STRATEGIC THINKING MODEL

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Abstract: Given great developments in the business environment, the new conditions governing the Iranian business market and outcomes of elimination of the sanctions and the interest of international trading companies to enter the Iranian market, recognizing the strategic thinking model of the top companies in Iran seems to be necessary. In this paper, the strategic thinking model is presented so that companies, which are interested in participating in the Iranian market, can take step to operate independently or cooperate with the mentioned companies in the competitive business environment. The research method was mixed method (qualitative and quantitative). It was conducted on sample of 140 individuals of the top companies in Iran. The effect of each factor was evaluated using the collected data. Finally, special model of strategic thinking is presented using the structural equation method and Lisrel and spss software.

Keywords: Strategy, strategic management, strategy development, strategy evaluation, strategic thinking.

1. INTRODUCTION

Today's world has caused great changes and developments for organizations, as foundations of the community. In today's world and in situations in which competitive factors play important role, the existence of strategic thinking is vital in today's organizations. It is for a long time that strategic thinking has been known as the competitive advantage in various economic and social areas. Strategic thinking is an attractive concept, but attractiveness of this concept does not reduce its ambiguity and complexity. This has caused considerable confusion in the strategic management area. The strategy is a set of rules of decision making to direct the organizational behavior, which senior management has planned based on the main goals of the organization in the form of goals, services, policies and plans (Casey, Goldman, 2013).

Strategic thinking can help managers understand, predict and control future events, and affect future changes rather than being affected by changes. The growth of an organization depends not only on the manager and his thoughts and decisions, but also on issues such as paying attention to conditions, characteristics, conditions, needs,

and priorities of the organization's employees (Morris et. al., 2008). In recent years, researchers in the area of strategic thinking have tried to conceptualize strategic thinking more deeply than past and they have tried to theorize in this area to present practical models. However, no strategic thinking model has been presented at the organization level to be result of empirical research and show how strategic thinking leads to strategic action in the organization and what factors affect the development of strategic thinking at the organizational level (Dorris et. al., 2000). It can be discussed that what are the strategic decisions and actions resulting from strategic thinking at the organization level taken by members of the organization.

Changing and turbulent environmental conditions, organizational learning, learning organizations, organizational knowledge and organizational learners, cultural conditions and political behaviors, and their role in shaping the strategy, show the need for an appropriate model of organizational strategic thinking at the organization level. This model can show the important characteristics of strategic thinking, significant relationships among important concepts and factors

affecting strategic thinking of an organization. The key concepts of strategic thinking should be identified and the relationship among the important factors affecting the strategic thinking as a model should be explained and identified. It is also necessary to show that the capability of strategic thinking of the organization is the result of a set of factors forming and determining the strategy and content of the strategy.

Strategic thinking is similar to the stick holding the organization sub-systems together (2005, Tavakkoli and Lawton). The strategic thinking has been proposed to confront with bottlenecks of strategic planning in the today's business environment. Strategic thinking is an approach which is based on the principles of strategy, divergent and creative thinking to create a value-creating strategy. Strategic thinking views strategy as an art rather than process and methodological aspects. These two approaches (planning and strategic thinking) are in two ends of the scale in which 10 school of strategies are placed (Pellegrino and Carbo, 2001). What makes a strategy effective is not the methodology used (many prominent managers have not experienced any of the conventional methods used for strategy development), but it is an insight into business factors which can make a strategy strong and valuable. The insight into the market is based on a deep understanding of the rules of the game and knowing the ways of using it. Abraham argues that strategic thinking involves identification of reliable strategies or business models leading to creation of value for the customer (Abraham, 2005).

In the strategic thinking, a big and integrated image (but general and inaccurate image) is formed of the business environment. This approach requires discovering effective rules and using them to respond the customer, while strategic planning provides accurate data for implementation of strategy, focusing on the vision and details of the strategy created. Strategic thinking determines the proper orientation of organization and guides the strategic planning of the organization to the specified direction. Strategic thinking creates integrated image of the business by synthesizing of effective environmental and internal factors and provides the conditions for creating innovative responses to market needs. Oshannassy states that creativity should be implemented in the real world, and in addition to using the power of synthesis, the power of analysis should be also used, and the continuous use of strategic planning and thinking leads to achieve innovative strategies in practice. This approach can provide a framework to link the classical and the modern theories of strategy and a model for the integrated concept of strategy (Oshannassy, 2003).

The Necessity of Research

The complex and rapid global developments have caused that economy to rely on the intangible assets (knowledge) rather than tangible assets. In fact, the humanist approach has been developed and the "thought of managers and employees" has become a competitive advantage. "Some of the major barriers and challenges of strategic thinking are as follows:

1. Lack of having systemic view
2. Non-use of participatory management
3. Lack of access to proper information
4. Behavioral and internal barriers of managers
5. Lack of key managers
6. Difficulty in aligning members of the organization (organizational mistrust)
7. Lack of motivating organizational culture

It could be stated that strategic thinking is more important than strategic management and its importance has increased in recent years. The barriers and challenges presented here have been adopted from great number of studies in this area, while they are not complete (Hamel, 2001).

2. METHODOLOGY

The research method is mixed. In the first stage, the model (quantitative and qualitative) is developed using the literature of the subject and the deep interview (given the exploratory nature of the research). In the next stage, the questionnaires (using the factors identified in the first stage) are developed and completed and tested quantitatively using a survey method.

Conceptual Model and Operational Model

The conceptual model is shown in Figure 1 and accurate definition of the operational variables are discussed.

