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Critical Factors of Competitive Intelligence in the Power Plant Industry: The Case Study of MAPNA Group

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ABSTRACT: This paper aims to discuss the critical factors of competitive intelligence that influences the Iran's power plant industry (MAPNA Group). Design/methodology/ approach: The paper has identified critical factors of competitive intelligence through Iran's power plant industry based on a comprehensive review of recent literature. For this purpose, a questionnaire was designed, applied and analyzed by the use of statistical methods. The results discuss various perspectives from a competitive intelligence point of view, and provide critical factors and a regression model for showing essential issues on the subject. Findings: The statistical analysis determines seven factors as critical issues in this case study. These factors are "Proportion of company's structure and goal", "Company's competitive conditions", "International Policies about foreign trade", and "Economics and Politics condition of country". Research limitation/ implications: The extracted factors can act as a guideline to design a strategic plan. This helps to ensure that the essential issues are covered during design and implementation of the plan. For academics, it provides a common language to discuss the factors crucial for competitive intelligence in this industry. Originality/ Value: The paper may represent high value to researchers in the competitive intelligence and strategic management fields. This study further provides an integrated perspective of critical issues for competitive intelligence in the power plant industry. It gives valuable information and guidelines that can help leaders consider the important issues during strategic planning.

KEYWORDS: Competitive intelligence, Factor analysis, Strategic management, power plant industry, Iran

1. INTRODUCTION

Today's firms operate within a rapidly changing business climate created by advances in technologies (Aaby and Discenza, 1995; Raymond, 2003), economic and social changes (Wheelen and Hunger, 1998), and fast-shortening product life cycles, which lead to "hyper-competition" (Chakravarthy, 1997). Such complex and unstable environment necessitates a need for timely, first-rate business information and knowledge (Hannula and Pirttimaki, 2003). Thus, companies must devote a greater proportion of their resources to knowledge and innovation (Raymond, 2003; Guimaraes, 2000).

Hannula and Pirttimaki (2003) argue that a competitive edge is gained through the ability to anticipate information, turn it into knowledge, craft it into intelligence relevant to the business environment, and actually use the knowledge gained from it. In planning their strategies, companies need to analyze carefully the business environment, especially the pressures and challenges caused by it, in order to thrive in the global digital economy (Hannula and Pirttimaki, 2003). Thus, enterprises should view the strategic plan as a reaction to external stimuli rather than a long-term, unchangeable course of action (Persidis, 2003). Groom and David (2001) point out that corporate planning in the 1960s and 1970s consisted simply of new product development to meet the growing affluence of consumers, especially in the USA. Nowadays, the world economy is experiencing a downturn as global growth has slowed, intensifying competition, and changing customer needs. Also, the macro-economy continuously challenges businesses, requiring them to evaluate and change their strategic goals (Groom and David, 2001) and strategic plans (Persidis, 2003) constantly, in order to gain efficiency and a competitive advantage. Persidis (2003) points out that, a few years ago, business managers talked in terms of 5-8 year strategic plans, whereas today they talk more of 2-3 year plans, and many firms are discovering that the only way to grow is by taking market share from the competition and introduce new products (Groom and David).

CI is generally a new research area at the international level, the vast majority of the research being concentrated in US firms (Wright et al., 2002). The focus of this paper reflects the fact that Iran has undergone significant

competitive economic changes over the last few years and plays a key role in the economy of the Middle East. Its market is attractive and open, although regulations and government operations may seem bureaucratic and complex. Yet, there is a scarcity of research on CI in Iran. The findings of this study could be of value to both marketing practitioners and academics, because of the challenges faced in operating in a speedily changing globalized business environment.

Its aim is to explore how familiar Iranian companies work with CI and to what extent they make use of it. Specific objectives are to:

- investigate the key factors of CI;
- identify the key factors in Iranian companies
- establish a model from key factors

The remainder of this paper is organized as follows: in next section a brief overview of the literature on competitive intelligence is presented; then we focus on the methodology followed and the empirical analysis of the data; finally, in the last section, conclusions are reached and recommendations made.

