

Full Length Research Paper

A review on Iran's carpet industry situation in international markets

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The concept of compatibility has attracted abundant attentions of both scholars and governors in recent years. This study investigates the role of market-based view dimensions on Iran's carpet industry compatibility. The results which are obtained through the Pierson correlation and regression represent the positive effects and meaningful aspects of market-based view including market intensity, customer capital and competitive intelligence on compatibility. In continuity, the 'Average' test results showed that within all variables considered in this study, the competitive intelligence variable is the only one which is not placed in a satisfactory level. At the end and with the fuzzy TOPSIS technique applied, all variables were ranked such that "market share", "customer needs identification" and "market intelligence" were the most important sub-scales in market-based view dimension.

Key words: Compatibility, market-based view, hand-made carpet industry.

INTRODUCTION

In globalization age, the economic competition among countries and economic enterprises has increased globally. The concept of competitiveness has been used by Michael Porter at a wide extend of competitiveness of enterprise and industry to national and global competitiveness (Porter and Schwab, 2008).

Competitiveness has increasingly gained currency across the globe (World Economic Forum, 2011). The changes in globalization process means that the nations can not reach suitable development just from producing commodity and services for national markets. In 21st century, the degree of development of nations depends on their political, national and economical capacity, their leaders and also the speed of their national institutions in adjustment and use from globalization process. So, the exact identification of globalization process and exact scrutiny of this trend is necessary in different countries especially in developing countries that have entered into this scene (Safari and Asgharizadeh, 2008). In global economy, the compatibility means the ability of obtaining suitable and constant situation at international markets.

In view of OECD, the ability of a country in producing commodities and services for presentation in international markets is one of the most important dimensions of competitiveness. The competitiveness means reaching of internal commodities and services to international markets. The competitiveness has been also defined as the ability of an economy for stabilization of its share in the market and in all these definitions, the concept of competitiveness attracts attention as obtaining a suitable place in international markets for products of a country (Karimi-Hesenijeh, 2007).

The economy of Iran is in a condition where, on the one hand, trade liberalization is under severe international pressure and, on the other hand, in order to have sustainable development, Iran needs considerable development of non-oil exports and increasing its share of the total exports. Considering huge resources, capacities and potentials, it seems that, through proper support, direction and management, Iranian industries can achieve an acceptable level of competitiveness in the international market and have considerable effects in improving the economy of Iran (Aghazadeh et al., 2007).

Iran hand-made carpet influenced by remarkable cultural and artistic characteristics of the past centuries and decades, has always been a especial product in the

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non-oil export basket; so that over the years it has had the first and highest rate of attracting currency and is responsible for 7% of all employment in Iran and is the source of income for several million Iranians (Almasi et al., 2010). During the recent years, exports of Iranian hand-made carpet has had a decreasing trend and lower prices of the carpets made by competitors from other countries as well as their compatibility with the taste of the international market are among reasons behind the development of some rival states in the international market.

Besides, among reasons behind the failure of Iranian production and service companies in the international market, one can refer to their lack of competitiveness in the international markets. If we can identify the factors comprising and affecting the competitiveness of carpet industry as well as its effective internal relationships, then we may recommend strategies for enhancing its competitiveness in the international market of hand-made carpet.

Both the market orientation and compatibility has been the subject of conceptual and empirical studies. However, the association of market orientation with firm or industry compatibility in the rapidly changing environment of a transitional economy has not received appropriate attention in marketing literature. A lot of studies have suggested that the marketing environment affects the speed with which marketing concepts are adopted, the forms of market orientation and the level of firm compatibility. However, only a few empirical studies have investigated the development of market orientation in transitional economies (Akimova, 1997). These studies showed that one of the most important barriers to the development of market orientation was managers' belief that marketing could not precipitate their firm's survival in the complex environment of a transitional economy. However, the problem of whether market orientation can improve company compatibility within a complex and uncertainly environment has not been examined.

Therefore, this article is an attempt to identify and examine cause and affect relationship between the market orientation dimensions and Iran's hand-made carpet industry compatibility and seeks to find the most effective as well as the most affected factors and also the most and least interactive factors on market based view in this industry.

