

Evaluation of strategic thinking and its affecting factors among managers and personnel in a medical sciences university in Iran

Sedigheh Salavati, Mohammad Amerzadeh, Amjad Mohammadi Bolbanabad, Bakhtiar Piroozi and Shilan Amirihoseini

Sedigheh Salavati and Mohammad Amerzadeh are both based at the Department of Health Management and Economics, Tehran University of Medical Sciences, Tehran, Iran. Amjad Mohammadi Bolbanabad and Bakhtiar Piroozi are both based at the Social Determinant of Health Research Center, Kurdistan University of Medical Sciences, Sanandaj, Iran. Shilan Amirihoseini is based at the Treatment Economic Department, Kurdistan University of Medical Sciences, Sanandaj, Iran.

Abstract

Purpose – Prediction of future changes and making appropriate strategic decisions require strategic thinking in any organization. It helps managers to create new opportunities. The purpose of this paper is to measure strategic thinking and its affecting factors at Kurdistan University of Medical Sciences.

Design/methodology/approach – This is a descriptive-analytic as well as a cross-sectional study which was conducted in 2016. Its statistical community included 300 managers and personnel of Kurdistan University of Medical Sciences. The sample size was equal to statistical community. Data were collected using a standard questionnaire. Data were then entered into SPSS20 and were analyzed using statistical tests such as Freedman, Whitney and Kruskal-Wallis.

Findings – Overall, strategic thinking was evaluated “good” and “somewhat good” among managers (5.0 ± 72.28) and personnel (6.0 ± 25.48), respectively. Moreover, among the elements of strategic thinking, conceptual thinking obtained the highest score among both managers (6.0 ± 06.32) and personnel (5.0 ± 53.52), which was evaluated in a “good” level. There was a significant difference between managers’ and personnel’s strategic thinking score ($p = 0.001$). Different education groups of managers and personnel were different in terms of strategic thinking ($p < 0.05$), but strategic thinking score of managers and personnel were not significant based on the work experience and type of employment.

Originality/value – Although both managers and personnel received a good score in terms of strategic thinking, improving the level of strategic thinking especially for future trends and opportunities can lead to enhanced strategic thinking among managers and personnel of Kurdistan University of Medical Sciences.

Keywords Managers, Personnel, Goldman model, Strategic thinking

Paper type Research paper

Introduction

Nowadays organizations are facing technological, social and political changes, more complicated external environment, massive communication with environment and massive and long plans (Langley, 2007; Kapferer, 2012). The healthcare organizations are also facing rapid environmental changes and threats. Organizational changes is the necessity to survive in these organizations (Bidad *et al.*, 2009; Swayne *et al.*, 2012). Therefore it is essential that health system managers comprehend environmental changes properly and develop effective strategies to deal with these changes (Williamson, 1997). Leaders of successful healthcare organizations look at the future, comprehend the nature and consequences of external changes and create a new vision (Young and Ballarin, 2006; Swayne *et al.*, 2012). The base of organizational leadership in dynamic environments is the strategic management that provides a momentum to change.

Received 22 April 2017
Revised 7 July 2017
Accepted 7 July 2017

Thereby the authors thank managers and headquarter personnel coordination of Kurdistan University of Medical Sciences. This paper is the result of the research project approved in Kurdistan University of Medical Sciences No. 1394.297 and was sponsored by this University.

Sweeney *et al.* believe that the strategic management has three elements: strategic thinking, strategic planning and strategic momentum (Swayne *et al.*, 2012). Strategic thinking is the foundation of the intellectual activities in the strategic management. Strategic thinking is a thought process, an attitude, or an intellectual analysis manner that asks a person to put himself in the position of a leader and see the big picture (Liedtka, 1998; Lawrence, 1999). Vision and futurism are inherent parts of the strategic thinking, and strategic thinkers are constantly recreating the future and providing a window into the world of tomorrow (Swayne *et al.*, 2012). Elements of strategic thinking have been defined differently by different researchers. According to Liedtka's (1998) prospective, strategic thinking consists of five elements: systems perspective, intent-focused, intelligent opportunism, thinking in time and hypothesis driven. According to the Goldman model, strategic thinking contains futurism, systematic thinking, intelligent opportunism and conceptual thinking (Moammai *et al.*, 2013). Researchers believe that systematic thinking, creativity and insight are three key elements of strategic thinking, creativity and insight are three key elements of strategic thinking (Heracleous, 2003; Bonn, 2005; Pisapia *et al.*, 2009; Robinson, 2012).