Table 1
Concepts, dimensions, components, and markers

Row	Construct or concept	Dimension	Component	Marker (operational definition of components)
1	Environmental and organizational factors	Environmental factors	Environmental factors	Changes in technology, new markets, new rivals, exchange rates, new technologies, customer preferences, human resources costs, raw material costs, new laws and demographic trends.
			Focus of attention	The importance of political, economic, and technological factors, rules and laws, culture development and organizational structure.
		Individual factors	Risk taking	– Trying to obtain more rewards against the increased likelihood of not achieving those results or even obtaining negative results from failure
			Tolerance of ambiguity	– The level of tolerance to postpone the conclusion of incomplete information available in the hope of obtaining better information in the future
		Group factors	Functional conflict	– Disagreement on solutions – Disagreement on the interpretations
			Job diversity	– Tenure (responsibility in the organization - responsibility in the group), education and training, work experience
		Organizational factors	Organizational culture	– Assumptions, symbols, language, values and ideology, ideas and beliefs, customs, myths and stories
			Organic organizational system	– Communication, formalism, influence, control – Lack of concentration, use of technocrats, environmental scanning, high resolution, open communication
			Reward and compensation system	– Payment of rewards based on long-term performance criteria and qualitative criteria – Organic payment system and mechanical payment system
			Technology and information system	Information system characteristics – Information efficiency, Information synergy IT type – Backup systems – Group decision – Electronic communications – Communication technology – Use of the Internet and Intranet
	Strategic thinking	Content factors of strategic thinking	Creativity	Creation of a product, service, thought (idea), procedure or a valuable process
			Systemic thinking	– Viewing the organization as a component of the whole and the larger system – Understanding the internal relations among the phenomena rather than linear causal relationships – Understanding the process of change in systems
			Vision	– Common and core values and beliefs – A common intention
		Process factors of strategic thinking	Strategic communication	– Strategic dialogues Strategic thinking sessions
			Strategic analysis	– Use of information – Decision-making process
			Political behaviors	– Lobbying, forming coalition, non-functional conflict, bargaining

(Contd...)

Row	Construct or concept	Dimension	Component	Marker (operational definition of components)
2	Result	Organization performance	Internal factors	Utilization of capacity, timely delivery, receiving inventory, quality of service delivery, cycle time criteria in key activities such as Jit, efficiency and effectiveness of the production cycle
			Financial	Indicators of cash flow, operating profit, return on investment, return on capital employed and return on equity, earnings per share, economic value added, growth of income, increase in productivity
			Growth and learning	Training people, using information analytical tools and the organization's ability in learning, attracting, adapting, applying mental ideas and integrating them in the organization.
			Customer	Customer satisfaction, customer retention, new customer engagement and recruitment practices, customer profitability and market share, and financial share in target sectors, examining if sales, delay in sales, customer relationship and so on.
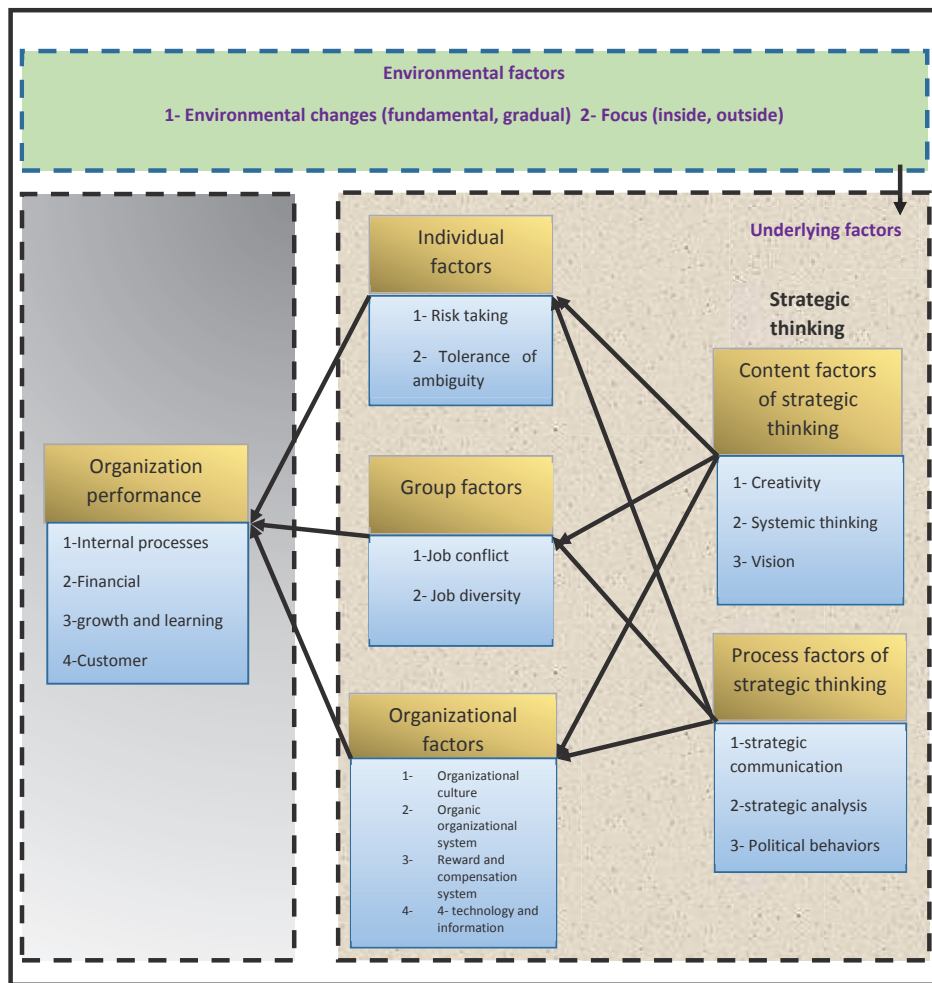
3. RESEARCH POPULATION

Statistical Community

The research population in this paper included 140 top Iranian companies.

Statistical Sample and Size of Sample

To develop model, library studies and subject literature and views of 15 experts were used. Then, the questionnaire was developed using their ideas and views and the final

questionnaires were completed and tested by the people of Iran's top companies selected by the Industrial Management Organization.

