

The Study of Relationship Between Managers' Thinking Style and Innovation Potential of Hospital Settings

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Abstract: In the era of competition, innovation (creation, modification, use and transfer of ideas) is inevitable for organizational survival and growth. Researchers believe that there are many organizational variables that can affect its innovational ability. This research was aimed to survey the relationship between top and middle manager's thinking style and organization readiness for innovation in Yazd educational hospitals. This Study was a descriptive, analytical, applied and cross-sectional study. Research population was comprised from 35 top and middle managers of Yazd educational hospitals. Sampling was not done and all the research population contributed in the study. Required data were gathered by using 2 valid Questionnaires including Harison and Bramston thinking style questionnaire and organizational innovation questionnaire. Data analysis was done by using spss₁₄ software. We used descriptive statistics (percent, mean and standard deviation) and Pearson's correlation coefficient for data analyzing. Based on the findings of study, only the activism style of thinking has a statistical negative relationship with cultural dimension of organizational readiness for innovation ($R = -0.35$, $P = 0.03$). Other styles of thinking (idealism, combined, realism and analytical styles) have no statistical relationship with organizational readiness for innovation and its dimensions (cultural, structural and human resource dimensions). Based on the findings we can approve the negative influence of pragmatism thinking style on the cultural readiness of organization for innovation. Other relationships between managers' thinking style and organizational readiness for innovation need to be studied more.

Key words: Thinking style • Innovation • Top managers • Middle managers • Educational hospital

INTRODUCTION

Innovation is creativity in action. In other words, innovation means creative thinking in action. It includes the use of mental abilities to create a new thought or concept and to provide new products and process for market [1]. Individual innovation of staff in workplace is the base of performance in an organization. Therefore, research about innovation motivators and mediators is an important issue [2]. Currently, working environment stability, have been replaced by instability and uncertainty [3]. For an organization to compete in a

changing and without uncertainty environment, innovation is a critical factor for growth, success and survival of an organization [4]. Innovation sustains the organization's position against competitors. So, it is a long-term competitive advantage. In the other words, innovation is the new thing that pursues a specific objective [2]. The affecting factors which can influence innovational ability of an organization are categorized in 3 categories include cultural, structural and human resource [5]. Based on this categorization, an organization's readiness for innovation depend on innovation cultural dimensions (acceptance of ambiguity,

tolerance impractical issues, low external controls, risk tolerance, conflict tolerance and focus on results), structural dimensions (organic structure, abundant resources and high correlation among the units) and human resource dimensions (high commitment to training and development, job security and creative people) [6].

Thinking Style is a mental model that explains the manner of data collecting, data processing and using of the obtained information in decision making. Therefore, each person's thinking style, has a significant effect on the quality of the analysis, interaction with others, the identification, organizing, communication and dialogue, problem solving, leadership and management and decisions [7]. Different people have different Thinking styles. Harriston and Bramston (2002) have expressed five major styles of thinking as follows:

Act Wingers: Pragmatic People are thinkers with short-term and practical plans that like sudden and constructive ideas and experiences. They are more innovator and flexible than others.

Combine: People with this thinking style emphasize on fundamental concepts and abstract ideas. They combine different ideas and provide new idea and solution.

Indeed Wingers: These people believe that reality is what is observed. So, they do not focus too much on their mind. Also, they have a low tolerance for ambiguity and ambivalence. These persons specify the objectives and then prepare programs to achieve the goals in everything.

Idealist: The most important characteristics of idealist, is focusing on the whole. Setting goals and standards, focusing on the correct method of performing the tasks and focusing on the ideals and values are the main features of whom that think as an idealist.

Analysis Wingers: They are interested in theory, planning and seeing world regularly. Their main strategy is analysis and action.

In recent decade, research on the thinking style has taken an important place in organizational research. Authors believe that this kind of research can lead to many benefits for organizations such as:

- Employees combining together would be best.
- Fit people with positions to using experiences and Thinking styles.

- Broader and deeper thinking ability of individuals to make decisions and solve problems and impress others.
- Increase understanding and improve communication between employees and the organization to create opportunities for personal and professional growth [8].

Previous studies have showed the many factors such as members' thinking style, motivation and abilities of individuals, existing of innovation supporter [9], self-management ability (10) and organizational structure (11) can influence the innovation potential.

Also, many researches have indicated that thinking style influences on the performance [12,13] and is related to decision making style [14], culture [15,16], gender [15,17,18], discipline [18], age [17] and academic degree [19,20]. Thinking style also has a direct relationship with innovative styles [8,9,17,18,21,22]. This research was aimed to survey the relationship of top and middle managers' thinking style and organization readiness for innovation in Yazd educational hospitals.