LITERATURE REVIEW

Compatibility

Compatibility can be considered as a multidimensional concept. It is looked at from three different levels: country, industry, and firm level. Compatibility rooted from the Latin word, "competer" that means involvement in a business rivalry for achieving more market share. It can

be described that economic strength of an entity with respect to its competitors in the international market economy in which goods, services, people, skills, and ideas move across geographical borders freely (Murths, 1998). Compatibility can be defined as the ability to design, produce and or market products superior to those offered by rivals, considering the price and non-price qualities (D'Cruz and Rugman, 1992).

Compatibility processes are the processes that help identify the importance and current performance of core processes such as strategic management, human resources, operations management and technology management processes. The competitiveness process can be viewed as a balancing process which complements traditional functional processes such as operations management and human resources management. It enhances the ability of an organization or industry to compete more effectively (Ambastha and Momaya, 2004).

Competitiveness of industry

When compatibility of industry is considered as the microenvironment of activity and competition of businesses, it assumes an underlying nature and approximates the national level; on the other hand, when it is considered as a collection of businesses active in a specialized field as compared with competitor industries, it is situated in the national as well as international competitive environment, it assumes a functional nature and becomes similar to the business level. Accordingly, in some cases, compatibility of industry, conceptually and in regard to determinative factors of compatibility, has commonalities with compatibility of the country and businesses (Aghazadeh et al., 2007).

Compatibility of industry is viewed within a functional framework including aspects of competitive performance, competitive potential, and managerial process (Buckley et al., 1988). According to Porter, there are two major factors affecting the profitability of a business in the market that consist of the structure of the industry in which the business is active and competitive locating of the business in that industry. These two are strategic factors that lead to formulation and implementation of business strategy (Hax and Wilde, 2001).

Structure of the industry describes the value created by business activity of the members of the industry and also their capacity for contributing to the created wealth. In fact, an industry can be competitive and create higher value compared with competitor industries in the competitive market only when it is in coordination with factors of national environment and enjoys cooperation among the forces of its internal structure (Almasi et al., 2010).

Porter believes that the structure of industry typically has five forces: the intensity of competition among the

rivals in the industry, threat of newcomers in the industry, threat of alternative products, bargaining ability of the buyers (customers), and bargaining ability of the suppliers. These five forces determine the attraction and compatibility of industry in the competitive markets (Porter, 1979). Taking these forces into consideration, an active business in a specific industry can secure itself a suitable competitive position in the competitive markets (Aghazadeh et al., 2007).

Market-based view

Market orientation is a very important resource of gaining competitive advantage. Market orientation or customer orientation research can be traced back at least to 1950s. One of the most important statement among the first scholars to emphasize the marketing concept is: 'there is only one valid definition of business purpose: creating a customer ...'. The fact that market orientation has been intensively studied may also be due to its affective managerial relevance.

There have been empirical measurements of market orientation which are developed by a number of scholars from both perspectives of the organizational culture and a set of processes and activities. On this basis, a customer-oriented scale for measuring market orientation was proposed. Regardless whether the measurement is focusing on culture or processes/activities, a market orientation should include one value that all members of the organization commit to continuously create superior value for customers (Haghshenas et al., 2010).

Market orientation has been conceptualized as a multidimensional organizational phenomenon, where each dimension represented a different feature of market orientation. Market orientation is also defined as: "the organization-wide generation of market intelligence, pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization-wide responsiveness to it" (Kohli and Jaworsky, 1990). It consists of customer orientation, competitor orientation and inter functional co-ordination that organizes the utilization of company or industry resources for creating superior value for target customers. Market orientation results in a deeper understanding of customer desires, the peculiarities of marketing environment and of strengths and weaknesses of the rivals (Akimova, 2000).

In the market-based view, firms are largely seen as being homogeneous, and competition is considered as occurring via positioning in markets (Saeedi, 2009). According to the market based view, the sources of value for the firm are embedded in the competitive situation which is characterizing its external product markets. In this perspective, a firm's sources of market power explain its relative performance. Although many aspects of market power are discussed in the literature (Tallman, 1991), three market power sources are frequently

highlighted: monopoly, barriers to entry, and bargaining power (Grant, 1991). When a firm has a market environment which is characterized by the presence of monopoly or a strong market position, its expected performance will be higher. By the same token, an industry which has high barriers to entry for new rivals also implies greater long-run performance since the firm faces less competition. Higher bargaining power within the industry relative to distributors, suppliers and customers also suggests that the firms will be associated with higher expected performance, since the firms' power over their constituents indicates that they have fewer alternatives within the industry to which they are able to turn. The structural attributes of industries have been observed to change very slowly, suggesting that market power of incumbent firms does not erode rapidly. Even in a changing environment, past market power of incumbents provides a (temporary) cushion from new competition that can be applied to regain market power. For these reasons, greater market power is associated with higher firm value (Makhija, 2003).

