiplied by weight of higher components to obtain its final weight. Through this step, the value of final weight for each option is obtained.

E. Consistency in judgments (Mehregan, 2007)

A. Decision tree: To conduct AHP technique, the decision tree, which is the basis of hierarchy structure and includes goals, criteria, and sub-criteria, has to be drawn. The first level is the purpose of research that is prioritizing the factors affecting SMEs performance. The second level is the level of criteria that fall into three main groups in this research. And the third level has been divided into 12 components in this study.

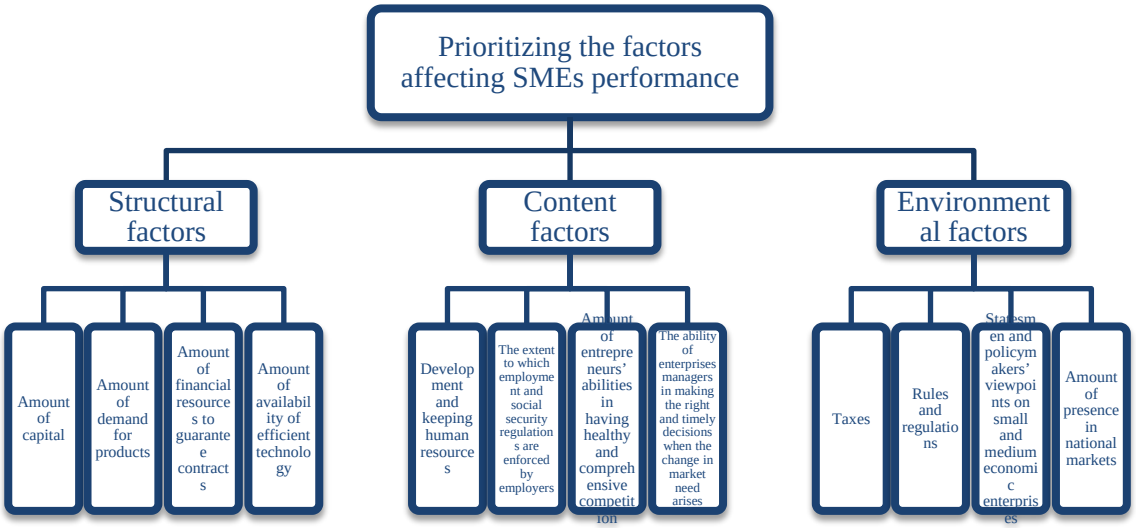


Fig. 3. Decision tree

B. Preferred judgment (pair comparisons)

Table obtained from summary of viewpoints of 365 employees, managers, assistant managers, and experts of SMEs in Semnan Province.

Table 4. The summary of interviewees' viewpoints (matrix of pair comparisons)

Factors	Amount of capital	Amount of demand for products	Amount of financial resources to guarantee contracts	Amount of availability of efficient technology	taxes	Rules and regulation	Statesmen and policymakers' viewpoints	Amount of presence in national markets	Development and keeping human resources	The extent to which employment and social security regulations are enforced	Amount of entrepreneurs' abilities in having healthy and comprehensive competition	The ability of enterprises managers in making the right and timely decisions
Amount of capital	1	$\frac{1}{2}$	3	4	6	5	7	8	9	8	5	3
Amount of demand for products	2	1	2	3	5	7	4	6	8	9	5	6
Amount of financial resources to guarantee contracts	$\frac{1}{3}$	$\frac{1}{2}$	1	3	4	5	7	3	6	8	4	3
Amount of availability of efficient technology	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{3}$	1	2	4	5	2	6	7	3	$\frac{1}{2}$
Taxes	$\frac{1}{6}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{2}$	1	7	5	$\frac{1}{2}$	3	8	$\frac{1}{4}$	$\frac{1}{6}$
Rules and regulations	$\frac{1}{5}$	$\frac{1}{7}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{7}$	1	2	$\frac{1}{4}$	$\frac{1}{5}$	3	2	$\frac{1}{6}$
Statesmen and policymakers' viewpoints	$\frac{1}{7}$	$\frac{1}{4}$	$\frac{1}{7}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{2}$	1	3	2	4	$\frac{1}{5}$	$\frac{1}{7}$
Amount of presence in national markets	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{2}$	2	4	$\frac{1}{3}$	1	3	5	2	3
Development and keeping human resources	$\frac{1}{9}$	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{3}$	5	$\frac{1}{2}$	$\frac{1}{3}$	1	3	2	$\frac{1}{2}$
The extent to which employment and social security regulations are enforced	$\frac{1}{8}$	$\frac{1}{9}$	$\frac{1}{8}$	$\frac{1}{7}$	$\frac{1}{8}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{3}$	1	$\frac{1}{6}$	$\frac{1}{8}$
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	4	$\frac{1}{2}$	5	$\frac{1}{2}$	$\frac{1}{2}$	6	1	2
The ability of enterprises managers in making the right and timely decisions	$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{3}$	2	6	6	7	$\frac{1}{3}$	2	8	$\frac{1}{2}$	1
Sum	4.97	3.67	8.11	15.08	30.79	45.33	44.08	25.11	41.03	70	25.11	19.58