MATERIALS AND METHODS

This Study was a descriptive, analytical, applied and cross-sectional study. The study population was comprised from 35 top and middle managers of Yazd educational hospitals. Sampling was not done and all the research population contributed in the study. Required data were collected through a Thinking Style standard questionnaire (Harrison & Bramston, 2002) and organizational innovation questionnaire. The reliabilities of used questionnaires were obtained using Cronbach's alpha coefficient as 0.79 and 0.70 for thinking style and innovation questionnaires, respectively. First section of thinking style questionnaire consist the personal data (age, sex, education). The second section consists of 18 questions with five options that each of them related to one thinking style and staff rate it based on their preferences from 5 to 1. The related statement of each thinking style in all questions is blinded for respondents. Therefore, after completion of questionnaires, each respondent takes a score between 18 and 90 for each thinking style. Each score shows the amount that the respondent prefers to use that thinking style. Also, organizational innovation questionnaire contains 12 sub-dimensions in three dimensions of innovational readiness including cultural, structural and human resources. The respondents of this questionnaire are

questioned to indicate their agreement or disagreement with questionnaire statements in 5-points Likert scale (strongly agree to strongly disagree) which obtain the scores of 5 to 1. Therefore, the studied organization can obtain a score between 120 and 24 in each sub-dimension and the mean of all sub-dimension scores shows its readiness for innovation. In this study, after completing the questionnaires, data analysis was done through SPSS software English version 14. We used descriptive statistics (percent, mean and standard deviation) and Pearson's correlation coefficient for data analyzing. It is notable that all samples were informed from study objectives and their personal data were kept confidentially.

RESULTS

The frequencies of organizational readiness situations for innovation in studied hospitals are presented in Table 1:

Also, the frequency of each thinking style among studied hospitals' managers is shown in Table 2:

Tables 3 and 4 show the mean, minimum and maximum scores of thinking styles and the hospitals' readiness for innovation and its dimensions in studied hospitals:

The statistics of relationship between managers' thinking style and organizational readiness for innovation in studied hospitals are shown in Table 5.

DISCUSSION

To determine the level of organizational readiness for innovation in Yazd educational hospitals, scores are divided to low score (percentile 0 to 33), medium (percentile 34 to 67) and high (percentile 68 to 100) and following results were obtained:

- Innovation readiness was average in viewpoint of 97.1% of managers and was low in 2.9%. Cultural readiness for innovation was average, structural and human resource readiness for innovation was low, but total readiness was good. In some same previous studies, the innovation readiness has been evaluated as fairly good [8] and good [18].
- Styles of thinking in top and middle managers of educational hospitals are assessed based on the Harrison and Bramston model. Most of studied

Table 1: The frequencies of respondents' rating from organizational readiness for innovation in studied hospitals

Innovation readiness	Frequency	Percent
High	0	0
Moderate	34	97.1
Low	1	2.9
Total	35	100

Table 2: The frequency of each thinking style among studied hospitals' managers

Thinking style	Preference rate	Frequency	Percent
Idealism	High preference	1	2.9
	Moderate preference	6	17.1
	Neutral	23	65.7
	Moderate non-preference	4	11.4
	High non-preference	1	2.9
Total		35	100
Combined	High preference	0	0
	Moderate preference	7	20
	Neutral	24	68.6
	Moderate non-preference	3	8.6
	High non-preference	1	2.9
Total		35	100
Activism	High preference	5	14.3
	Moderate preference	12	34.3
	Neutral	15	42.9
	Moderate non-preference	3	8.6
	High non-preference	0	0
Total		35	100
Realism	High preference	0	0
	Moderate preference	3	8.6
	Neutral	25	71.4
	Moderate non-preference	5	14.3
	High non-preference	2	5.7
Total		35	100
Analytical	High preference	0	0
	Moderate preference	5	14.3
	Neutral	11	31.4
	Moderate non-preference	11	31.4
	High non-preference	8	22.9
Total		35	100

Table 3: Mean, minimum and maximum scores of managers' thinking styles in studied hospitals

Thinking style	N	Minimum	Maximum	Mean	SD
Idealism	35	42	70	53.14	6.05
Combined	35	44	66	52.94	5.47
Activism	35	39	63	49.20	6.53
Realism	35	36	69	55.00	6.03
Analytical	35	45	76	60.02	7.87

Table 4: Mean, minimum and maximum scores of thinking styles in studied hospitals