Data Analysis Methods and Hypothesis Testing

In this research, descriptive statistics and inferential statistics were used to analyze the data. Descriptive statistics and descriptive statistics indices such as central indices (mean, mode, and median) and dispersion indicators (standard deviation and variance) were used to examine the characteristics of respondents. To analyze the data and test the hypotheses of the research, statistical methods of single-sample *t*-test were used to understand the status of the research variables and confirmatory factor analysis was used to measure the measurement models.

Finally, to test the research hypotheses, the structural equation model, especially the structural equation modeling technique, were used. Statistical software of SPSS 21 and 8.54 LISREL were used for conducting the analyses.

The Necessity of Structural Equation Modeling in this Research

One of the strongest and most appropriate methods of analysis in behavioral sciences and social sciences research is multivariate analysis, since the nature of these issues is multivariate and they cannot be solved using bivariate method (in which only one independent variable and one dependent variable are considered). Multivariate analysis refers to series of analysis methods which their main characteristic is the simultaneous analysis of K independent variable and N dependent variable.

Covariance structures analysis or causal modeling or structural equation modeling is one of the most important methods for analyzing complex data structures. Thus, as there are several independent variables in the form of a main variable in the present study, which their effects on a dependent variable or several dimensions should be examined, structural equation modeling is necessary.

Data Analysis

To analyze the collected data at the descriptive level using the statistical indices, the demographic characteristics

of the subjects in the research including gender, age, education, work experience and years of service were examined. The mean and standard deviation of all variables were also obtained.

In the inferential statistics section, exploratory factor analysis was used to examine the adequacy of sampling and the appropriateness of the data structure. In order to examine the validity of the questionnaire questions (convergent validity) and testing the significance the observer variables and the latent variables as well as the fit of the measurement models, confirmatory factor analysis was used. To examine the reliability of the questions, Cronbach's alpha and construct reliability were used. Finally, to examine the relationships among the research variables, Pearson correlation test was used and to examine the causal relationships of the variables and to test the conceptual model of the research, structural equation modeling (SEM) and LISREL software were used. Finally, the status of the industry will be analyzed from the perspective of the two indicators of environmental change (fundamental-gradual) and focus of attention (outside-inside) with respect to the frequency of respondents.

Distribution of Respondents by Gender

Gender is among the nominal scales, so the frequency table can provide general information about this variable. As shown in Table 2, out of 140 people responded to the questionnaire, 80 (57%) were male and 60 (about 43%) were female.

Table 2
Distribution of respondents by gender

Gender	Frequency	Percentage of frequency
Male	80	57
Female	60	43
Total	140	100

Distribution of Respondents by Age

The age status is among the ranking scales, so the frequency table can provide us general information about this variable.

As shown in Table 3, out of 140 people responded to the questionnaire, 21 people were under 30 years of old

(about 15%), 64 people were between 30 and 35 years of old (about 46%), 29 people were between 35 and 40 years of old (about 21%), 15 people were between 40 and 45 years of old (about 1%), 6 people were between 45 and 50 years of old (about %), and 5 people were more than 50 years of old (about %).

than 5 years (14%), 48 subjects had between 5 and 10 years (34%), 43 subjects had between 10 and 15 years (31%), 15 subjects had between 15 and 20 years (about 11%), and 15 subjects had more than 20 years (about 11%) of work experience.

Table 3
Distribution of respondents by age status

Age status	Frequency	Percentage of frequency
Less than 30	21	15.0
30-35 years	64	45.7
35-40 years	29	20.7
40-45 years	15	10.7
45-50 years	6	4.3
Over 50 years	5	3.6
Total	140	100

Table 5
Distribution of respondents by work experience status

Education status	Frequency	Percentage of frequency
Less than 5 years	19	13.6
5-10 years	48	34.3
10-15 years	43	30.7
15-20 years	15	10.7
Over 20 years	15	10.7
Total	140	100

Distribution of Respondents by Education Status

The academic status is among the ranking scales, so the frequency table can provide general information about this variable. As shown in Table 4, out of 140 subjects responded to the questionnaire, 1 subject had high school (about 1%), 3 subjects had associate (2%), 45 subjects had bachelor (about 32%), 86 subjects had master (about 61%), and 5 subjects had PhD (about 4%) level of education.

Distribution of Respondents by Years of Service Status

The years of service status is among the ranking scales, so the frequency table can provide us general information about this variable. As shown in Table 6, out of 140 subjects responded to the questionnaire, 23 subjects had less than 5 years (16%), 52 subjects had between 5 and 10 years (about 37%), 38 subjects had between 10 and 15 years (27%), 14 subjects had between 15 and 20 years (about 10%) and 13 subjects had more than 20 years (about 9%) of service

Table 4
Distribution of respondents by education status

Education status	Frequency	Percentage of frequency
High school	1	0.7
Associate	3	2.1
Bachelor	45	32.1
Master	86	61.4
PhD	5	3.6
Total	140	100

Table 6
Distribution of respondents by years of service status

Years of service status	Frequency	Percentage of frequency
Less than 5 years	23	16.4
5-10 years	52	37.1
10-15 years	38	27.1
15-20 years	14	10.0
Over 20 years	13	9.3
Total	140	100

Distribution of Respondents by Work Experience Status

The work experience status is among the ranking scales, so the frequency table can provide general information about this variable. As shown in Table 5, out of 140 subjects responded to the questionnaire, 19 subjects had

Descriptive Statistics of the Research Variables

Descriptive statistics indices such as mean and standard deviation in the components and variables of the research are discussed here:

As shown in Table 7, the mean of components of creativity, vision, strategic communication, strategic

analysis, and political behaviors is less than 3 (middle of the scale) in the 5-point Likert scale; and only the mean of the systemic thinking component is higher than 3 in the 5-point Likert scale (very close to the middle, that is number 3).

The highest mean belonged to systemic thinking and the least mean belonged to political behavior. As can be seen, the highest standard deviation (distribution of responses) belonged to political behavior and at the lowest standard deviation belonged to creativity variable. More standard deviation means more distribution in responses and less standard deviation means less distribution in responses (high consensus).

