



## Identifying and prioritizing the driving affecting factors on organization's situation in market (Case study: an Iranian Company)

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### ABSTRACT

The purpose of writing this paper is to identify, measure and prioritize the driving affecting factors on Abyek Company (Iranian cement producer) situation in markets. For conceptual framework, 3 main criteria and 13 sub criteria were considered. First of all, by applying Chi-square test, the factors were surveyed in which all 3 ones were affective on compatibility. Also the results of utilizing Average test show that all 3 criteria were placed in favorable place. And finally by using fuzzy TOPSIS technique, the indices were ranked in which "customer relationship management", "innovation in product" and "competitors related intelligence" were selected as the most important sub criteria.

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### 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).

Both the market orientation and compatibility have 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 organization's compatibility in Abyek Company (Iranian cement producer) 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 (Ambashta and Momaya, 2004).

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#### Market-based view

The long-standing focus of the industrial organization literature is the role of favorable industry environments for above-normal profitability of organizations. Taking their cue from the industrial organization literature, early widely cited works in the area of strategic management have also invoked industry characteristics to explain differences in the profitability of organizations (Porter, 1979). This perspective emphasizes outside the organization on the markets in which it competes, and therefore constitutes what is referred to in this research as the market-based view (MBV) (Makhija, 2003).

According to the MBV, the sources of value for the organization are embedded in the competitive situation characterizing its external product markets. In this view, a organization's sources of market power explain its relative performance. Although many aspects of market power are discussed in the literature (Gilbert, 1989), three sources of market power are frequently highlighted: monopoly, barriers to entry, and bargaining power (Grant, 1991).

When an organization has a market environment characterized by the presence of monopoly or a strong market position, its expected performance will be higher. By the same token, an industry that has high barriers to entry for new rivals also implies greater long-run performance since the firm faces less competition (Makhija, 2003).

Some researchers believe that organizations are cognitive enterprises (Deshpande and Webster, 1989). Therefore, organizations engage in a process whereby people knowledge is being transferred to the organization so that it is in turn used by other people (Sinkula, 1994). Also a synergistic influence of organizational values, market information- processing behaviors, and organizational action has been proposed (Sinkula et al, 1997). While organizational values comprise commitment to learning, open-mindedness, and shared vision, market information processing behaviors incorporate assertion of market orientation, namely market information generation and dissemination (Liu et al, 2003).

#### Conceptual framework and hypotheses

Considering research literature, the conceptual model below can be chose for the aim of the current study. This model which is a part of Mahregen et al research, measures the effect of market-based view on firms' compatibility. Within this model, market-based view which consists of market intensity, customer capital and competitive intelligence are independent variables and compatibility will be considered as dependent variable.

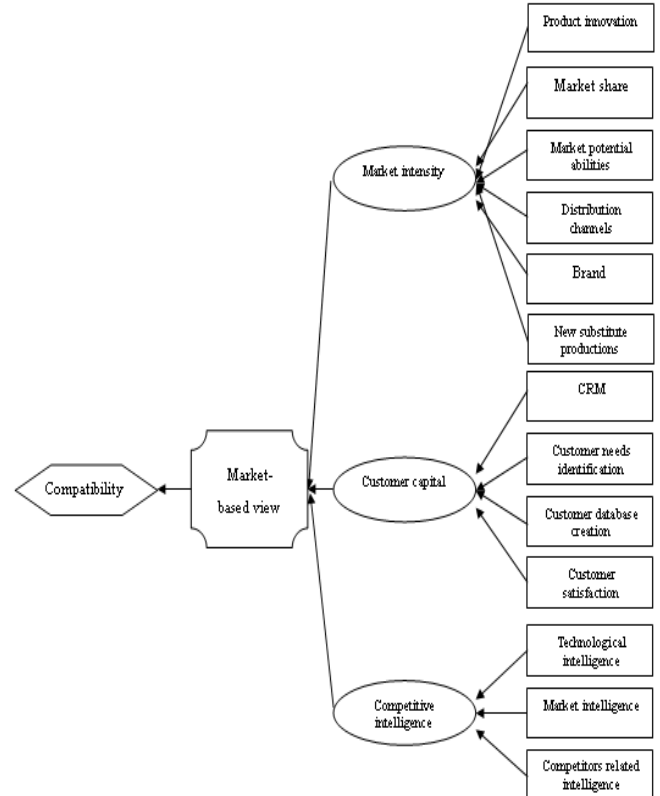


Figure 1. Conceptual framework of the research (Mehregan et al, 2008)

H<sub>1</sub>: There is positive and meaningful correlation between market intensity and Abyek Company compatibility.

H<sub>2</sub>: There is positive and meaningful correlation between customer capital and Abyek Company compatibility.

H<sub>3</sub>: There is positive and meaningful correlation between competitive intelligence and Abyek Company compatibility.

#### Research methodology

The study is in a society involving 989 people who work Abyek Company whereas this number seems to be inadequate, so the sampling strategy is utilized (Azar and Momeni, 2001):

$$n = \frac{NZ^2 \frac{1-\alpha}{2} pq}{(N-1)\epsilon^2 + Z^2 \frac{1-\alpha}{2} pq} \Rightarrow \frac{989 \times (1.96)^2 \times (0.5)^2}{988 \times (0.05)^2 + (1.96)^2 (0.5)^2} \cong 277$$

So the sample is 277 employees.