Conceptual framework and hypotheses

Considering research literature, the conceptual model in Figure 1 can be chose for the aim of the current study. This model, which is a part of the research of Mehregan et al. (2008), measures the effect of market-based view on Iran's carpet industry compatibility. Within this model, market-based view which includes market intensity, customer capital and competitive intelligence are independent variables and compatibility is the dependent variable.

H₁: There is positive and meaningful correlation between market intensity and Iran's carpet industry compatibility.

H₂: There is positive and meaningful correlation between customer capital and Iran's carpet industry compatibility.

H₃: There is positive and meaningful correlation between competitive intelligence and Iran's carpet industry compatibility.

RESEARCH METHODOLOGY

The study is in a society involving 67 people from chairmen of Qom province business room and Iran national carpet center whereas this number seems to be adequate, so all statistical society was considered as sample.

For gathering data, liberty method and questionnaire were used. The questionnaire included 44 questions about Iran carpet industry compatibility. For assessing questionnaire validity we asked for experts' opinions and to confirm its reliability Cronbach's alpha method has been applied. The reliability results calculated 0.78 which was above the reasonable threshold (0.7).

Decision making process by fuzzy TOPSIS technique

Technique for order performance by similarity to ideal solution

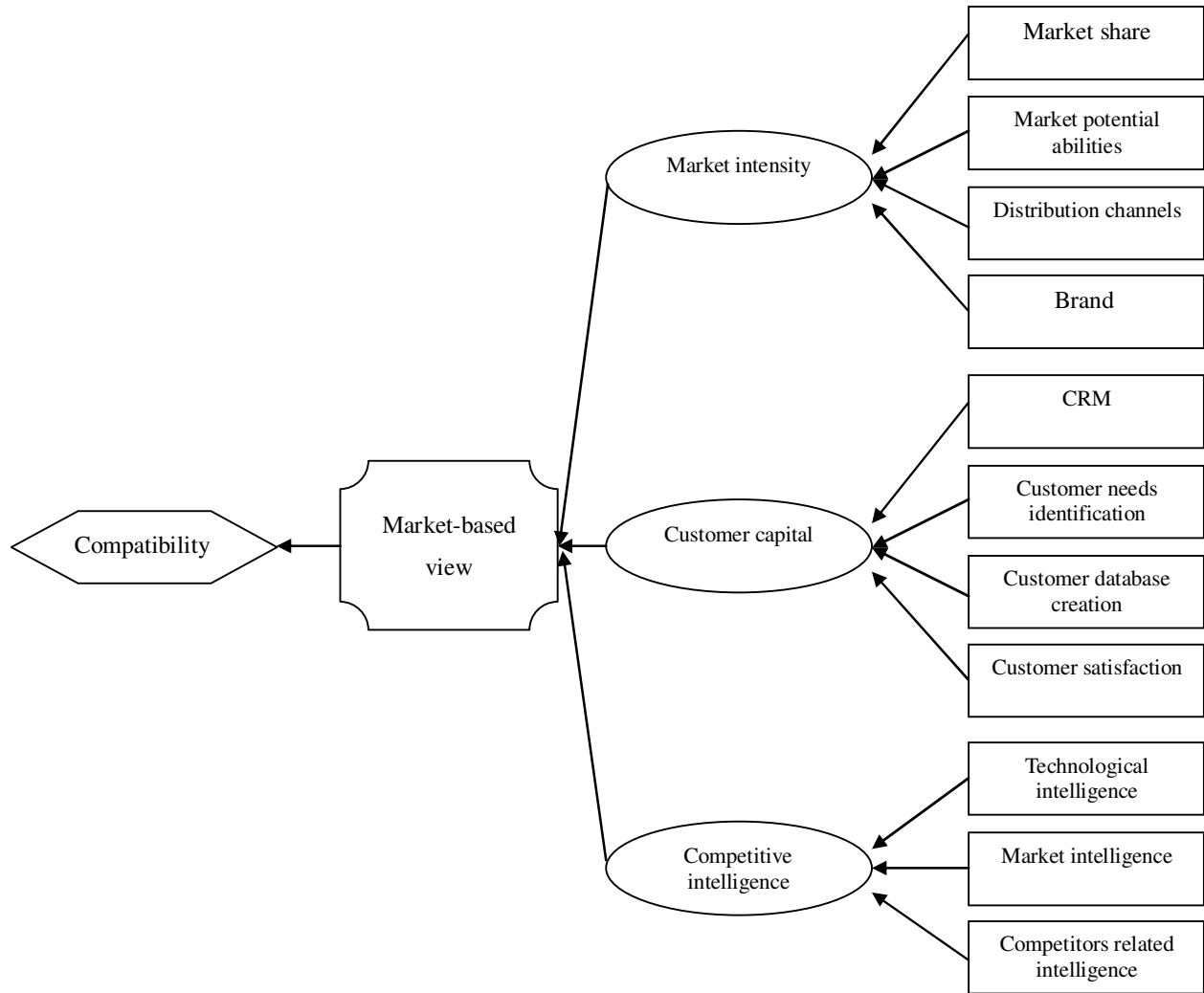


Figure 1. Conceptual framework of the research (Mehregan et al., 2008).