As shown in Table 8, risk taking in individual factors, *in group factors* in job conflict and job diversity,

and organizational culture and reward and compensation system in organizational factors had mean less than 3 (middle of the scale) in 5-point Likert scale, while the mean of other components is more than 3 in this scale.

As shown in Table 9, among the organizational performance indicators, internal processes have the highest mean and growth and learning have the lowest mean. In general, the rank of organizational performance indicators is internal processes, customer, financial, growth, and learning, respectively.

The Reason for Using the Test

Confirmatory factor analysis is used to assess the validity and reliability of questionnaire questions. This method is one of the strongest methods for evaluating validity and

Table 7
Descriptive statistics of independent variables (components of content and process factors)

Variables	Components	Abbreviation	Mean	SD
Content factors of strategic thinking	Creativity	INN	2.8597	0.97622
	Systemic thinking	ST	3.0102	0.79933
	Vision	VIS	2.9496	0.94960
Process factors of strategic thinking g	Strategic communication	ST.CO	2.8489	0.96432
	Strategic analysis	ST.ANA	2.8549	0.92619
	Political behaviors	PO.BE	2.7644	0.74075

Table 8
Descriptive statistics of mediator variables (individual, group, and organizational factors)

Variables	Components	Abbreviation	Mean	SD
Individual factors	Risk taking	RISK	2.7560	0.83786
	Tolerance of ambiguity	AM.TO	3.0536	0.81288
Group factors	Job conflict	FUN.CO	2.9381	0.75610
	Job diversity	JOB	2.9544	0.83786
Organizational factors	Organizational culture	OR.CU	2.8929	0.77662
	Organic organizational system	ORGA	3.0969	0.72546
	Reward and compensation system	COMP	2.5464	0.84922
	Technology and information system	IT	3.6125	0.85048

Table 9
Descriptive statistics of dependent variables (Organizational Performance; BSC)

Variables	Components	Abbreviation	Mean	SD
Organization performance	Internal Processes	IN.P	3.4196	0.76353
	Financial	FIN	3.2500	0.93611
	Growth And Learning	LEA	2.8804	0.96575
	Customer	CUS	3.3673	0.75109

reliability. In the confirmatory factor analysis, the factor loads of each of the questions are analyzed separately. The results of confirmatory factor analysis of each of the research variables are presented by Lisrel software (LISREL) separately for each variable.

Test Description

In this section, the results of the confirmatory factor analysis of each of the variables by the Lisrel software are presented separately for each variable. In confirmatory factor analysis, the researcher knows what the next question is. That is, there is a conceptual model for each of the concepts or research variables in the confirmatory factor analysis. In examining each of the models, the fundamental question is whether these measurement models are appropriate or not. They are usually two approaches to examine the measurement models. The first approach examines the validity and reliability of the variables, including convergent validity and composite reliability, and the second approach examines the goodness of fit index of model.

The First Approach

In the first approach, convergent validity and construct stability will be discussed:

Convergent Validity

Convergent validity states to what extent the questions of a variable measure the considered variable. To examine the convergent validity, there is a fundamental condition:

The fundamental condition is that the obtained factor load should be more than 0.5 or more than ideal value of 0.7 (Straub, 1989). However, it should be noted that several studies have considered lower value for the factor loads (0.4) (Ryu et. al., 2003; Hair et. al., 1998. In this study, the standard load factor was considered 0.5, meaning that of the factor load of a question is less than 0.5, that question would be excluded.

Construct Reliability (CR)

Construct reliability is a criterion for determining the internal consistency of observed variables. This means that if its value is higher, all the criteria adequately reflect the single subject. This criterion also similar to Cronbach's alpha. Reliability is stated based on the square of the total factor load of a construct (Ramin Mehr, 2012).

This value should be higher than 0.7% based on valid sources to state that there is internal consistency among the data. (Lin and Lee, 2004). The CR index is calculated using the following equation.

λ_i: factor load

δ: observed variable error

$$CR = \frac{\left(\sum_{i=1}^{n} \lambda_i\right)^2}{\left(\sum_{i=1}^{n} \lambda_i\right)^2 + \left(\sum_{i=1}^{n} \delta_i\right)}$$

The Second Approach

In the second approach, the fit indices of the model, including goodness of fit index of model is examined:

Results of Factor Analysis (Exploratory and Confirmatory) of Independent Variables

In order to examine the construct validity of the scale of independent variables, exploratory factor analysis was performed using principal component method. Bartlett's Sphericity test was significant (sig = 0. 000, *df* = 435, X2 = 2459.44) and the size of the sampling adequacy indicated that the sample size was appropriate (KMO = 884.84). The above results indicate that the sample is appropriate for performing factor analysis.

The results showed that, system thinking had the highest factor load among the content factors and the strategic analysis had the highest factor load among the process factors. In summary, first order confirmatory factor analysis of the relationship of questions and components, and the second order confirmatory factor analysis show the relationship between components and independent variables.

Table 10 and 11 show the factor loadings, significance coefficients, Cronbach's alpha, and composite reliability of the research variables.

Table 10
Factor loads, significance coefficients and Cronbach's alpha of content components

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Creativity	INN1	0.79	0.900	0.905
	INN2	0.89		
Strategic thinking	ST1	0.75	0.848	0.852
	ST2	0.68		
	ST3	0.74		
	ST4	0.76		
Vision	VIS1	0.85	0.846	0.841
	VIS2	0.90		

Table 11
Factor loads, significance coefficients and Cronbach's alpha of process factors

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Strategic communication	ST.CO1	0.80	0.788	0.793
	ST.CO2	0.81		
Strategic analysis	ST.ANA1	0.85	0.887	0.888
	ST.ANA2	0.94		
	ST.ANA3	0.84		
Political behaviors	PO.BE1	0.81	0.805	0.811
	PO.BE2	0.86		
	PO.BE3	0.88		
	PO.BE4	0.78		

The estimation results (the lower part of figure) indicate the relative appropriateness of the indices. Based on the Lisrel software output, the calculated χ^2 is 178.71, which is less than 3 relative to the degree of freedom (62). The RMSEA value is also 0.079. The allowed value of RMSEA is 0.1. The GFI, AGFI and NFI indices are 0.88, 0.89, and 0.92, respectively, indicating a very good fit.