Measuring the level of strategic thinking in members of an organization can help to determine the dimensions of strategic thinking that need to improve and strengthen. This improvement is necessary because managers and personnel level of strategic thinking affect the organization's performance and efficiency (Pisapia *et al.*, 2005, 2009; Goldman and Casey, 2010; Karğın and Aktaş 2012), and developing successful strategies depends on managers' and personnel's strategic thinking skills (Swayne *et al.*, 2012).

Universities of medical sciences in Iran are responsible to deliver the healthcare services for community via affiliated hospitals and healthcare networks and education of healthcare professions (Salavati *et al.*, 2017). The appropriate performance of these organizations and their better adaptation with environmental changes resulted in their performance improvement both in services delivery and professions education, and it resulted in quality improvements of healthcare services automatically. So in recent years, universities of medical sciences in Iran have begun strategic planning and management discussion and have done some actions in this regard (Moammai *et al.*, 2013). However, there are not any studies about the different dimensions of the strategic management including strategic thinking in universities of medical sciences except two studies that measured the strategic thinking level in two universities in Iran (Moammai *et al.*, 2013; Salavati *et al.*, 2017). Identifying gaps in the field of strategic thinking in the area of medical sciences universities' headquarter scan provides a background to design interventions in order to promote strategic thinking among managers and personnel in this field, since a prerequisite for the successful strategic management is the existence of strategic thinking personnel and managers.

In regard with the previous content, this study was conducted to measure the strategic thinking and its dimensions between managers and personnel in Kurdistan University of Medical Sciences. Also determining the relation between some demographic and organizational characteristics and strategic thinking was another objective of this study. The strategic thinking dimensions which are measured in this study are systematic thinking, conceptual thinking, futurism and intelligent opportunism. Systematic thinking is the ability to identify various factors that affect the performance of the organization ability to recognize the interdependence between system components, holism and target search (Simon, 1960; Jeong *et al.*, 2007). Conceptual thinking means identifying subjective and objective patterns by strategist, so that they can comprehend situations and phenomena and combine different issues and different factors to form a conceptual framework (Van der Laan, 2008). In the economic and political context, intelligent opportunism means competition among groups, sectors, organizations and other similar institutions at all levels of the organization (Lawrence, 1999). And it is in relevant with personnel's experiences and new ideas to find the most appropriate way to implement change plans. The futurism is a futurism capability to design future scenarios and plan changes and predict problems related to the process of change. Futurism forms the expected opportunities and threats facing the organization and offers measures to promote optimal outputs (Maroofi and Karami, 2015).

According to the latest divisions of a country, Iran contains 31 provinces and each province has at least one university of medical sciences. Universities of medical sciences are in charge of

health services, monitoring people's health and the training of health human resources in country, and these universities depend on the Ministry of Health and Medical Education. Kurdistan province has Kurdistan University of Medical Sciences and it is located in the west of Iran, and this province has a population of over 1.6 million people based on the 2016 census report (SCO Iran, 2016).