(TOPSIS), one of known classical multiple criteria decision-making (MCDM) method, was first developed by Hwang and Yoon (1981) for solving MCDM problems. TOPSIS is known as one of the most classical MCDM methods, which is based on the idea, that the selected alternative should have the shortest distance from the positive ideal solution and on the other side the farthest distance of the negative ideal solution. The TOPSIS-method will be applied to a case study, which is described in detail. In classical MCDM methods, the ratings and the weights of the criteria are known precisely (Jahanshahloo et al., 2006).

Decision making process steps by fuzzy TOPSIS techniques are as follows:

- Step 1: Calculating weights vector w_j
- Step 2: Normalizing the calculated matrix

$$\tilde{R} = \left[\tilde{r}_{ij} \right]_{m \times n} \tag{1}$$

$B \subseteq \{1, \dots, n\}$ is related to benefit-based indices and

$C \subseteq \{1, \dots, n\}$ is related to cost-based indices.

$$\tilde{r}_{ij} = \left(\frac{a_{ij}}{d_j^*}, \frac{b_{ij}}{d_j^*}, \frac{c_{ij}}{d_j^*}, \frac{d_{ij}}{d_j^*} \right), \quad j \in B \tag{2}$$

$$\tilde{r}_{ij} = \left(\frac{a_j^-}{d_{ij}^-}, \frac{a_j^-}{c_{ij}^-}, \frac{a_j^-}{b_{ij}^-}, \frac{a_j^-}{a_{ij}^-} \right), \quad j \in C \tag{3}$$

Step 3: So normalized weighted matrix is calculated as formula 4:

$$\tilde{V} = \left[\tilde{v}_{ij} \right]_{m \times n}, \quad i = 1, 2, \dots, m, \quad j = 1, 2, \dots, n$$

$$\tilde{v}_{ij} = \tilde{r}_{ij} \otimes \tilde{w}_j \tag{4}$$

Table 1. Linguistic variables for the importance weight (Chen, 2000).

Very low	VL	(0, 0, 1, 2)
Low	L	(1, 2, 2, 3)
Medium Low	ML	(2, 3, 4, 5)
Medium	M	(4, 5, 5, 6)
Medium high	MH	(5, 6, 7, 8)
High	H	(7, 8, 8, 9)
Very high	VH	(8, 9, 10, 10)

Table 2. Results of using Pearson correlation test.