Results of Factor Analysis (Exploratory and Confirmatory) of Moderator Variables

In order to examine the construct validity of the variables, the exploratory factor analysis was carried out using principal component method. The Bartlett's Sphericity test was significant (sig = 0.000, $df = 496$, $X_2 = 2521.27$)

and the adequacy of sampling indicated that sample size was appropriate (KMO = 0.791).

Table 12, 13, and 14 show the factor loads, significance coefficients, Cronbach's alpha, and composite reliability of the research variables.

Table 12
Factor loads, significance coefficients and Cronbach's alpha for individual factors

Iindicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Risk taking	RISK1	0.81	0.808	0.811
	RISK2	0.93		
	RISK3	0.82		
Tolerance of ambiguity	AM.TO1	0.59	0.793	0.799
	AM.TO2	0.77		

Table 13
Factor loads, significance coefficients and Cronbach's alpha of group factors

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Job conflict	FUN.CO1	0.80	0.822	0.819
	FUN.CO2	0.80		
	FUN.CO3	0.74		
Job diversity	JOB1	0.76	0.814	0.820
	JOB2	0.66		
	JOB3	0.73		

Table 14
Factor loads, significance coefficients and Cronbach's alpha of organizational factors

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Organizational culture	OR.CU1	0.77	0.831	0.833
	OR.CU2	0.66		
	OR.CU3	0.90		
Organic organizational system	ORGA1	0.83	0.847	0.852
	ORGA2	0.74		
	ORGA3	0.75		
	ORGA4	0.82		

(Contd...)

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
	ORGA5	0.80		
	ORGA6	0.78		
	ORGA7	0.70		
Compensation and reward system	COMP1	0.76	0.904	0.908
	COMP2	0.82		
	COMP3	0.80		
	COMP4	0.78		
	COMP5	0.79		
	COMP6	0.76		
	COMP7	0.77		
Technology and information system	IT1	0.78	0.878	0.877
	IT2	0.69		
	IT3	0.84		
	IT4	0.78		

Table 15
Factor loads, significance coefficients and Cronbach's alpha of organizational performance variable

Indicators	Convergent validity		Reliability	
	Items	Factor load	Cronbach's alpha	CR
Internal processes index	IN.P1	0.50	0.836	0.833
	IN.P2	0.90		
	IN.P3	0.67		
	IN.P4	0.75		
Financial index	FIN1	0.78	0.869	0.873
	FIN2	0.87		
	FIN3	0.91		
Growth and learning index	LEA1	0.81	0.841	0.847
	LEA2	0.75		
Customer index	CUS1	0.62	0.856	0.857
	CUS2	0.64		
	CUS3	0.71		
	CUS4	0.84		

The estimation results (the lower part of figure) indicate the relative appropriateness of the indices. Based on the Lisrel software output, the calculated $\chi2$ is 1090.20, which is less than 3 relative to the degree of freedom (428). The RMSEA value is also 0.062. The allowed value of RMSEA is 0.1. The AGFI, GFI, and NFI indices are 0.91, 0.93, and 0.96, respectively, indicating a very good fit.

Results of Factor Analysis (Exploratory and Confirmatory) of Dependent Variables

In order to examine the construct validity of the dependent variable (organizational performance), the exploratory factor analysis was carried out using principal component method. The Bartlett's Sphericity test was significant (sig = 0.000, df = 78, X_2 = 1002.53) and the adequacy of sampling indicated that sample size was appropriate (KMO = 0.865).

Table 15 summarizes the factor load, the significance coefficients, Cronbach's alpha and the composite reliability of the organizational performance variable.

The estimation results (the lower part of figure) indicate the relative appropriateness of the indices. Based on the Lisrel software output, the calculated $\chi2$ is 130.42, which is less than 3 relative to the degree of freedom (59). The RMSEA value is also 0.061. The allowed value of RMSEA is 0.1. The AGFI, GFI, and NFI indices are 0.89, 0.91, and 0.93, respectively, indicating a very good fit.

Correlation Between Research Variables

Pearson correlation test was used in order to examine the relationship between research variables such as independent variables (content factors and process factors), moderator variables (individual, group and organizational factors) and company performance. The null hypothesis (H_0) and the opposite (H_1) in the Pearson correlation test are as follows:

H_0: There is no significant relationship between two variables.

H_1: There is significant relationship between two variables.

If significance level is less than 0.05, the relationship between the two variables is confirmed, and if there it is more than 0.05, the relationship between the two variables is rejected. The correlation coefficient is between +1 and −1. As correlation coefficient is closer to the absolute value of 1, the relationship between the variables would be stronger. The results of Table 16 show:

There is a positive and significant relationship between content, process, individuals, and organizational factors.

There is a positive and significant relationship between process factors and individual and organizational factors.

There is a positive and significant relationship between individual factors and group and organizational factors.

There is a positive and significant relationship between group factors and organizational factors.

Finally, there is a positive and significant relationship between content, process, individual, organizational factors and organizational performance (There is no significant relationship between group factors and organizational performance).

Testing Research Hypotheses by Structural Equation Modeling

As stated in third chapter, structural equation modeling (or structural models) is a set of regression relations. Thus,

H_0 and H_1 hypotheses should be examined to confirm or reject the significant relationships. In the regression relationships, H_0 and H_1 are as follows:

H_0: There is no significant relationship between two variables.

H_1: There is significant relationship between two variables.

It should be noted that the standard error level to confirm the relationships is 0.05 and the confidence level is 0.95. At the 5% error level, the critical points in the normal curve are 1.96 and –1.96. If the significance coefficient of the regression test (T-value coefficients) is higher than 1.96, H_0 is rejected an H_1 is confirmed, and vice versa. Table 17 summarizes the confirmation or rejection of relationships between research variables.

