

**Review Article**

## **Review on Cybernetic Model Elements Application in Kermanshah University of Medical Science According to Faculty Members Attitudes in 2015**

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### **ABSTRACT**

**Introduction:** Various improvements have been achieved in recent decades in organizations and their environment, process and organizational changes has faced managers present era of change is intense and accelerated Various organizations, including universities, these changes have been brought about by the storm and forced to survive must keep up with those changes and coordinate rapid and unprecedented. In this way, changes in management practices and organizational leadership, is inevitable

**Objective/Aim:** the purpose of this study is reviewing cybernetic model elements application in Kermanshah medical sciences university according to faculty members' attitudes in 2015.

**Materials and Methods:** The research purpose, applications, and the method were descriptive. Data collection method of surveying, using standard questionnaires the population consisted of all faculty members of Kermanshah medical science university, the sample using a sample of 178 respondents. Using software AMOS and spss21 were analyzed

**Results:** The results showed that the Kermanshah medical science university in the use of cybernetic model in organizing their activities, the status is appropriate. The results also indicate that the mentioned university, the tendency is to this model.

**Conclusion:** In conclusion, we can say that the position of cybernetic model in Kermanshah University of Medical Sciences, in all components is desirable.

**Keywords:** cybernetic, control, interactions, connections, Kermanshah university of medical science

### **INTRODUCTION**

Various improvements have been achieved in recent decades in organizations and their environment, process and organizational changes has faced managers present era of change is intense and accelerated Various organizations, including universities, these changes have been brought about by the storm and forced to survive must keep up with those changes and coordinate rapid and unprecedented. In this way, changes in management practices and organizational leadership, is inevitable. Because the traditional methods of management and leadership in today are changing and dynamic, it is inefficacious. Organizers what they want and what they are

likely to change to meet the needs of human society must act very flexible, so that they can come and environment into chaos again. University leaders to compromise or dealing with unknown phenomenon to be able, under which a new model, organizations have to provide the appropriate guidance and requirements tense environment. Today's world system that our association as its ingredients, consciously or unconsciously played a role in the approach. Just having a vision system that communication components and interdependencies better understand the complex and dynamic system. Why that man is now, with different scientific

methods in solving your issues applies, to solve a problem, create a new problem. (1) The term cybernetics concepts reminiscent information, communication and monitoring and control concept feedback loops, make up the core of it. [2] This knowledge with insight and scanning system control method and system settings that are complex in terms of energy exchange with the environment almost closed and the exchange of information between elements of the system is almost open, examined them. The main purpose of cybernetic Find the fastest, most convenient and most effective ways to control and adjust in complex organizations. [3] In other words, knowledge of cybernetic tools to solve problems of socio-economic, biological, medical, humanitarian affairs was considered (4). Cybernetic, science is interdisciplinary in order to study the structure of regulatory systems and control theory and systems theory so closely linked.

Cybernetic, both physical systems and social systems are applicable. When the system under investigation, involved a closed circle of signals intelligence, cybernetic role becomes more prominent. In this case, the system performance can lead to changes in the environment that these changes through signals from or feedback, the system become apparent. This will cause the system behavior in order to adapt to changing environmental conditions. "The causal relationship circular, necessary, and sufficient condition for a cybernetic vision of (5).

On the one hand the relatively open scientific cybernetic systems for the exchange of information between them and their environment have studied and on the other hand, the structure of these systems from the perspective deals with exchange of information between their various elements (6). Many studies suggest that approach, cybernetic, powerful agent for improved management of virtual institutes and the presence of such a model, increases the productivity and organizational effectiveness (7). Cybernetic model for the guidance and supervision of science based

on appropriate feedback and soft and hard links, the development of communication and interaction with the environment and its units within the organization to self-regulation provides (8). Based on this definition, management model, cybernetic, has six components: "Control", "weak links and hard", "monitoring", "interactive", "hierarchy" and "leadership" ((9). In the book *How Universities work* "four Nations University administration has been drawn supposed to represent different models: a) University bureaucratic (structure and rational decision), b) university partnerships (based on the division of power and values in the society), c) political University (competition for power and resources), d) University anarchist (autonomous social actors). [10] Byrne Baum believes that these models are correct, but incomplete and University cybernetic model as a combination of these the merits of the above patterns are patterns suggests. Due to the characteristics and differences of each model, organized by universities due to complex social system, with emphasis on cybernetic supervision is possible. In this model, the university as a system that functions by feedback loops and universities have been strengthened by the structure of vertical and horizontal social system of feedback loops are limited root controlled. The model refers to the characteristics which the system can be more than the other models for organizing academic activities in the new era, used. [11]. Thus, this study seeks to answer the question how is the application of the components of the model at the University of cybernetic?