Method

This study is a descriptive, cross-sectional study which was conducted in Kurdistan University of Medical Sciences in 2016. Study was set in headquarters of Kurdistan University of Medical Sciences. Headquarters include university presidency and deputies of treatment, health, food and drug administration, management and resources development, education, research and technology and students affairs. These departments are in charge of planning and monitoring of faculties' affairs. In total, 300 people are in this study consisting of managers and headquarters personnel of Kurdistan University of Medical Sciences. Managers include departments' authorities and their assistances and headquarters' supervisors. Due to limited population, the study was conducted in the form of census. In this study, the strategic thinking assessment questionnaire was used. Reliability and validity of the questionnaire has been confirmed in Salavati *et al.* (2017). The questionnaire has two parts. The first part is to obtain managers' and personnel's demographic and organizational characteristics including age, gender, marital status, type of employment, work experience, workplace and education, and second part contains 59 questions to assess strategic thinking. This questionnaire measures strategic thinking in four dimensions including conceptual thinking, systematic thinking, intelligent opportunism and futurism in seven-choice Likert scale. The assessment criteria of strategic thinking are as follows: average score 1-1.87 = very poor, average score of 1.87-2.75 = weak, average score: 2.750-3.62 = somewhat weak, average score 3.62-4.50 = average, average score 4.50-5.37 = somewhat good, average score: 5.37-6.25 = good and average score 6-7.25 = very good. The questionnaire was completed by personnel and managers. In this study descriptive statistics tests including frequency, percentage, mean and tables were used, in order to describe data. Friedman ranking test to rank aspects of strategic thinking, Mann-Whitney test to determine the score difference in the strategic thinking of managers and personnel and Kruskal-Wallis and Mann-Whitney tests to determine score difference of strategic thinking based on demographic and organizational characteristics were used. All analyses were performed by SPSS Version 20.

The study was approved by the ethic committee of Kurdistan University of Medical Sciences.

Findings

In this study, 300 questionnaires were distributed and 278 of them were completed by respondents and returned to the researcher. In 278 respondents, 14.4 percent ($n = 40$) were managers and 6/85 percent (237) were personnel of Kurdistan University of Medical Sciences. The number of male and female respondents was 139. Most respondents were in the age group 45-40 years (21.6 percent) and married (78.1 percent). Table I shows the frequency distribution of participants' organizational characteristics, including gender, level of education, type of employment and work experience.

Table II shows that the average score of managers' strategic thinking is at the level of "good" (5.72 ± 0.28) and is higher than personnel' strategic thinking score that is "pretty good" (5.25 ± 0.47). In managers' sample, all aspects of strategic thinking, conceptual thinking with score of 6.06, systematic thinking with score of 5.69, intelligent opportunism with score of 5.64 and futurism with score of 5.64 are at the level of "good". In personnel's sample, among dimensions of strategic thinking, conceptual thinking personnel with score of 5.53 is at the level of "good" and aspects of systematic thinking with score of 5.3, intelligent opportunism and futurism with score of 5.08 are at the level of "somewhat good".

Kolmogorov-Smirnov test results showed that data related to strategic thinking do not follow a normal distribution. Therefore, non-parametric tests were used for data analysis. To compare

Table I Frequency distribution of managers' and personnel' demographic and organizational characteristics

Variable	Managers		Personnel		All respondents	
	Number	Percent	Number	Percent	Number	Percent
<i>Gender</i>						
Female	23	57.5	116	48.7	139	50
Male	17	42.5	122	51.3	139	50
<i>Level of education</i>						
Diploma and less	0	0	16	6.7	16	5.8
Associate degree and bachelor	21	52.5	135	56.7	156	55.1
Master	14	35	80	33.6	94	33.8
PhD	2	5	2	0.8	4	1.4
GP and pharmacist	3	7.5	5	2.1	8	2.9
Total	40	100	238	100	278	100
<i>Employment type</i>						
Official	35	87.5	144	60.5	179	64.4
Contractual	0	0	8	3.4	8	2.9
Arbitrary	5	12.5	69	29	74	26.6
Corporative	0	0	4	1.7	4	1.4
Projective	0	0	13	5.5	13	4.7
Total	40	100	238	100	278	100
<i>Years of service</i>						
Under 10 years	0	0	93	39	93	33.4
10-20 years	30	85	75	31.5	109	39.2
Higher than 20 years	6	15	70	29.4	76	27.3
Total	40	100	238	100	278	100

Table II Strategic thinking score and its dimensions in managers and personnel of Kurdistan University of medical sciences and comparison using the Mann-Whitney test