2. LITERATURE REVIEW

Competitive intelligence (CI) is a business tool that can make a significant contribution to the strategic management process in modern business organizations, driving business performance and change by increasing knowledge, internal relationships and the quality of strategic plans (Bernhardt, 1993). CI is formally defined by the Society of Competitive Intelligence Professionals as "a systematic and ethical program for gathering, analyzing and managing external information that can affect your company's plans, decisions and operations" (www.scip.org). According to Myburgh (2004), the objectives of CI are to manage and reduce risk, make knowledge profitable, avoid information overload, ensure privacy and security of information, and use corporate information strategically. In essence, CI helps strategists to understand the forces that influence the business environment and, more importantly, to develop appropriate plans to compete successfully (McGonagle and Vella, 2002). Because of this critical impact on business decisions and on shaping company strategy, CI should be an important responsibility

of top management (Wee Tan Tsu, 2001). Further, Guimaraes (2000) argues that a company can improve its competitive edge and its overall performance by applying an effective CI program, and thereby satisfy two vital goals for its survival.

The literature of CI is limited (Wright et al., 2002). It appeared as a “marketing child” in the 1960s (Walle, 1999) and has developed slowly, but regularly since the mid-1970s due to expansion of companies into foreign countries, globalization of markets, and the varying needs of consumers (Prescott, 1995). Indeed, all of these have influenced the life and actions of companies and have led management to a continuous search for new theories and techniques to help them face the competition (Fuld, 1995). Executives in small and medium sized enterprises normally focus mainly on strategic initiatives that will yield direct profits (Wright et al., 1999). They are cautious about actions that could damage the company economically, and thus prefer to invest in a plan that will deliver profit in the short-term rather than one that obliges them to wait for results in the medium or long run. This attitude militates against adoption of CI for, even though it can yield direct profits, the medium or long-term outcomes are what render it priceless (Wright et al., 1999; Prescott, 1995; White, 1998).

CI is both a product and a process. The product is information on the competitors in the market, which is used as the basis for specific action. The process is the systematic acquisition, analysis and evaluation of information for competitive advantage over known and potential competitors (Myburgh, 2004). Information assists decision makers to understand their competitors and to make sound strategic decisions (Wee Tan Tsu, 2001; Hewitt-Dundas et al., 1997; Simkin and Cheng, 1997).

It is a common mistake to confuse CI with market research, but the gathering and analysis of information takes a quite different form (Wright et al., 1999; Prescott, 1995; White, 1998; Attaway, 1998; Walle, 1999; Vedder and Guynes, 2000/2001). Threats in the market do not emanate only from the large competitors, and planners should, therefore, find ways to monitor the whole market, in order to stay ahead of competition. Guimaraes (2000) provides a summary of the benefits of CI practice in strategic planning: bringing to light business opportunities and problems that will enable proactive strategies;

providing the basis for continuous improvement; shedding light on competitor strategies; improving speed to market and thereby supporting rapid globalization; improving the likelihood of company survival; increasing business volume; providing better customer assessment; and improving understanding of external influences.

Although it seems obvious that CI is becoming more and more vital to a firm’s survival in today’s dynamic markets (McGonagle and Vella, 2004), a large number of companies still have no formal CI department. This is typically the result of cost cutting and competition from abroad (Attaway, 1998), but another reason might be the lack of formal education in CI (Fleisher, 2004). However, there is evidence in the USA that more companies are beginning to recognize CI as a critical component of the best strategic and tactical decisions (Heath, 1996), and thus have organized formal CI units. Typically, these are the major players: Shermach (1995) names GE, Xerox, Motorola, Microsoft, H-P, IBM, AT&T as cases in point. Persidis (2003) suggests that a larger number of smaller companies are also recognizing CI as an important part of their operations, and do practice it, possibly without realizing they are doing so. Previous studies have verified these trends. In 1998, research by the Futures Group in 103 large, small and medium enterprises in the USA found that exactly three quarters had a formal CI department. Interestingly, exactly half said they did not believe that their competitors watched them (Groom and David, 2001; Dishman and Calof, 2008).