Correlation	Pearson r	Sig	Test result
Market intensity with compatibility	0.44	0.033	H0 hypothesis is rejected
Customer capital with compatibility	0.53	0.008	H0 hypothesis is rejected
Competitive intelligence with compatibility	0.47	0.000	H0 hypothesis is rejected

Step 4: Determining the fuzzy positive ideal solution \tilde{v}_j^* (FPIS) and fuzzy negative ideal solution \tilde{v}_j^- (FNIS) (Formulas 5 and 6):

$$\tilde{v}_j^- = \begin{cases} \min_{i=1, \dots, m} \tilde{v}_{ij}; & j \in B \\ \max_{i=1, \dots, m} \tilde{v}_{ij}; & j \in C \end{cases}$$

$$\tilde{v}_j^* = \begin{cases} \max_{i=1, \dots, m} \tilde{v}_{ij}; & j \in B \\ \min_{i=1, \dots, m} \tilde{v}_{ij}; & j \in C \end{cases} \tag{5}$$

$$FNIS = \{\tilde{v}_j^- \mid j = 1, \dots, n\}$$

$$FPIS = \{\tilde{v}_j^* \mid j = 1, \dots, n\} \tag{6}$$

Step 5: Calculating the alternatives from positive and negative ideal by applying Formulas 8 and 9:

$$d_i^* = \sum_{j=1}^n d(\tilde{v}_{ij}, \tilde{v}_j^*), i = 1, \dots, m \tag{7}$$

$$d_i^- = \sum_{j=1}^n d(\tilde{v}_{ij}, \tilde{v}_j^-), i = 1, \dots, m \tag{8}$$

Step 6: Calculating the relative closeness to the ideal solution:

$$Cc_i = \frac{d_i^-}{d_i^- + d_i^+} \tag{9}$$

In real-word situation, because of incomplete or non-obtainable information, the data (attributes) are often not so deterministic,

there for they usually are fuzzy/imprecise. So, we try to extend TOPSIS for fuzzy data to categorize the driving factors affecting on Iran carpet industry compatibility. Linguistic variables for the important weight of each criteria are shown in Table 1.

Data analysis

Pearson's correlation test

To investigate the relations of the variables Pearson's correlation test was applied. The results are shown in Table 2. The table presents the correlations of each of the three items. Pearson correlation matrix reveals that market-based view dimensions are all significantly and highly correlated with Iran's carpet industry compatibility.

Regression test

To investigate how intense is the effect of market based dimensions on compatibility, the regression test was used. Table 3 suggests the direct and meaningful linear correlation between market based view dimensions with compatibility. The linear correlation is shown as follows:

$$\text{Compatibility} = 1.414 + 0.46 (\text{market intensity}) + 0.55 (\text{customer capital}) + 0.59(\text{competitive intelligence})$$

Average test

This test has been applied to measure the market based view levels and their dimensions. As it can be viewed in Table 4, the entire variables except competitive intelligence are higher than Z-value. Therefore table 3 suggests that the Iran's carpet industry is in a favorable level from its compatibility and market based dimensions and it is not in a desirable level from competitive intelligence aspect.

Fuzzy TOPSIS technique

After distributing questionnaire among statistical society people and

Table 3. Result of using multi-variables regression.

Variables	Standardized coefficients		Unstandardized coefficients		T value	sig
	Beta	Standard error	B			
Constant		4.224	1.414	4.536	0.000	
Market intensity	0.43	0.079	0.46	1.721	0.019	
Customer capital	0.48	0.065	0.55	2.912	0.000	
Competitive intelligence	0.52	0.068	0.59	3.019	0.000	

Table 4. Results from average test application.

Dimensions	Z _{0.05}	Z value	Test result
Market intensity	1.645	2.547	High level ranking in application
Customer capital	1.645	1.844	High level ranking in application
Competitive intelligence	1.645	1.311	Low level ranking in application
Compatibility	1.645	2.429	High level ranking in application

Table 5. Decision making matrix and fuzzy weights.

Variables	8	9	10	10	7	8	8	9	4	5	5	6
	Market intensity				Customer capital				Competitive intelligence			
P1	8	9	10	10	8	9	10	10	4	5	5	6
P2	0	0	1	2	2	3	4	5	2	3	4	5
P3	5	6	7	8	5	6	7	8	2	3	4	5
P4	2	3	4	5	4	5	5	6	0	0	1	2
P5	0	0	1	2	1	2	2	3	4	5	5	6
P6	8	9	10	10	7	8	8	9	5	6	7	8
P7	2	3	4	5	2	3	4	5	7	8	8	9
P8	2	3	4	5	7	8	8	9	0	0	1	2
P9	5	6	7	8	4	5	5	6	5	6	7	8
P10	7	8	8	9	5	6	7	8	8	9	10	10
P11	5	6	7	8	2	3	4	5	7	8	8	9

gathering data, decision making matrix with fuzzy weights was formed as Table 5. By applying formula 5, fuzzy weighted normalized matrix is calculated as Table 6. Finally, by utilizing Formulas 6 to 10, fuzzy positive ideal solution, fuzzy negative ideal solution and variables final weights and ranks were calculated as shown in Table 7. As shown in the table, "market share", "customer needs identification" and "market intelligence" have been selected as the most important variable in Iran's carpet industry compatibility.