Dimensions of strategic thinking	Conceptual thinking		Systematic thinking		Intelligent opportunism		Futurism		Total score of Strategic thinking	
	Managers	Personnel	Managers	Personnel	Managers	Personnel	Managers	Personnel	Managers	Personnel
	Average	6.06	5.53	5.69	5.3	5.64	5.08	5.46	5.08	5.72
SD	0.32	0.52	0.44	0.49	0.45	0.75	0.66	0.59	0.28	0.47
Number	40	238	40	238	40	238	40	238	40	238
p-value	0.001		0.001		0.001		0.004		0.001	

managers' average score of strategic thinking with personnel, Mann-Whitney test was used which showed that there is a significant difference between managers' total strategic thinking and personnel's ($P=0.001$). All aspects of managers' strategic thinking score were also higher than personnel's and were statistically significant (see Table II).

Friedman test results and ratings of strategic thinking dimensions show that the average score of strategic thinking among managers is different ($p < 0.001$) and conceptual thinking has the highest scores. The average score of strategic thinking among personnel is different ($p < 0.001$) and conceptual thinking has the highest scores (see Table III).

Kruskal-Wallis test results showed a significant difference between different educational groups in terms of strategic thinking in both managers' (p -value = 0.019) and personnel' samples (p -value = 0.001). As the level of education increases, strategic thinking increases. But the results of the Spearman test, Kruskal-Wallis and Mann-Whitney showed that there was no significant difference among different groups in years of service, type of employment and gender in terms of strategic thinking in managers' and personnel's sample (see Table IV).

Table III Ranking of strategic thinking dimensions among Kurdistan University of Medical Sciences in managers and personnel

Rank	Dimensions of strategic thinking	Average	Managers				Personnel				
			χ^2	F	p-value	Number	χ^2	F	p-value	Number	
1	Conceptual thinking	3.30	16.29	3	0.001	40	3.36	168.4	3	0.001	238
2	Systematic thinking	2.40					2.47				
3	Intelligent opportunism	2.55					2.28				
4	Futurism	1.75					1.89				

Table IV The results of non-parametric tests among strategic thinking and demographic variables of respondents

Variable	Managers		Personnel	
	Mean	SD	Mean	SD
<i>Level of education^a</i>				
Diploma and less	-	-	4.59	0.84
Associate degree and bachelor	5.99	0.33	5.21	0.56
Master	6.15	0.26	5.24	0.81
PhD	6.22	0	6.01	0.79
GP and pharmacist	6.27	0.18	5.52	0.39
p-value	0.019		0.01	
<i>Type of employment^b</i>				
Official	5.66	0.47	5.3	0.48
Contractual	-	-	5.6	0.49
Arbitrary	5.85	0.09	5.2	0.49
Corporative	-	-	5.45	0.25
Projective	-	-	5.12	0.67
p-value	0.19		0.28	
<i>Years of service^b</i>				
Under 10 years	0	0	5.09	0.68
10-20 years	5.59	0.48	5.07	0.69
Higher than 20 years	5.66	0.45	5.1	0.73
p-value	0.38		0.36	

Notes: ^aKruskal-Wallis test; ^bMann-Whitney test for managers and Kruskal-Wallis test for personnel

Discussion

This study was conducted to measure strategic thinking in managers and personnel and its related factors in Kurdistan University of Medical Sciences.

Results showed that strategic thinking score and its dimensions in managers' sample was "good" and in personnel's sample conceptual thinking was good and other dimensions were "somewhat good". In Salavati *et al.* (2017) study, which has examined strategic thinking and its dimensions among managers and personnel of Jondi Shapour University (a university in Iran's Khuzestan province), strategic thinking in managers and personnel has been assessed "somewhat good". In Saadati *et al.* (2013) study, which has been implemented on state organizations' managers in Kerman (one of Iran's province), most of the managers' strategic thinking score has been assessed positive (high and very high). Regarding a significant difference between managers' strategic thinking and personnel seen in our study, managers had higher level of strategic thinking than organization's personnel. Of course regarding its amount, this difference is low. In Vaisyan *et al.* study managers' strategic thinking score was higher than personnel too, which is consistent with our study. Higher managers' strategic thinking level than personnel can be the result of managers' higher education and their higher vision to personnel. And training also influences strategic thinking behavior (Swayne *et al.*, 2012), therefore since managers take more management courses in their work life, it is anticipated that they have higher