Table 16
Pearson Correlation Coefficient to examine the relationship between research variables

		Content factors	Process factors	Individual factors	Group factors	Organizational factors	Organizational performance
Content factors	Correlation coefficient	1	–	–	–	–	–
	Significance level	–	–	–	–	–	–
Process factors	Correlation coefficient	.652**	1	–	–	–	–
	Significance level	0.000	–	–	–	–	–
Individual factors	Correlation coefficient	.204*	.416**	1	–	–	–
	Significance level	0.016	0.000	–	–	–	–
Group factors	Correlation coefficient	.072	.153	.409**	1	–	–
	Significance level	0.399	0.071	.000	–	–	–
Organizational factors	Correlation coefficient	.456**	.539**	.354**	.237**	1	–
	Significance level	0.000	0.000	0.000	0.005	–	–
Organizational performance	Correlation coefficient	.588**	.534**	.213*	.132	.380**	1
	Significance level	0.000	0.000	0.012	0.120	0.000	–

Table 17
Research hypotheses testing

Causal relationships	Effect level (Standard estimation)	(T-Value)	Rejection or confirmation of relationships
1. The effect of content factors on individual factors	18/0	34/4	Conformed
2. The effect of process factors on individual factors	49/0	72/7	Conformed
3. The effect of content factors on group factors	–05/0	–38/0	Rejected
4. The effect of process factors on group factors	12/0	95/1	Rejected
5. The effect of content factors on organizational factors	18/0	58/4	Conformed
6. The process of content factors on organizational factors	42/0	20/5	Conformed
7. The effect of individual factors on organizational factors	24/0	18/5	Conformed
8. The effect of group factors on organizational factors	–02/0	–11/0	Rejected
9. The effect of group factors on organizational performance	35/0	44/6	Conformed

The first hypothesis of research: Content factors have a significant effect on individual factors:

As the T-statistic of the first hypothesis is higher than 1.96, the first hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.18 (based on Table 18).

The second hypothesis of research: process factors have a significant effect on individual factors:

As the T-statistic of the second hypothesis is higher than 1.96, the second hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.49 (based on Table 18).

The third hypothesis of research: process factors have a significant effect on group factors:

As the T-statistic of the third hypothesis is smaller than 1.96, the third hypothesis of research is rejected. The results showed that the effect level is also equal to -0.05 (based on Table 18).

The fourth hypothesis of research: process factors have a significant effect on group factors:

As the T-statistic of the fourth hypothesis is smaller than 1.96, the fourth hypothesis of research is rejected. The results showed that the effect level is also equal to 0.12 (based on Table 18).

The fifth hypothesis of research: Content factors have a significant effect on organizational factors:

As the T-statistic of the fifth hypothesis is higher than 1.96, the fifth hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.18 (based on Table 18).

The sixth hypothesis of research: process factors have a significant effect on organizational factors:

As the T-statistic of the sixth hypothesis is higher than 1.96, the sixth hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.42 (based on Table 18).

The seventh hypothesis of research: individual factors have a significant effect on organizational performance:

As the T-statistic of the seventh hypothesis is higher than 1.96, the seventh hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.24 (based on Table 18).

The eighth hypothesis of research: group factors have a significant effect on organizational performance:
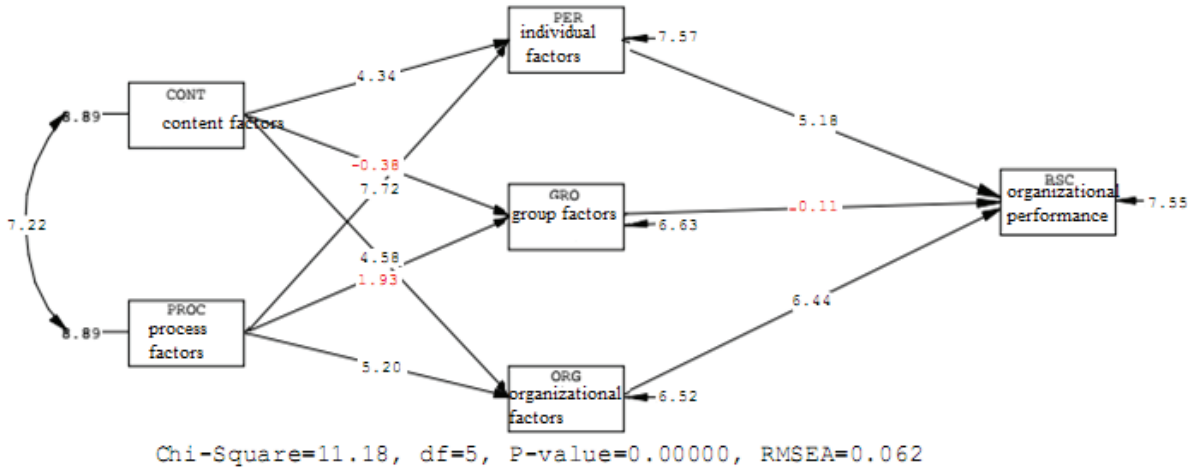
As the T-statistic of the eighth hypothesis is smaller than 1.96, the eighth hypothesis of research is rejected. The results showed that the effect level is also equal to -0.02 (based on Table 18).