4. EMPIRICAL RESULTS

Calculation of relative weight

Table 5. Matrix of obtained weights for each of the factors affecting the performance of SMEs (vector of relative weight)

The factors affecting the performance of small and medium industries	Factor weight	rank
Amount of capital	0.204	2
Amount of demand for products	0.22	1
Amount of financial resources to guarantee contracts	0.136	3
Amount of availability of efficient technology	0.083	5
Taxes	0.058	7
Rules and regulations	0.032	10
Statesmen and policymakers' viewpoints	0.031	11
Amount of presence in national markets	0.056	9
Development and keeping human resources	0.06	6
The extent to which employment and social security regulations are enforced	0.012	12
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	0.057	8
The ability of enterprises managers in making the right and timely decisions	0.086	4

As it can be observed, the highest weight and therefore the highest rank belong to the factor of amount of demand for products and the lowest rank is for the factor of enforcing employment and social security regulations. Furthermore, according to the average weight of components related to each of the three main factors _ structural, content, and environmental _ , ranking results based on AHP technique are observed in the table below.

Joining relative weights

Table 6. The final ranking of AHP

The factors affecting the performance of small and medium industries	Factor weight	Factor rank
Components of structural dimension		
Amount of capital	0.204	1
Amount of demand for products	0.22	
Amount of financial resources to guarantee contracts	0.136	
Amount of availability of efficient technology	0.083	
Average weight of structural factor	0.16	
Components of content dimension		
Development and keeping human resources	0.06	2

The extent to which employment and social security regulations are enforced	0.012	
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	0.057	
The ability of enterprises managers in making the right and timely decisions	0.086	
Average weight of content factor	0.053	
Components of environmental dimension		
Taxes	0.058	
Rules and regulations	0.032	
Statesmen and policymakers' viewpoints	0.031	3
Amount of presence in national markets	0.0567	
Average weight of environmental factor	0.044	

The highest weight and therefore the highest rank belong to the amount of demand for products and this factor is followed by amount of capital, amount of financial resources to guarantee contracts, managers' ability to make the right and timely decisions, amount of availability of efficient technology, taxes, amount of entrepreneurs' ability in having healthy and comprehensive competition, rules and regulations, statesmen and policymakers' viewpoints, the extent to which employment and social security regulations are enforced, development and keeping human resources, and finally amount of presence in national markets. Also, structural dimension ranks the highest and is followed by content and environmental dimensions. The summary of the results is observed in the table below.

Table 7. Results of ranking the factors affecting SMEs performance

Factors affecting SMEs performance	Rank
Amount of demand for products	1
Amount of capital	2
Amount of financial resources to guarantee contracts	3
Ability of managers in making timely decisions	4
Amount of availability of efficient technology	5
Taxes	6
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	7
Rules and regulations	8
Statesmen and policymakers' viewpoints	9
The extent to which employment and social security regulations are enforced	10
Development and keeping human resources	11
Amount of presence in national markets	12

Consistency in judgments: According to the phases of AHP technique, we go through the following steps to calculate consistency rate and acceptability or unacceptability of consistency of comparisons.