strategic thinking than personnel. Goldman (2008) expresses that the ability of strategic thinking has been known as one of the top management needs for a long time. In addition, due to the increasing complexity of the social environment, this ability is also required at lower level of organization (Goldman, 2008). Therefore efforts in promoting strategic thinking in personnel particularly in systemic thinking, intelligent opportunism and futurism seem essential. In order to promote strategic thinking dimensions in organization, creating encouraging culture of strategic thinking can be helpful and in this regard formal training, developmental activities and self-directed learning initiatives have been recommended, and there is an agreement in this regard that strategic thinking is a skill that can be learned and it needs continuity in training for development and repetition cycle to improve (Liedtka, 1998; Kapferer, 2012).

Results showed that both personnel and managers have higher conceptual thinking level and after that systemic thinking dimensions, intelligent opportunism and futurism had the highest score in both groups. These findings are similar to another study that measured accountants' strategic thinking skills during the process of matching with the commercial coding system in Turkey in which the most usage of strategic thinking was in systemic thinking dimension and reflecting (Kargın and Aktaş, 2012).

But these findings are different from findings of Moammaie *et al.* study which has measured strategic thinking among managers in Tehran University of Medical Sciences (another medical university in Iran) and dimension priority order was systemic thinking, conceptual thinking, futurism and intelligent opportunism (Moammai *et al.*, 2013). Difference in findings in these two studies can show that although both universities have the same mission and follow same macro policies, members of two organizations have different level of strategic thinking and it can be the result of individual and organization differences in Iran universities of medical sciences.

In this study, strategic thinking among managers and personnel based on levels of education was different and managers and personnel with higher degree of education gained the highest scores. In Salavati *et al.* (2017) study strategic thinking had also a significant relationship with educational level. Robert suggests that because most managers due to their skills in operation have been upgraded to a higher category, their strategic thinking skills have not been upgraded and training develops strategic thinking. Although Robert's intention of training is techniques associated with strategic thinking, the academic training in higher levels of education also develops people's viewpoint and is practice of thinking (Zuckerman, 2005). Thus, we can conclude that in the management posts having higher academic education degree should be one of the qualifications. Creating conditions for higher education of organization members like supporting study opportunities and privileges for continuing education in order to improve their strategic thinking dimensions are recommended too.

This study has some limitations too in which the most important one is that the findings of the current study cannot be generalized to faculties, hospitals and healthcare centers affiliated to headquarter in Kurdistan Universities of Medical Sciences, because career characteristics and its nature related to queuing and headquarters are not similar. Proposing any solutions to improve strategic thinking dimensions in university's managers and personnel was not this study's aim, and therefore it is recommended that a study to implement interventions in order to improve strategic thinking and measurement of these interventions in the future be conducted.

Conclusion

In this study all managers' strategic thinking level and conceptual thinking dimension were evaluated good and other personnel's strategic thinking dimensions somehow good. And managers and personnel with higher education also had higher strategic thinking score. Our study provides evidence for university managers to recognize dimensions of strategic thinking that needs improving and provides interventions to improve strategic thinking dimensions. According to the findings of this study especially improving systemic thinking, intelligent opportunism and futurism in personnel should be prioritized.