The ninth hypothesis of research: organizational factors have a significant effect on organizational performance:
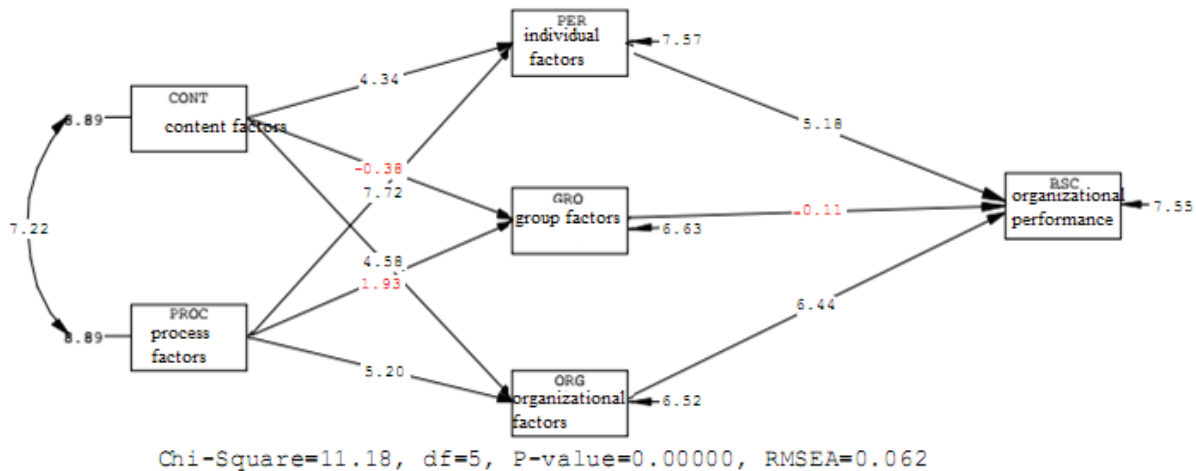
Chi-Square=11.18, df=5, P-value=0.00000, RMSEA=0.062

According to the Lisrel software output, the calculated χ_2 is equal to 11.18, which is less than 3 relative to the degree of freedom (5). The fit index value of the model is appropriate. The RMSEA value is also 0.062. RMSEA is 0.1. The AGFI, GFI, and NFI indices are respectively 0.91, 0.93 and 0.95, which indicate a very good fit.

Figure 1: Structural model (research hypotheses testing) in standard estimation mode

Chi-Square=11.18, df=5, P-value=0.00000, RMSEA=0.062

According to the Lisrel software output, the calculated χ_2 is equal to 11.18, which is less than 3 relative to the degree of freedom (5). The fit index value of the model is appropriate. The RMSEA value is also 0.062. RMSEA is 0.1. The AGFI, GFI, and NFI indices are respectively 0.91, 0.93 and 0.95, which indicate a very good fit.

Figure 2: Structural model (research hypotheses testing) in significance coefficients mode

As the T-statistic of the ninth hypothesis is higher than 1.96, the ninth hypothesis of research is confirmed. The results showed that the effect level is also equal to 0.35 (based on Table 18).

Environmental Analysis Status

In order to analyze and determine the status of environmental changes given two dimensions of environmental change (fundamental-gradual) and the focus of attention (outside-inside), frequency was used. The frequency of 140 respondents indicates how many people believe that the environment is fundamental or gradual or how many people believe that the focus of attention is outside or inside.

In order to determine the status of environmental changes, the mean of two dimensions was first defined. The mean of environmental changes and focus of attention are 3.25 and 3.35, respectively. If the mean of environmental changes is more than 3.25, the environment is fundamental, and if it is less than 3.25, it is gradual. If the mean of focus of attention is greater than 3.35, the focus of attention is outside, and if it is less than 3.35, it is inside.

The table below summarizes the frequency of respondents based on mean.

Table 18
analysis of frequency of respondents in terms of two dimensions of environmental changes and focus of attention

Gradual changes	Fundamental changes
78	62

Focus of attention: inside	Focus of attention: outside
71	69

As the results show, out of 140 respondents, 62 people believed that changes are gradual and 78 people believed that they are fundamental. The results also showed that 69 respondents believed in inside focus of attention and 71 respondents believed in the outside focus of attention. In general, for most respondents, the environment has a fundamental environmental change and the focus of attention is outside.

4. CONCLUSION

Changes in human behavior are classified at four levels:

1. Change in knowledge

2. Change in attitude

3. Change in individual behavior

4. Change in group behavior

The easiest way to change is to make changes in knowledge, followed by change in attitude. The structure

of attitude is different from that of knowledge, since it can be positive and negative emotionally. The change in individual behavior is considerably more difficult and time-consuming than the previous two changes. In addition, change in organizational or group performance is the most difficult and time-consuming change, since it is related habits, customs and traditions. While the last change (organizational and group) has found more importance in the organizations, the essential changes in individual and group behavior require changes in the knowledge, especially change in attitudes of individuals. Thus, organizations should strengthen the capability of strategic thinking among organizational members in order to achieve the goals of the organization.