The concept of intelligence as a process has long been proposed as an effort to improve the firm’s competitiveness and its strategic planning process (Guyton, 1962; Montgomery and Urban, 1970; Pearce, 1971, 1976; Montgomery and Weinberg, 1979; Porter, 1980). Already in 1966 William Fair proposed the creation of a corporate “Central Intelligence Agency” within the firm whose function it would be to “collect, screen, collate, organize, record, retrieve and disseminate information” (Fair, 1966, p. 489). Since that time, this proposition has grown to become an emerging business function with delineated job functions directly responsible for intelligence collection, analysis, and dissemination (Kahaner, 1996). Competitive intelligence’s goal is to provide “actionable intelligence” (Fahey, 1999; Fuld, 1995, 2000; Nolan, 1999), namely, information that has been synthesized, analyzed, evaluated and

contextualized. Competitive intelligence presents part of the strategic information management process that is aligned with an organization's strategy (Bergeron, 1996; Kennedy, 1996; Moon, 2000).

3. RESEARCH METHODOLOGY

Based on literature review, the points discussed above, the authors' recent researches on CI and applying some statistical methods, the research

structure of this study has been developed in five main stages as shown in Figure 1. In this way, at the first stage, a questionnaire was designed with some questions that evaluate CI effects on the company. The content of second section is based on critical dimensions of competitive intelligence listed in Table 1 which are the important factors; and finally the third section of the questionnaire including questions about the characteristics of the interviewees.

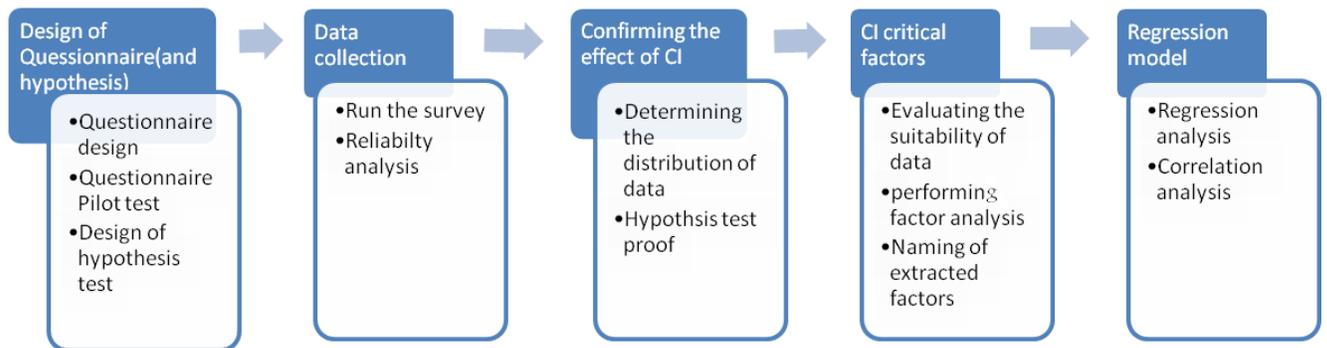


Figure 1: Research methodology

It is important to say that a hypothesis test must be designed to evaluate positive CI effects on organizational success and considering this hypothesis proof at second stage, the research can be continued.

At the second stage, the survey is run to collect data from interviewees and based on the collected data; a reliability analysis can be performed. Reliability analysis allows you to study the properties of questionnaire and the items that make them up. The reliability analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the measurement scale (Hair et al., 1998).

The main purpose of third stage is to confirm the mentioned hypothesis in stage one. In this way, it is necessary to determine the statistical distribution of collected data at the first part of the questionnaire. Subsequently, based on distribution of data, one of parametric or non-parametric tests can be performed for hypothesis proof. The fourth stage of research framework is based on "factor analysis" and is concentrated on extraction and identification of the critical factors affecting the CI in the Iranian Companies.

Factor analysis is also known as a generic name given to a class of multivariate statistical methods whose primary purpose is to define the underlying structure in a data matrix. Broadly speaking, it addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables (e.g. test scores, test items, questionnaire responses) by defining a set of common under-lying category, known as factors. With factor analysis, the researcher can first identify the separate factors of the structure and then determine the extent to which each variable is explained by each factor. Once these factors and the explanation of each variable are determined, the two primary uses for factor analysis—summarization and data reduction—can be achieved. In summarizing the data, factor analysis derives underlying factors that, when interpreted and understood, describe the data in a much smaller number of concepts than the original individual variables. Data reduction can be achieved by calculating scores for each underlying factors and substituting them for the original variables (Hair et al., 1998). Evaluating the suitability of collected data, performing factor analysis and naming the extracted factors are different steps of this stage. Finally, the most important factors and their effect become clear

through multiple regression analysis at stage five. The linear regression model assumes that there is a linear or straight line relationship between the dependent variable and each predictor. Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable (Hair et al., 1998).