Innovational readiness	N	Minimum	Maximum	Mean	SD
Cultural	35	22	45	33.45	4.42
Structural	35	13	24	19.11	2.50
Human resource	35	19	29	23.74	2.58
Innovation	35	64	90	76.31	6.48

Table 5: The statistics of relationship between managers' thinking style and organizational readiness for innovation in studied hospitals

Thinking style	Innovation readiness							
	Cultural		Structural		Human resource		Innovation	
	R	P value	R	P value	R	P value	R	P value
Idealism	0.20	0.24	-0.07	0.68	-0.16	0.34	0.04	0.80
Combined	-0.26	0.13	0.02	0.89	0.03	0.86	-0.15	0.37
Activism	-0.35	0.03	0.01	0.94	0.02	0.89	0.23	0.18
Realism	0.12	0.46	-0.14	0.40	-0.02	0.87	0.02	0.90
Analytical	0.22	0.20	0.61	0.72	0.11	0.52	0.21	0.21

hospitals' managers were in neutral situation for using the ideal style (65.7) and lowest of people was in no strong preference situation (2.9).

- The results showed that analytical thinking style is over other styles with the average score of 60. Harison and Bromson's findings showed that 35% of people have analytical thinking style, 13% ideal thinking style, 15% pragmatic thinking style and 10% combined thinking style. In this study mean score was 60.02, 55.00, 53.14, 52.94, 49.2. Culture of our society ease analytical thinking style and pay attention to details and it's similar to Roshan Fard's research [18] and Sternberg and Lindsay's research [15].

To assess the relationship between thinking styles and cultural dimension of organizational readiness for innovation, findings showed there are inverse correlation between pragmatic thinking style (activism) and cultural readiness for innovation with a significance level of 0.03. In previous researches, pragmatic thinking style of managers has had the greatest relationship with organizational readiness for innovation [8,18].

Pragmatic people are thinkers with short-term and practical plans that like sudden and constructive ideas and experience. They are more innovators and more flexible than others. Risk tolerance, conflict tolerance and focus on results are related to cultural readiness for innovation and similar to pragmatic thinking style. But in this study relationship between cultural readiness for innovation and pragmatic thinking style was negative.

Other findings showed there isn't relationship between thinking styles and structural readiness for innovation. Nevertheless, in previous studies there was a meaningful and positive relationship between realistic thinking style and structural readiness for innovation [18,22].

Combining thinking style has had the most significant relationship with organizational readiness for innovation [22]. Esmi in a study of schools has approved

the same relationship [11]. Therefore, the organic structures have a positive effect on innovation, because in these structures vertical levels is little and flexibility is more. Also thinking styles related to creativity and innovation is encouraged by hospital resources and communication between the individual units. Findings showed that, there was not relationship between thinking styles and the human resources dimension of readiness for innovation. But Hashemi showed that there is the highest negative relationship between analytical thinking style and human resources dimension of innovational potential [22]. Also, Roshanfard achieved significant relationship between pragmatic thinking human resources dimension [18]. Top managers have a significant role in achieving the human resources, because they set the organization's vision and mission.

Finally, our findings suggested that there isn't a statistical relationship between thinking styles and organizational readiness for innovation. In Roshanfard's research, there is a meaningful positive relationship between thinking style of realism and pragmatism with the total organizational innovation and there is a meaningful and negative relationship between analytical thinking style with the total organizational innovation [18]. Also, Hashemi showed pragmatic thinking style has most positive relationship and analytical thinking style has most negative relationship with organizational innovation [22]. Emamipour [17], Saif Hashemi [21], Ford [9] and Zhang [16] approved the same relationship in their studies.

The conclusions from the research findings can be summarized like this:

- There is not a significant relationship between managers' thinking style and organizational readiness for innovation in studied hospitals.
- Among thinking styles, analytic thinking style has highest mean in examined settings.
- There is inverse correlation between the cultural dimension of innovation readiness and pragmatic thinking style of managers in Yazd educational hospitals with a significance level of 0.036%.
- Organizational readiness for innovation was moderate.

CONCLUSION

Based on the findings, we can conclude that each of thinking styles play an important role in innovational readiness and individual thinking style

must be harmonized with staff situation. In other words, thinking styles, knowledge, intellectual ability, motivation, personality and environment influence creativity and innovation. Due to the influence of thinking style on behavior and activities, managers need to fit each individual's thinking style with situation and ease the development of personal and organizational innovation. Finally it can be suggested that managers must organize workshops about thinking styles and provide facilities for cultural, structural and human resource readiness for innovation. It is notable that our study had some limitations. The results which presented in this study are cross-sectional. Therefore, they fail to capture the effects of ongoing efforts. Also, the generalization of the findings should be done with caution due to the limitations of cross-sectional studies.