For gathering data, library method and questionnaire were used. 2 questionnaires include 13 questions about Abyek organization situation were designed. The first one was included 13 close questions and 1 open one to gather participant opinions by 5 point likert scale for statistical part.

The other one was designed with the same 13 close questions with 7 point likert scale to rank model indices by fuzzy TOPSIS technique.

For identifying the driving affecting factors on Abyek Company market situation  $\chi^2$  test, to measure the variables levels, Average test and to rank the indices fuzzy TOPSIS technique were applied.

The using softwares in the current research are SPSS 19 and Excell.

For assessing questionnaires validity experts' opinions were asked and to confirm its reliability Cronbach's alpha method has been used. The reliability results calculated 0.85 and 0.81 for both questionnaires respectively which were above the reasonable threshold (0.7). So the reliability was proved too.

#### Decision making process by fuzzy TOPSIS technique

Decision making process steps by fuzzy TOPSIS technique are shown below (Hwang & Yoon, 1981):

Step 1: calculating weights vector  $w \sim j$

Step 2: normalizing the calculated matrix

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

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

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

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

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

Step 3: so normalized weighted matrix is calculated by formula 4:

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

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

Step 4: determining the fuzzy positive ideal solution (FPIS)

and fuzzy negative ideal solution  $\tilde{v}_j^-$  (FNIS) (formulas 5, 6):

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

$$\tilde{v}_j^* = \begin{cases} \max_{i=1, \dots, m} \tilde{v}_{ij}; & j \in B \\ \min_{i=1, \dots, m} \tilde{v}_{ij}; & j \in C \end{cases} \quad (4)$$

$$FNIS = \{\tilde{v}_j^- \mid j = 1, \dots, n\} \quad (5)$$

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

Step 5: calculating the alternatives from positive and negative ideal by applying formulas 8,9:

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

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

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

$$CC_i = \frac{d_i^-}{d_i^- + d_i^+} \quad (9)$$

In real-world 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 prioritize the driving factors affecting on Abyek Company compatibility. Linguistic variables for the important weight of each criterion are shown in table 1:

#### Data analyzing

##### Chi-Square test

To identify the driving affecting factors on organization's situation in global markets, Chi square test was applied. The results are shown in table below:

Table 2 shows that there are positive and meaningful relationship between "market intensity", "customer capital" and "competitive intelligence" with compatibility.

##### Average test

This test was used for surveying the variables levels. The results are shown in table 7:

As table 3 shows, all variables are more than Z-value (1.645) which means Abyek Company is placed in favorite levels of customer capital, market intensity and competitive intelligence.

##### Fuzzy TOPSIS technique

For prioritizing the driving affecting factors on organization's compatibility, fuzzy TOPSIS technique was utilized. Decision making matrix and fuzzy weights are presented in table 4:

Also table 5 shows the normalized fuzzy weighted matrix. The matrix is calculated by formula 4.

It should be mentioned that because of high volume of calculation, presenting normalized fuzzy matrix was ignored.

Finally fuzzy positive ideal solution (by using formulas 5 and 7), fuzzy negative ideal solution (by using formulas 6 and 8) and relative closeness to the ideal solution (by using formula 9) are shown in table 6:

Table 6 illustrates "customer relationship management" was selected as the most important sub criteria and "innovation in product" and "competitors related intelligence" were posed in second and third places.

##### Conclusion and suggestion

Current paper was accomplished in a society includes 277 employees of Abyek company. The research model contained 3 main criteria (customer capital, market intensity and competitive intelligence) and 13 sub criteria.

##### Chi-square test

For identifying the driving affecting factors on organization's compatibility, Chi-square test was applied in which all 3 main criteria were related positively and meaningfully with compatibility.

##### Average test

To measure the variables levels, Average test was utilized in which all variables include market intensity, customer capital and competitive intelligence were placed in favorable place.

##### Fuzzy TOPSIS technique

Also the results of utilizing fuzzy TOPSIS technique show that among all sub criteria, "customer relationship management", "innovation in product" and "competitors related intelligence".

Also "market intensity" (3.27647), "customer capital" (2.37494) and "competitive intelligence" (1.72144) have been selected as the most important criteria accordingly.