4. DISCUSSION

4.1. Data collection

The research targets were members of MAPNA Group including managers, senior experts and

effective staff in decision making. MAPNA Group has already posted seminars on competitive intelligence and organizational success. Therefore, most of the members are aware of the importance of CI.

In order to understand the viewpoints on CI from all sectors of the MAPNA central office and different factories, questionnaires were sent to different departments including information, research and development, academic and human resource departments. The number of questionnaires sent out was 600; the number returned was 390, which showed a return rate of 65 percent.

Number	Dimension	Related Research
V1	Market	Weiss, 2001
V2	Rate of Interest	Albrecht, 1993
V3	Economics Terms	Antia and Hesford, 2007
V4	Appraisal	Fleisher and Bensoussan, 2002
V5	Supported Industries	Denise Lemos, 1998
V6	Exploitation	Combs and Moorhead, 1993
V7	Quality	Combs and Moorhead, 1993
V8	Process	Beal, 2000
V9	International Politics	Keegan, 1999
V10	Governmental Politics	Blenkhorn and Fleisher, 2007
V11	Religious Politics	Blenkhorn and Fleisher, 2007
V12	Local-Political Powers	Fehring, Hohhof, and Johnson, 2006
V13	Culture	Bartlett, 2002; Keegan, 1999
V14	Esteem	Boucher, 1996
V15	Behavior	Boucher, 1996
V16	Talent	Rousseau, 1994
V17	Skill	Flamholtz, 1999
V18	Competition Area	Porter, 1995
V19	Services and Products	Porter, 1980
V20	New Competitors	Porter, 1980
V21	Distributors	Fehring, Hohhof, and Johnson, 2006
V22	Geophysics	Muller, 2004; kartler and Armstrang, 1993
V23	Competitive Price	Fleisher and Bensoussan, 2002
V24	Tax Rules	Murphy, 2005; West, 2001
V25	Foreign Trade Rules	Kok, 2005
V26	Absorption Rules for Abroad Capitals	Wee Tan Tsu, 2001
V27	Labor Union	Wright and Ashill, 1998
V28	Employment Rules	McGonagle and Vella, 2004
V29	Protest Groups	Nolan, 1999
V30	Monopolist Rules	Wheelen, 1998
V31	Local Rules	Myburgh, 2004
V32	Tariffs	Muller, 2004

Table 1: Critical Dimension of Competitive Intelligence

4.2. Reliability analysis

With reliability analysis, you can get an overall index of the repeatability or internal consistency of the measurement scale as a whole, and you can identify problem items that should be excluded from the scale. The Cronbach's α is a model of internal consistency, based on the average inter-item correlation. The Cronbach's α (Likert, 1974) calculated from the 32 variables of this research was 0.894 (89 percent), which showed high reliability for the designed measurement scale.

4.3. Demographic profiles of interviewees

The demographic profile of employees who participate in the survey has been summarized in Table 2. The results showed that 54.36 percent of the interviewees are from central office and the others are from factories. The subjects of this study were members of the MAPNA Group, who are specialized in Power plant projects design and development. All of the members had Bachelor of Science (BS) or higher education, as shown in Table 2. For the job title point of view, 73 percent of the participants were experts, 18 percent were supervisors and the others were managers at different levels. Table 2 also shows the seniority of the participants.