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REFERENCES

1. Chitsaz A., 1999. The science of innovation. *Management Development Journal*, 7(9): 20-23.
2. Talebebidakhti, A. and A.R. Anvari, 2008. The study of creativity and innovation in organizations. *Tadbir* 151: 43-49.
3. Fakhriyan, S., 2002. The study of experts' creativity and innovation with organizational factors. A thesis presented to Tehran university, management faculty in partial fulfillment of MS_c degree. Tehran,
4. Farahid, F., 2004. The study of affecting factors of companies' success. *Economic and Management Journal*, 62: 54-62.
5. Tan, G., 1998. *Managing Creativity in Organization: A system Approach*. Blackwell Publishers Ltd, 7(1): 23-31.
6. Tan, G., 2004. *Managing Creativity in Organization: A system Approach*. Blackwell Publishing Ltd, 13(3): 145-153.
7. Harrison, A. and R. Bramson, 2002. *The Art of Thinking*. Berkley Publishing Group.
8. Zarei, A.R., 2006. The study of relationship between managers' thinking style and organizational readiness for innovation in Shiraz city schools. A thesis presented to Shiraz university, management faculty in partial fulfillment of MS_c degree. Shiraz.
9. Ford, C.M., 1998. Interpretive style motivation, ability & content as predictors of creative performance. *Blackwell Publishers Ltd*, 8(3): 188-196.
10. Mollahosseini, A. and B. Barkhordar, 2007. The study of relationship between self-management skills and employees' innovation in Kerman province organizations. *Research Letter of Social and Humanity Sciences*, 7(27): 67-74.
11. Esmi, K., 2006. Analytical study of the relationship between organizational structure and organizational creativity in high schools of Shiraz city. A thesis presented to Shiraz university in partial fulfillment of MS_c degree. Shiraz.
12. Rock, J., 1998. *Predicting performance: What can thinking styles and their relationships with situations contribute to prediction?*. Doctoral dissertation, New York University. New York.
13. Tavangar Marvasti, Z., 2004. Analytical study of the relationship between thinking styles and performance of high school managers in Shiraz city. A thesis presented to Shiraz university, management faculty in partial fulfillment of MS_c degree. Shiraz.
14. Rettig, K.D. and C.L. Schulz, 2010. *Cognitive Style Preferences and Financial Management Decision Style*. Available from: www.afcpe.org/doc/vol22.pdf. Last access: 27/10/2010.
15. Lindsay, R., *The Construct of School Culture, Thinking Style and Leader Behaviors*, 2000 [Cited 2008 Mar]. Available form: <http://etd.lib.fsu.edu/theses/submitted/etd-1115200403901/unresatricted/02dissertationduncan.pdf>. Last access: 21/10/2010.
16. Bernardo, A. and L. Zhang, 2002. Thinking Style & Academic Achievement among Filipino Student. *Journal Genet Psychol.*, 163(2): 149-164.
17. Emamipour, S. and AA. Seyf, 2004. Analytical study of thinking styles among school and university students and its relationship with creativity and educational achievements. *Educational Innovations*, 3: 35-56.

18. Roshanfard, A., 2008. The study of relationship between top and middle managers' thinking styles and organizational readiness in Shiraz educational hospitals. A thesis presented to Shiraz university of medical sciences, faculty of management and medical informatics in partial fulfillment of MSc degree. Shiraz.
19. Khayyer, M. and S. Ostovar, 2006. The study of relationship of thinking styles and some indicators of social class with educational progress. *Daneshvare Raftar*, 13(21): 55-62.
20. Pirmohammadi, Gh R., A. Khodaei, H. Yosefi, F. Shariati and M. Dasta, 2010. Relationship of thinking styles and learning approaches with educational progress among male and female students. *Education and Learning Studies*, 2(58-2): 69-94.
21. Seyf Hashemi, F.S., 2004. The study of relationship between mentality and creativity level of high schools managers in Isfahan city. A thesis presented to Isfahan university, faculty of management in partial fulfillment of MSc degree. Isfahan,
22. Hashemi, S.A., A. Sadeghifard and A. Hemmati, 2011. The study of relationship between thinking styles and creativity and innovation among Lamerd city's managers. *Research and Science in Educational Sciences*, 8(30): 63-72.