It is concluded that the content and process factors of strategic thinking are influential on individual factors. It should be noted that the relationship between the content factors and the process of strategic thinking and group factors was not confirmed in the research. Moreover, individual and organizational factors also affected the performance of the organization and the relationship between group factors and the performance of the organization was not confirmed. The proposed and tested model of research is presented in Figure 2.
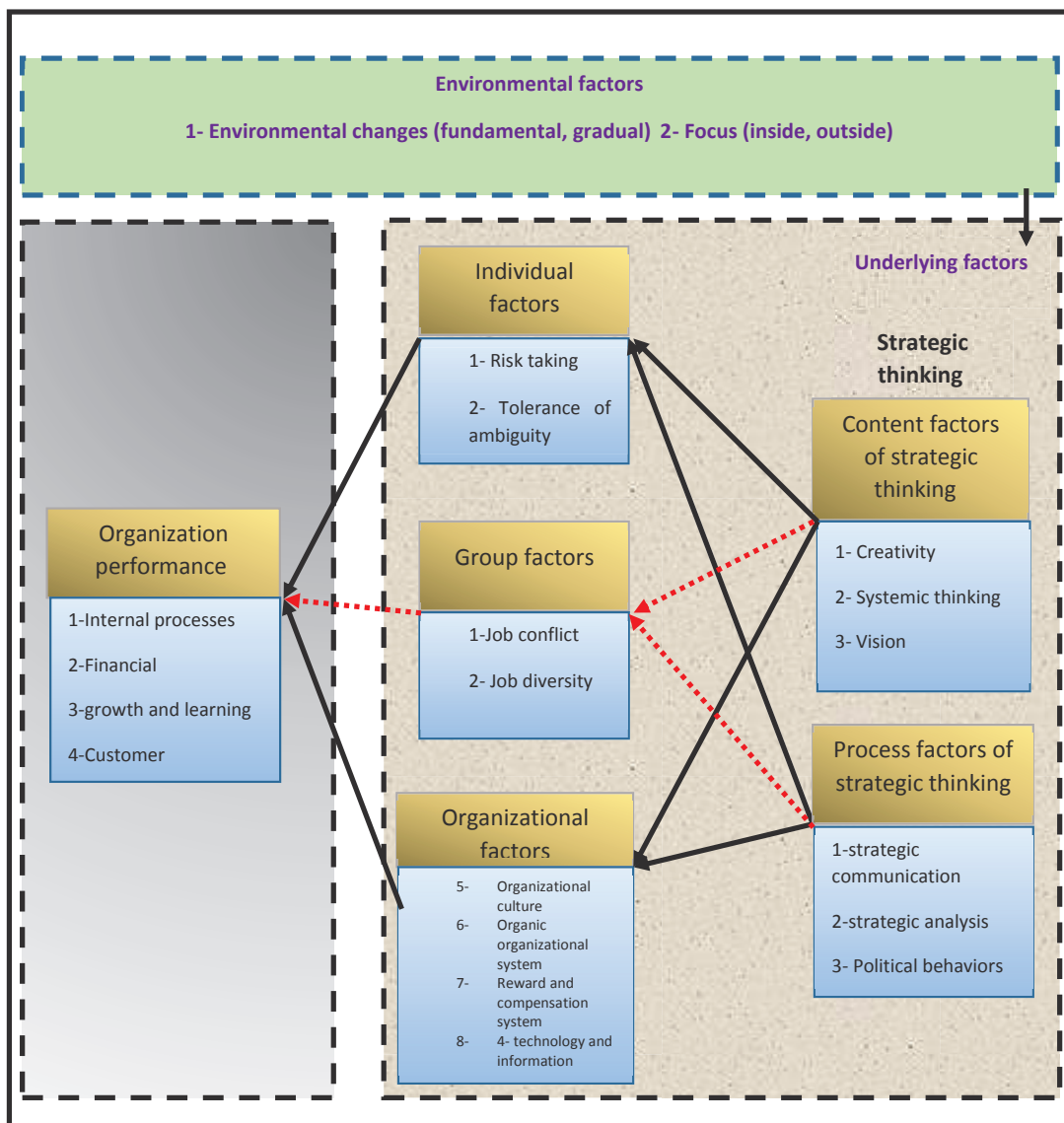

Figure 3: Strategic thinking model

REFERENCES

Abraham, Stan. (2005). Stretching Strategic Thinking. Strategy and Leadership. 33, 5–12.

Armstrong, Micheal (2006). Strategic Human Resource Management. London: Thomson-Shore Inc.

Bonn, Ingrid. (2005) "Improving Strategic Thinking: a multilevel approach". Leadership & Organization Development Journal, Vol. 26, No. 5, pp. 336-354.

Casey, AJ, Goldman, EF. (2013). Enhancing the ability to think strategically: A learning model.

Collins, arnet, carson, dorris, b.lowe. (2000). high performance leadership at the organz 1.

Davoudi SMM, Fartash K, Venera G. Zakirova, Asiya M. Belyalova, Rashad A. Kurbanov, Anna V. Boiarchuk, Zhanna M. Sizova (2018). Testing the Mediating Role of Open Innovation on the Relationship between Intellectual Property Rights and Organizational Performance: A Case of Science and Technology Park, EURASIA Journal of Mathematics Science and Technology Education, 14(4), 1359-1369.

Fartash K., Davoudi, S.M.M., Tatiana A. Baklashova, Natalia V. Svechnikova 4, Yulia V. Nikolaeva, Svetlana A. Grimalskaya (2018). The Impact of Technology Acquisition & Exploitation on Organizational Innovation and Organizational Performance in Knowledge-Intensive Organizations, EURASIA Journal of Mathematics Science and Technology Education, 14(4), 1497-1507.

Goldman, E.F., Casey, A. (2010). Building a culture that encourages strategic thinking.

Hamel, Gray. (2001). Strategy innovation and Quest for Value strategic thinking. 29, 68.

Heracleous, Loizos. (1998). Strategic Thinking or Strategic Planning? Long Range Planning, 31(3) 481-487.

Hitt, M.A., Ireland, R.D., Camp, S.M., & Sexton, D.L. (2003). Strategic Entrepreneurship: Creating a new mindset, 1st Ed. Oxford: Blackwell.

Leidtka, J.M. (1998). Strategic thinking: Can it be taught?

Oshannassy, T. (2003). Modern strategic management: Balancing strategic thinking and strategic planning for internal and external stakeholders.

Pisapia, J, Pang, N.S.K., Hee, T.F., Lin, Y, Morris, J.D. (2008). A Comparison of the use of strategic thinking skills of aspiring school leaders in Hong Kong, Malaysia, Shanghai and the United states: an exploratory study. International Education Studies.

Tastan, S.B., & Davoudi, S.M.M. (2015). An Examination of the Relationship between Leader-Member Exchange and Innovative Work Behavior with the Moderating Role of Trust in Leader: A Study in the Turkish Context. Procedia social and behavioral sciences, Elsevier, 181, 23-32.

Tavakkoli, I, Lawton, J. (2005). International education studies. Hanbook of business strategy. 26, 155–160.

Torest, Christophe. (2001). Strategic Thinking: Why, What, and How? – An Organizational Model of Strategic Thinking. Egos XVIIth Colloquim, 5-7.

Williamson, peter. (2004). Staratergy as option on the future-preference.