Area	Description	Number of interviewees	Percent	Cumulative
Location	Central office	212	54.36	54.36
	Factories	178	45.64	100
	Sum	390	100	
Educational Degree	Bachelor of Science(BS)	87	22.31	22.31
	Master of Science(MS)	270	69.23	91.54
	PHD	33	8.46	100
	SUM	390		
Job Position	Expert	285	73.08	73.08
	Supervisor	72	18.46	91.54
	Managers and senior managers	33	8.46	100
	Sum	390		

Table 2: Demographic profile of the interviewees

4.4. Identification of critical factors

The main technique of this stage is based on “Factor analysis”. Factor analysis is a technique particularly suitable for analyzing the patterns of complex, multidimensional relationships encountered by researchers. It defines and explains in broad, conceptual terms the fundamental aspects of factor analytic techniques. Factor analysis can be utilized to examine the underlying patterns or relationships for a large number of variables and to determine whether the information can be condensed or summarized in a smaller set of factors or components. To further clarify the methodological concepts, basic guidelines for presenting and interpreting the results of these techniques are also included. Factor analysis provides direct insight into the interrelationships among variables or respondents and empirical support for addressing conceptual issues relating to the underlying structure of the data. It also plays an important complementary role with other multivariate techniques through both data summarization and data reduction (Hair et al., 1998).

An important tool in interpreting factors is factor rotation. The term rotation means exactly what it

implies. Specifically, the reference axes of the factors are turned about the origin until some other position has been reached. The un-rotated factor solutions extract factors in the order of their importance. The first factor tends to be a general factor with almost every variable loading significantly, and it accounts for the largest amount of variance. The second and subsequent factors are then based on the residual amount of variance. Each accounts for successively smaller portions of variance. The ultimate effect of rotating the factor matrix is to redistribute the variance from earlier factors to later ones to achieve a simpler, theoretically more meaningful factor pattern. The simplest case of rotation is an orthogonal rotation, in which the axes are maintained at 90° (Hair et al., 1998).

In order to determine whether the partial correlation of the variables is small, the authors used the Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1958) and Bartlett’s χ^2 test of sphericity (Bartlett, 1950) before starting the factor analysis. The result was a KMO of 0.692 and less than 0.05 for Bartlett test, which showed good correlation as depicted in Table 3.

Kaiser-Meyer-Olkin measure of sampling adequacy	0.692
Bartlett’s Test of sphericity Approx. χ^2	3267.941
Df	276
Sig.	0.00

Table 3: KMO and Bartlett test results

The factor analysis method is the “principle component analysis” in this research, developed by Hotteling (1935). The condition for selecting factors is based on the principle proposed by Kaiser (1958): Eigen value larger than one, and an absolute value of factor loading greater than 0.5.

The 32 variables were grouped into ten factors. The results can be seen in Table 4. Ten factors have an Eigen value greater than one and the interpretation variable is 91.943 percent. The factors are rotated according to Varimax.

Factor	Initial Eigen value	Total	Rotated sums of squared loadings	
			Percentage of variance	Cumulative percentage
1	11.866	5.655	23.563	23.563
2	2.393	3.324	13.851	37.414
3	2.000	2.997	12.488	49.902
4	1.727	2.134	8.892	58.794
5	1.367	1.621	6.756	65.550
6	1.324	1.417	5.902	71.452
7	1.273	1.271	5.295	76.747
8	1.207	1.206	5.164	81.911
9	1.139	1.169	5.083	86.994
10	1.041	1.108	4.949	91.943

Table 4: Factor analysis results

Factor loading of each variable on the resulted seven factors is depicted in Table 5. Each variable should have significant factor loading (greater than 0.5) only on one factor. Therefore, Factors 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 had 5, 5, 2, 1, 4, 3, 3, 2, 1 and 1 variable. In this way, V4, V5, V6, V7, V8 are significant for Factor 1; V18, V19, V20, V21, V23 are significant for Factor 2; V22, V29 are significant for Factor 3; V30 is significant for factor 4; V11, V24, V25, V26, are significant for Factor 5; V15, V16, V17, V28 are significant for Factor 6; V3, V9, V10 are significant for Factor 7; V13, V14 are significant for Factor 8 ;V31 is significant for Factor 9 and V12 is significant for Factor 10. Because of factor loading less than 0.5, the variables V1, V2, V27 and V32 can be omitted. The variable V12, V30, V31 because of grouping just in 1 factor, can be eliminated as

well. The content of each factor can be seen in Table 5. So the interpretation variable is 76.747 percent.