## METHODOLOGY

The research purpose, applications, and the method were descriptive. Data collection method of surveying, using a standard questionnaire that its validity and reliability by Dadkhah (14) 1 2011 and Deldar et al. (2014) (16) were measured investigation included all faculty members of Kermanshah medical science university, the sample was obtained using

a sample of 178 people, 150 questionnaires returned by using software amos, spss21 Were analyzed.

**RESULTS**

60.7% of men respondents (91 people) and women 39.3 percent (59 persons). In terms of age, 19.6% (N = 29) of respondents in the age

group below 30 years, 56.6% (n = 84) of respondents age group 31 to 40 years, 18.7 percent (n = 28) of respondents in the age group 41 to 50 year and 5.7% (n = 9) were also in the group older than 50 years. 24.1% (n = 36) were single and 75.9% of call conversations (114) were married.

**Table 1:** The relationship between cybernetics and dimensions of the Cybernetics

		Cybernetics	
Spearman rho	Control	R	0.437
		SIG	0.000
		N	150
	Links	R	0.347
		SIG	0.000
		N	150
	Interactions	R	0.374
		SIG	0.000
		N	150
	Decision	R	0.382
		SIG	0.000
		N	150
	Hierarchies	R	0.124
		SIG	0.067
		N	150
Leadership	R	0.335	
	SIG	0.000	
	N	150	

Based on the above table between cybernetics and control aspects, links, interactions, decision-making and leadership using Spearman correlation was significant (SIG = .000) between the correlation coefficient is positive. Also there was no significant relationship between the hierarchy and Cybernetics (SIG = .067)

**Table 2:** the total standardized effects, direct and indirect relationships between the dimensions cybernetics

	Standardized Total Effects	Standardized Direct Effects	Standardized Indirect Effects
	Cybernetics		
Leadership	0.335	0.335	0.000
Hierarchies	0.124	0.124	0.000
Decision	0.382	0.382	0.000
Interactions	0.374	0.374	0.000
Links	0.347	0.347	0.000
control	0.437	0.437	0.000

Based on the above table are equal and direct the overall standard of leadership dimensions, hierarchies, decision making, communication, connectors and controls, respectively 0.335, 0.124, 0.382, 0.374, 0.347 and 0.437 are also standard effects by indirectly to all dimensions was 0.000.

**Table 3:** The final research model parameters are as follows:

Standard model	Acceptable level	Commentary	Result	Acceptance
Chi-square CIMIN	Chi-square value table	Chi-square obtained by chi-square table is compared to determine a degree of freedom	36.50	Acceptance
Root mean square error of estimate (RMSEA)	Younger than 05.	Less than 05. A good fit	0.040	Acceptance
Tucker Lewis TLI	Zero (not fitted) and 1 (perfect fit)	The amount of nearly 95 a good fit	0.070	Relatively acceptable
Chi-square relative CIMIN / DF	1 to 5	Less than 1 indicates a value greater than 5 indicates weakness fit and needs to be improved	36.500	Acceptance
Normalized fit index thrifty PNFI		Above 0.5 or 0.6	0.69	Acceptance
Comparative fit index thrifty PCFI		Above 0.5 or 0.6	0.68	Acceptance
Bonnet Bentley index NFI Or index Fitness Normalized	Compare the model to model without their relationships	Must be greater than 0.9	0.737	Relatively acceptable
RFI	Compare the model to model without their relationships	Must be greater than 0.9	0.610	Relatively acceptable
Incremental Fit Index IFI	Between zero and one	The standard amount is greater than 0.9	0.842	Relatively acceptable

Chi-square = 547.494

Degrees of freedom = 15

Probability level = 0.000

Economy or PRATIO ratio of fit indices considered thrifty and of itself is not an indicator of fitness. . But also indicates that researchers have spent to what extent the definition of free parameters. The index was developed based on the relative degree of freedom to the degree of freedom achieved independence. . A value between zero and one takes and no matter how much smaller it indicates that the researcher has spent more money on free parameters. Often higher amounts of 0.5 for this indicator have seen that the rate is 0.714. Indicators of AIC, MECVI, BCC ECVA, to determine the most graceful model of multi-model used is a model that has the least amount considered as a more graceful model. In this experiment, respectively .494.57, 0.25, 2.707, 2.714 2.707, which ECVA to rate as the most efficient model.