**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. the results of using Chi-square test**

Variables	Standard error	Sig	Result
Market intensity	0.05	0.000	Positive relationship
Customer capital	0.05	0.000	Positive relationship
Competitive intelligence	0.05	0.000	Positive relationship

**Table 3**

Variables	Z <sub>0.05</sub>	Z value	Result
Customer capital	1.645	2.025	Favorable level
Market intensity	1.645	2.443	Favorable level
Competitive intelligence	1.645	1.796	Favorable level

**Table 4. Decision making matrix and fuzzy weights**

	8	9	10	10	7	8	8	9	7	8	8	9
	Customer capital				Market intensity				Competitive intelligence			
P1	8	9	10	10	8	9	10	10	7	8	8	9
P2	5	6	7	8	4	5	5	6	2	3	4	5
P3	8	9	10	10	2	3	4	5	7	8	8	9
P4	5	6	7	8	7	8	8	9	7	8	8	9
P5	4	5	5	6	4	5	5	6	5	6	7	8
P6	7	8	8	9	8	9	10	10	7	8	8	9
P7	7	8	8	9	4	5	5	6	2	3	4	5
P8	4	5	5	6	4	5	5	6	7	8	8	9
P9	5	6	7	8	8	9	10	10	4	5	5	6
P10	4	5	5	6	5	6	7	8	7	8	8	9
P11	5	6	7	8	5	6	7	8	7	8	8	9
P12	5	6	7	8	4	5	5	6	4	5	5	6
P13	8	9	10	10	5	6	7	8	7	8	8	9

**Table 5. Normalized fuzzy weighted matrix**

	Customer capital				Market intensity				Competitive intelligence			
P1	0.64	0.81	1	1	0.56	0.72	0.8	0.9	0.49	0.64	0.64	0.81
P2	0.4	0.54	0.7	0.8	0.28	0.4	0.4	0.54	0.14	0.24	0.32	0.45
P3	0.64	0.81	1	1	0.14	0.24	0.32	0.45	0.49	0.64	0.64	0.81
P4	0.4	0.54	0.7	0.8	0.49	0.64	0.64	0.81	0.49	0.64	0.64	0.81
P5	0.32	0.45	0.5	0.6	0.28	0.4	0.4	0.54	0.35	0.48	0.56	0.72
P6	0.56	0.72	0.8	0.9	0.56	0.72	0.8	0.9	0.49	0.64	0.64	0.81
P7	0.56	0.72	0.8	0.9	0.28	0.4	0.4	0.54	0.14	0.24	0.32	0.45
P8	0.32	0.45	0.5	0.6	0.28	0.4	0.4	0.54	0.49	0.64	0.64	0.81
P9	0.4	0.54	0.7	0.8	0.56	0.72	0.8	0.9	0.28	0.4	0.4	0.54
P10	0.32	0.45	0.5	0.6	0.35	0.48	0.56	0.72	0.49	0.64	0.64	0.81
P11	0.4	0.54	0.7	0.8	0.35	0.48	0.56	0.72	0.49	0.64	0.64	0.81
P12	0.4	0.54	0.7	0.8	0.28	0.4	0.4	0.54	0.28	0.4	0.4	0.54
P13	0.64	0.81	1	1	0.35	0.48	0.56	0.72	0.49	0.64	0.64	0.81
P14	0.64	0.81	1	1	0.56	0.72	0.8	0.9	0.49	0.64	0.64	0.81
P15	0.4	0.54	0.7	0.8	0.28	0.4	0.4	0.54	0.14	0.24	0.32	0.45
P16	0.64	0.81	1	1	0.14	0.24	0.32	0.45	0.49	0.64	0.64	0.81

**Table 6. Fuzzy positive ideal solution, fuzzy negative ideal solution and relative closeness to the ideal solution**

Dimension	$D_i^+$	$D_i^-$	$Cc_i$	Final rank
CRM	0.859882361	2.285637926	0.726632709	1
Customer needs identification	1.742361746	1.353210779	0.437143943	13
Customer database creation	1.297631327	1.839394611	0.586349825	6
Customer satisfaction	1.164059467	1.938541194	0.6248117	4
Distribution channels	1.635190368	1.437848779	0.467891462	12
Product innovation	0.940076256	2.165495407	0.697293652	2
Market potential abilities	1.607279133	1.479716886	0.479338774	10
Relationship with suppliers	1.516669568	1.548449617	0.505184146	9
Market share	1.30461278	1.799454094	0.579708546	7
New substitutive productions	1.405736456	1.677383984	0.544053992	8
Technologic intelligence	1.282580267	1.827940356	0.587663796	5
Market intelligence	1.62296729	1.459470783	0.473479353	11
Competitors related intelligence	1.06730376	2.074588982	0.66029911	3

### Suggestions in base of findings

As customer relationship management is the most important criteria, so the managers are advised that by “identifying customers” needs, wants and desires”, “produce in base of their wants” and “no delay in delivering productions” achieve more market share and gain more competitive advantage.

“Innovation in products” was placed in second place. So we are able to claim that new package designing, producing new or substitute productions and/ or promoting productions with more quality may lead to more export and compatibility.

And finally “competitors’ related intelligence” was the third most important sub criterion, so long-term and strategic planning in base of rivals’ decisions is a new approach to gain competitive advantage. Also the other suggestion to improve the item and so enhance compatibility is differentiation and focus strategies to produce better productions with more quality.

### Further suggestions

The mentioned organization like other Iranian ones are still apply traditional management view and it makes the organizations not to use innovation and creativity in production process. So utilizing new marketing techniques like international business, e-commerce and internet marketing help the organizations to access more market share and gain more compatibility.

Also extend marketing researches in goal countries and paying more attention to customers’ needs is other suggestions for Abyek Company to achieve more competitive advantage.

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