References

- Bidad, K., Farzadi, F., Pourpak, Z. and Moin, M. (2009), "Strategic planning in a health leadership sector: a report from UNESCO chair in health education, Iran", *Iranian Journal of Public Health*, Vol. 38 No. 4, pp. 122-4.
- Bonn, I. (2005), "Improving strategic thinking: a multilevel approach", *Leadership & Organization Development Journal*, Vol. 26 No. 5, pp. 336-54.
- Goldman, E.F. (2008), "The power of work experiences: characteristics critical to developing expertise in strategic thinking", *Human Resource Development Quarterly*, Vol. 19 No. 3, pp. 217-39.
- Goldman, E.F. and Casey, A. (2010), "Building a culture that encourages strategic thinking", *Journal of Leadership & Organizational Studies*, Vol. 17 No. 2, pp. 119-28.
- Heracleous, L. (2003), *Strategy and Organization: Realizing Strategic Management*, Cambridge University Press, Cambridge.
- Jeong, S.H., Lee, T., Kim, I.S., Lee, M.H. and Kim, M.J. (2007), "The effect of nurses' use of the principles of learning organization on organizational effectiveness", *Journal of Advanced Nursing*, Vol. 58 No. 1, pp. 53-62.
- Kapferer, J.-N. (2012), *The New Strategic Brand Management: Advanced Insights and Strategic Thinking*, Kogan Page Publishers, London.
- Karğın, S. and Aktaş, R. (2012), "Strategic thinking skills of accountants during adoption of IFRS and the New Turkish commercial code: a survey from Turkey", *Procedia-Social and Behavioral Sciences*, Vol. 58, pp. 128-37.
- Langley, A. (2007), "Process thinking in strategic organization", *Strategic Organization*, Vol. 5 No. 3, pp. 271-82.
- Lawrence, E. (1999), "Strategic thinking", Public Service Commission of Canada, April 27.
- Liedtka, J.M. (1998), "Strategic thinking: can it be taught?", *Long Range Planning*, Vol. 31 No. 1, pp. 120-29.
- Maroofi, Y. and Karami, Z. (2015), "Providence and futures study: a approach to curriculum development", *International Online Journal of Educational Sciences*, Vol. 7 No. 3, pp. 1-9.
- Moammai, H., Amini, M., Dargahi, H., Mashayekh, M. and Janbozorgi, M. (2013), "Strategic thinking measurement among staff managers of Tehran University of Medical Science", *Journal of Health Administration*, Vol. 16 No. 53, pp. 73-84.
- Pisapia, J., Reyes-Guerra, D. and Coukos-Semmel, E. (2005), "Developing the leader's strategic mindset: establishing the measures", *Leadership Review*, Vol. 5 No. 1, pp. 41-68.
- Pisapia, J., Pang, N.S.-K., Hee, T.F., Lin, Y. and Morris, J.D. (2009), "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*, Vol. 2 No. 2, pp. 46-58.
- Robinson, D.J. (2012), *A Comparative, Holistic, Multiple-Case Study of the Implementation of the Strategic Thinking Protocol® and Traditional Strategic Planning Processes at a Southeastern University*, Florida Atlantic University, Boca Raton, FL.
- Saadati, O., Sayadi, S. and Ahangari, S. (2013), "Study on relation between types of leadership styles with strategic thinking level in managers of public organizations in Kerman", *Journal of Productivity Management*, Vol. 7 No. 26, pp. 69-91.
- Salavati, S., Jahanbani Veshareh, E., Safari, H., Veysian, A. and Amirneghad, G.H. (2017), "Strategic thinking and its related factors in a medical science university in Iran", *Electronic Physician*, Vol. 9 No. 5, pp. 4332-40.
- SCO Iran (2016), *Iran Statistical Yearbook*, Statistical Centre of Iran, Tehran.
- Simon, H.A. (1960), *The New Science of Management Decision*, Prentice-Hall, Englewood Cliffs, NJ.
- Swayne, L.E., Duncan, W.J. and Ginter, P.M. (2012), *Strategic Management of Health Care Organizations*, John Wiley & Sons.
- Van der Laan, L. (2008), "The imperative of strategic foresight to strategic thinking", *Journal of Futures Studies*, Vol. 13 No. 1, pp. 21-42.

Williamson, S. (1997), *Fundamentals of Strategic Planning for Healthcare Organizations*, Psychology Press, New York, NY.

Young, D.W. and Ballarin, E. (2006), "Strategic decision-making in healthcare organizations: it is time to get serious", *The International Journal of Health Planning and Management*, Vol. 21 No. 3, pp. 173-91.

Zuckerman, A.M. (2005), *Healthcare Strategic Planning*, Health Administration Press, Chicago, IL.

Corresponding author

Bakhtiar Piroozi can be contacted at: bpiroozi@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.