4.5. Factors naming

The authors attempted to name the factors compendiously without losing contents of factors. In this way, the names and content of the seven factors are shown in Table 6. “Proportion of company’s structure and goal”, “Company’s competitive conditions”, “Environmental conservation union”, “International Policies about foreign trade”, “Human Resource”, “Economics and Politics condition of country” and finally “Social milieu” are the names which have been allocated to the extracted factors.

Questions	Factors									
	1	2	3	4	5	6	7	8	9	10
V1	0.055	-0.064	-0.057	0.039	0.257	0.108	0.089	-0.056	-0.040	0.089
V2	0.045	0.126	-0.064	0.045	0.173	-0.059	0.171	0.395	-0.023	0.308
V3	0.186	0.133	0.058	0.011	-0.043	-0.068	0.685	0.072	0.080	0.420
V4	0.635	0.151	0.059	0.045	0.321	0.163	0.001	0.029	0.178	0.222
V5	0.788	-0.036	0.007	0.140	0.085	0.065	0.083	0.130	0.060	0.071
V6	0.738	0.196	0.013	0.125	0.115	0.272	0.097	0.232	0.066	0.020
V7	0.635	0.237	-0.040	0.115	-0.023	0.268	0.451	0.055	-0.066	-0.077
V8	0.600	-0.038	-0.007	0.076	0.160	-0.052	0.473	0.143	-0.026	0.367
V9	0.157	0.119	-0.057	0.374	0.091	0.017	0.598	0.020	0.452	0.127
V10	0.166	0.021	0.038	-0.074	-0.204	-0.097	0.756	0.202	-0.031	-0.098
V11	0.052	-0.056	0.004	0.004	0.686	0.019	0.192	-0.083	0.128	-0.358
V12	0.059	0.049	0.118	0.073	0.154	0.178	0.182	-0.029	0.112	0.757
V13	0.088	0.143	0.179	0.157	0.240	0.301	0.018	0.666	0.220	-0.061
V14	0.294	0.057	0.245	-0.053	0.193	0.088	0.119	0.715	0.235	0.174
V15	-0.090	0.016	0.094	0.205	0.039	0.759	0.105	0.039	0.182	0.139
V16	0.203	-0.004	0.120	0.055	0.020	0.545	0.170	0.130	0.212	0.197
V17	0.178	0.253	0.209	0.324	0.114	0.697	0.038	0.009	0.130	0.120
V18	0.036	0.867	0.061	0.095	-0.090	-0.024	-0.090	0.130	0.143	0.043
V19	-0.006	0.650	0.295	0.351	-0.059	0.154	0.227	0.102	-0.002	0.296
V20	0.135	0.510	0.263	0.475	-0.017	0.162	-0.004	0.167	0.441	0.111
V21	0.253	0.563	-0.039	0.092	0.229	0.240	-0.031	0.109	0.155	0.132
V22	0.277	-0.075	0.832	0.038	0.185	-0.047	0.114	0.038	0.061	-0.047
V23	0.190	0.805	0.028	0.003	0.062	0.177	0.110	0.213	-0.044	0.109
V24	0.004	-0.055	0.160	0.214	0.823	0.172	0.062	0.110	-0.001	0.055
V25	-0.096	0.084	0.218	0.221	0.558	0.063	-0.077	0.196	0.076	0.254
V26	0.048	0.026	-0.066	0.468	0.694	-0.093	0.069	0.076	0.263	0.172
V27	0.180	0.171	0.477	0.192	0.215	0.476	-0.096	0.316	0.011	0.044
V28	0.009	0.120	0.142	0.330	0.123	0.817	-0.037	0.025	0.037	0.053
V29	0.180	0.129	0.843	0.172	0.009	-0.108	0.089	0.119	0.002	-0.044
V30	0.027	-0.016	-0.053	0.913	0.071	0.036	0.129	0.047	0.058	-0.045
V31	0.001	0.110	0.056	0.077	-0.055	-0.007	-0.059	0.223	0.766	0.162
V32	0.458	0.160	0.311	0.130	0.001	-0.070	0.475	-0.047	0.065	0.101

Note: Rotation method was Varimax with Kaiser normalization

Table 5: Rotated component matrix

4.6 Multiple regression analysis

Table 7 shows the relationship of CI to the enhancement of company competitiveness. We used the average mean of factors as a dependent variable to carry out regression analysis with the seven factors. Table 7 shows the results of the regression analysis. The P-value of the F-test was less than 0.05, which was significant, making the seven factors valid in predicting the relationship between CI and company competitiveness. As a result, the seven factors were valid critical

adoption factor benchmarks for CI in the power plant industry in Iran.