RESULTS AND RECOMMENDATION

The purpose of writing current paper is to survey Iran's hand-made carpet industry in international markets. The results from correlation test propose a meaningful and positive relation between "market share", "customer capital" and competitive intelligence" with Iran's carpet industry compatibility. While the regression test shows

how intense is the effect of every variables, in which competitive intelligence were recognized to be more effective.

In continuity, the average test was applied to the data, to investigate the level of every variable. The results show that the entire variable, except for compatibility was on a desirable level. Finally, by utilizing fuzzy TOPSIS technique, market based view were categorized that "market share", "customer needs identification" and "market intelligence" were having more strength than other variables.

Considering the results, some managerial strategies like "creating customer database", "creating various distribution channels in target countries", "recognizing target customers' needs all over the world" and "producing goods on the basis of their desires" are suggested to increase customer capital.

Table 6. Fuzzy weighted normalized matrix.

Variables	Market intensity				Customer capital				Competitive intelligence			
P1	0.64	0.81	1	1	0.56	0.72	0.8	0.9	0.16	0.25	0.25	0.36
P2	0	0	0.1	0.2	0.14	0.24	0.32	0.45	0.08	0.15	0.2	0.3
P3	0.4	0.54	0.7	0.8	0.35	0.48	0.56	0.72	0.08	0.15	0.2	0.3
P4	0.16	0.27	0.4	0.5	0.28	0.4	0.4	0.54	0	0	0.05	0.12
P5	0	0	0.1	0.2	0.07	0.16	0.16	0.27	0.16	0.25	0.25	0.36
P6	0.64	0.81	1	1	0.49	0.64	0.64	0.81	0.2	0.3	0.35	0.48
P7	0.16	0.27	0.4	0.5	0.14	0.24	0.32	0.45	0.28	0.4	0.4	0.54
P8	0.16	0.27	0.4	0.5	0.49	0.64	0.64	0.81	0	0	0.05	0.12
P9	0.4	0.54	0.7	0.8	0.28	0.4	0.4	0.54	0.2	0.3	0.35	0.48
P10	0.56	0.72	0.8	0.9	0.35	0.48	0.56	0.72	0.32	0.45	0.5	0.6
P11	0.4	0.54	0.7	0.8	0.14	0.24	0.32	0.45	0.28	0.4	0.4	0.54

Table 7. Variables final ranks.

Variables	D_i^+	D_i^-	Cc_i	Rank
Market share	1.235621428	1.895441133	0.605366739	1
Market potential abilities	2.471599426	0.620185902	0.200591515	10
Distribution channels	1.731370909	1.372385271	0.442169163	5
Brand	2.240639716	0.836877123	0.271932589	9
CRM	2.515077245	0.556055854	0.181058859	11
Customer needs identification	1.251231212	1.877778455	0.600119097	2
Customer database creation	2.003351678	1.080948312	0.350467956	7
Customer satisfaction	2.011185805	1.076412328	0.348624491	8
Technological intelligence	1.695961631	1.391594623	0.450710694	4
Market intelligence	1.316835858	1.77783209	0.574482342	3
Competitors related intelligence	1.742361746	1.353210779	0.437143943	6

Although, to improve competitive intelligence “teaching new marketing techniques, international business and e-commerce to exporters”, “more advertising and marketing research” and “more focus on beauty, sustainability and quality to compete with internet rivals” are presented.

Finally, we would have to say the most important problems of Iran's hand-made industry come from poor marketing and traditional view of managers. Teaching new marketing techniques to marketers, recognizing global customers' desires leads to take away traditional view and so achieving more ability to compete with some competitors like China and India will make to replace to the top exporters table.

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