•**Phase 1**. Calculation of vector of weight sum: Matrix of pair comparisons is multiplied by column vector of "relative weight". The new vector obtained in this way is called vector of weight sum.

Table 8. Vector of sum of weights

Factors affecting performance of small and medium industries	Vector of sum of weights
Amount of capital	3.1
Amount of demand for products	3.2
Amount of financial resources to guarantee contracts	2.08
Amount of availability of efficient technology	1.2
Taxes	0.8
Rules and regulations	0.4
Statesmen and policymakers' viewpoints	0.4
Amount of presence in national markets	0.9
Development and keeping human resources	0.3
The extent to which employment and social security regulations are enforced	0.1
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	0.9
The ability of enterprises managers in making the right and timely decisions	1.3

•**Phase 2**. Calculation of consistency vector: The components of vector of weight sum are divided by vector of relative rank. The obtained vector is called consistency vector.

Table 9. Consistency vector

Factors affecting performance of small and medium industries	Consistency vector
Amount of capital	15.2
Amount of demand for products	14.55
Amount of financial resources to guarantee contracts	15.29
Amount of availability of efficient technology	14.46
Taxes	13.79
Rules and regulations	12.5
Statesmen and policymakers' viewpoints	12.90
Amount of presence in national markets	15.87
Development and keeping human resources	5
The extent to which employment and social security regulations are enforced	8.33
Amount of entrepreneurs' abilities in having healthy and comprehensive competition	15.79
The ability of enterprises managers in making the right and timely decisions	15.12
Sum of weight vector	158.8

•**Phase 3**. Calculation ofλmax: The average components of consistency vector show λmax.

λmax=13.23

•**Phase 4**. Calculation of consistency index: Consistency index is defined in the following way. λmax is 13.23.

$$CI = \frac{\lambda max - n}{n - 1}$$

CI=0.111

Where n represents the number of options that exist in the question and is 12 here.

•**Phase 5**. Calculation of consistency ratio: Consistency ratio is obtained from division of consistency index by random index.

Consistency ratio of 0.1 or less than that indicates consistency in comparisons (Mehregan, 2007).

Random index is obtained from the table below.

Table 10. Random index (RI) (Mehregan, 2007)

N	1	2	3	4	5	6	7	8	9	10	11	12	13	14
RI	0	0	0/58	0/9	1/12	1/24	1/32	1/41	1/45	1/19	1/51	1/48	1/56	1/57

$$CR = \frac{CI}{RI}$$

The consistency index is obtained 0.111. According to the table, the random index of the sample with 12 indices is obtained 1.48. Therefore, CR is 0.075. Hence, the consistency ratio is acceptable since it is smaller than 0.1.

5. DISCUSSION

Karpak and Topcu (2010) utilized analytic network process to prioritize the factors affecting the success of manufacturing SMEs in Turkey. According to the results of this research in which ANP has been used, rules and regulations are the most effective factors in the success of small enterprises. But in the present research, although rules and regulations are categorized in environmental factors, this component is ranked eighth, not first.

Rogoff (2004) identified 11 factors affecting the success of small enterprises: personal qualities, managerial issues, financial affairs, marketing activities, human resources issues, economic conditions, product characteristics, competition, discipline, technology, and environmental factors (Rogoff et al., 2004). In our research, we identified 12 factors including the ones mentioned above.

Aminaqae (2008) in an article entitled “The Study of the Factors Affecting the Performance of Small Industries from Rural Development Experts’ Viewpoints” obtained the following results. The present situation of Iran’s small rural industries is not able to respond to redundant labor force in agricultural section, significant difference of welfare level between villages and cities, lack of villagers’ immigration to big cities, and economic and social development in Iran’s villages. The study of the factors affecting the performance of Iran’s small rural industries can clarify some important points concerning reasons of lack of agreement between Iran’s small rural industries and rural development goals and clarify basic planning lines of enterprises managers and government policymakers. In this article, the factors affecting the performance of Iran’s small rural industries have been categorized into three groups, namely structural, environmental and content factors. Then by utilizing the descriptive-

quantitative method, Iran's rural development experts' viewpoints are studied regarding the extent to which each factor affects the performance of small rural industries and then each factor is ranked. As it is observed, in the present study three types of factors (structural, content, and environmental) have been considered like the above-mentioned study.