In addition, regression coefficients were used to predict the effect of independent variables of dependent variables by t-test. The results showed that factor 1 “Proportion of company’s structure and goal”, factor 2 “Company’s competitive conditions”, factor 4 “International Policies about foreign trade”, and factor 6 “Economics and Politics condition of country” had significant effects on CI; factors 1, 2, 4 and 6, therefore, had a higher significance for company competitiveness than the other factors.

Factors	Critical factor names	No.	Dimension
1	Proportion of company's structure and goal	V4	Appraisal
		V5	Supported Industries
		V6	Exploitation
		V7	Quality
2	Company's competitive conditions	V8	Process
		V18	Competition Area
		V19	Services and Products
		V20	New Competitors
3	Environmental conservation union	V21	Distributors
		V23	Competitive price
		V22	Geophysics
4	International Policies about foreign trade	V29	Protest Groups
		V11	Religious politics
		V24	Tax Rules
		V25	Foreign Trade Rules
5	Human Resource	V26	Absorption Rules for Abroad Capitals
		V15	Behavior
		V16	Talent
		V17	Skill
6	Economics and Politics condition of country	V28	Employment rules
		V3	Economic terms
		V9	International Politics
7	Social milieu	V10	Governmental Politics
		V13	Culture
		V14	Esteem

Table 6: The name and content of critical factors

	Unstandardized Coefficients β	Std. error	Standardized Coefficients β	t	Sig.	R ²	F.	Sig.
(Constant)	3.871	0.034		95.638	0.000	0.273	4.840	0.000*
F1	0.264	0.034	0.467	14.117	0.000*			
F2	0.032	0.034	0.598	11.309	0.000*			
F3	0.057	0.034	0.061	0.677	0.500			
F4	0.168	0.034	0.297	3.309	0.001*			
F5	0.024	0.034	0.077	0.852	0.379			
F6	0.077	0.034	0.228	6.737	0.000*			
F7	0.015	0.034	0.016	0.181	0.856			

Note: *Significant at the 0.01 level

Table 7: Summary of multiple regression analysis

5. Conclusion

5.1. SUMMARY

This study attempts to detect critical CI factors in the power plant industry in Iran. We use a "Likert Scale" to measure affected factors on the

power plant industry. From a comprehensive literature review 32 critical variables of competitive intelligence were distinguished and embedded in the second part of the research. The interviews selected more important dimensions

from these 32 variables by assigning ranks to them.

The study then used factor analysis to extract critical factors of competitive intelligence in the power plant industry through 32 variables. These factors were: "Market", "Rate of Interest", "Economics Terms", "Appraisal", "Supported Industries", "Exploitation", "Quality", "Process", "International Politics", "Governmental Politics", "Religious Politics", "Local-Political Powers", "Culture", "Esteem", "Behavior", "Talent", "Skill", "Competition Area", "Services and Products", "New Competitors", "Distributors", "Geophysics", "Competitive Price", "Tax Rules", "Foreign Trade Rules", "Absorption Rules for Abroad Capitals", "Labor Union", "Employment Rules", "Protest Groups", "Monopolist Rules", "Local Rules", and "Tariffs".

After factor analyzing the variables were reduced to 10 groups. Three groups only have 1 factor, so they were eliminated. The remaining groups included 25 variables, so 7 variables were reduced. After that, we used regression coefficients to predict the effect of independent variables on dependent variables. The results showed that "Proportion of company's structure and goal", "Company's competitive conditions", "International Policies about foreign trade", and "Economics and Politics condition of country" are effective in the regression model.

5.2. Recommendations

The authors believe that after this research, power plant industry management can decide in a better way how to establish a competitive intelligence system using the 7 factors defined here in their strategies.

Further research is needed. One area is influence of each factor on power plant industry's profitability. Other research directions can include studying the effects of the work environment on CI.

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