In their research, Piri et al. (2013) indicated that the managers of the industrial units located in industrial cities and areas can adopt appropriate strategies in the fields of production, investigation of environment, and flexible decision-making in order to moderate the negative effects of competitive industrial forces. In the present study, managers' ability to make right and timely decisions has been identified as one of the factors affecting the performance of small and medium industries and ranked fourth.

6. CONCLUSION AND SUGGESTIONS

The obtained results of this study indicate that the highest weight and therefore the highest rank belong to amount of demand for products and this factor is followed by amount of capital, amount of financial resources to guarantee contracts, managers' ability to make the right and timely decisions, amount of availability of efficient technology, taxes, amount of entrepreneurs' ability in having healthy and comprehensive competition, rules and regulations, statesmen and policymakers' viewpoints, the extent to which employment and social security regulations are enforced, development and keeping human resources, and finally the amount of presence in national markets. Also, structural, content, and environmental dimensions rank the highest respectively. Therefore, we can conclude that although human and environmental factors affect the performance of small and medium industries, structural factors are the most effective ones. Considering the results of the research in which structural factor is of the highest rank in the hierarchy of indices, we can say that SMEs' managers and entrepreneurs can improve the performance of their organization by establishing an effective and modern organizational structure and eliminate the weaknesses of the organization by utilizing their human resources. As it is evident from the results of the present study, unlike the attitude of some managers who see environmental and human factors more effective than structural factors on performance of organizations, it is observed that structural factors have the most importance. Since managers have the authority to affect and change this factor, it is suggested that they pay more attention to this component and by establishing an appropriate and efficient structure take an important step for their organizations to achieve the best performance.

1. Since structural factors are of higher ranks than environmental and content ones, it is suggested that SMEs improve their performance by regulating the affairs of their organizations and improve the mentioned organizational factors by considering the results of the present research.
2. The second rank is for content factors. It is observed that unlike the idea of SMEs' managers, content factors affect their performance more than environmental factors. Therefore, we can conclude that improvement of SMEs performance is more affected by managers' decisions, employees' performance, and general structure of companies than by environment. It is suggested that the managers of these industries fight against external threats by utilizing internal strengths.
3. The lowest rank is for environmental factors. This fact brings us satisfaction since these factors cannot be controlled so much. From among environmental components, the highest weight belongs to taxes. It is hoped that through policymakers' arrangements, this factor does not lead to negative performance of industries. It is suggested that owners of industries get fully aware of it by investigating their external environment in order to turn its threats to opportunities for themselves.
4. The highest rank is for amount of demand for product. It is suggested that this factor be used to improve performance by utilizing the factors of marketing and management of marketing and correct and modern sales of enterprises.
5. Amount of capital and amount of financial resources to guarantee contracts rank second and third respectively. Small and medium industries can improve these factors in order to improve their

performance by funding methods such as different kinds of loans and also cooperation with banks and financial institutions.

6. Managers' ability to make timely decisions and amount of availability of efficient technology rank fourth and fifth. Managers can gain this ability by attending educational classes or employing management experts and consultants and increasing and updating their knowledge. Also, by setting up cooperative companies, they can purchase and access efficient technologies.
7. Tax is a factor affecting the performance of small and medium industries. The owners of these industries can solve this problem by necessary negotiations with policymakers and statesmen. Today, however, by the law of value-added tax, the producers do not pay this tax and consumers have to pay it.
8. Rules and regulations, statesmen and policymakers' viewpoints, and the extent to which employment and social security regulations are enforced rank eighth to tenth respectively. These enterprises can improve their performance noticeably by familiarity with and observance of these regulations and establishment of constant relations with statesmen through holding monthly meetings.
9. And finally development and keeping human resources and amount of presence in national markets rank eleventh and twelfth. Managers can develop and keep human resources effectively by absorbing and employing intelligent and skillful forces and holding in-service training and developing a fair system of punishment and reward. They can also participate in national markets by identifying target markets by utilizing marketing and social regulations and sciences.

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