**Table 4:** T-test results, the use of cybernetic model components in the administration of Kermanshah University of Medical Sciences from the viewpoint of faculty members

	Mean	Std. Deviation	t	Sig. (2-tailed)
control	69.2	21.3	47.9	0.000
Links	38.1	5.8	96.2	0.000
Interactions	24.4	6.4	55.9	0.000
Decision	41.6	10.5	58.3	0.000
Hierarchies	25.1	6.5	56.3	0.000
Leadership	33.4	8.1	60.5	0.000

According to the results of the above table should be said that after a mean  $\pm$  SD of control (69.2  $\pm$  21.3) and 47.9 univariate t-test was significant (SIG = .000). For this reason, it can be said that in

view of cybernetics faculty of pattern after a mean  $\pm$  SD of normal controls (38.1  $\pm$  5.8) and the T = 96.2 was statistically significant (SIG = .000). Thus we can say that the perspective of

cybernetics faculty of pattern in the desired links has been. Interaction with the mean and standard deviation ( $24.4 \pm 6.4$ ) and the  $T = 55.9$  was statistically significant ( $SIG = .000$ ) so it can be said that the attitude of the faculty of cybernetics pattern of interaction is desirable. After deciding the mean and standard deviation ( $41.6 \pm 10.5$ ) and the  $T = 58.3$  was statistically significant ( $SIG = 0.000$ ) so it can be said that the attitude of the faculty of cybernetics pattern after the decision has been favorable. Then the hierarchy of the mean and standard deviation ( $25.1 \pm 6.5$ ) and the  $T = 56.3$  was statistically significant ( $SIG = 0.000$ ) so it can be said that the attitude of the faculty of cybernetics pattern of the hierarchy has been favorable. After leading the mean and standard deviation ( $23.4 \pm 8.1$ ) and the  $T = 60.5$  was statistically significant ( $SIG = 0.000$ ) so it can be said that the attitude of the faculty of cybernetics model of leadership is desirable.

#### **DISCUSSION AND CONCLUSION**

Results of the implementation of cybernetic pattern in the administration of Kermanshah University of Medical Sciences showed that The faculty members at the University of Cybernetic Model are implemented. Results of the components of the survey also showed that all components are in good condition at the University. (After 2010) in a study as (cybernetic organization represents: in management and leadership "to investigate the cybernetic strategic organizational leadership and management, and also the circumstances that are not compatible with the surrounding environment explains the organization. Studies show that the management and leadership of key processes in the organizational environment and these two requirements in order to survive mutual compatibility. In addition, organizations need to develop their leadership and management in the balance. His management and leadership duopoly beating heart cybernetic organization knows (12). The results Hashem Beyk, Siyadat, and Hoveida, sovereignty university in 2012 showed that the rate of use of cybernetic model active in

organizing their STI policies, the appropriate position. The results also indicate that the universities which tend to this model, and the tendency have been linked to the component hierarchy with a mean 3.66 (13) which are consistent with our results. results of the study Dadkhah (2011) showed that physical education department of Isfahan province in the use of cybernetic model in organizing their activities, and the situation is relatively good position in the field of monitoring component (mean 3.5) are used more than others (14). The findings Bazrafshan (2007) show that the status of cybernetic model in the management of Ferdowsi University of Mashhad, in three components: (decision), (control) and (leaders), the situation is relatively favorable (15) The findings of the study Deldar et al. (2014) showed that the Office of Youth and Sports Hamadan and Qom provinces have better performance in the use of cybernetic pattern of poor performance of the Department of North Khorasan (16). Check the status of the control component, based on cybernetic model in Kermanshah University of Medical Sciences showed that the monitoring and control of faculty members at the university there mentioned is based on the cybernetic model. The level of Kermanshah University of Medical Sciences there. The results of the weak links and hard in Kermanshah University of Medical Sciences based on the model presented in cybernetic showed loose connections and hardware components is performed properly. In other words, such things as partners in the implementation of joint projects with external units, cooperation in education and research with other universities, creating understanding in opinions between the groups, to facilitate the creation cooperation between the educational staff, on interpersonal and intergroup interactions and communication between different units and departments at the University is carried out. Findings of the interactions in Kermanshah University of Medical Sciences showed the viewpoint of faculty members at the University of Interaction there. In other words, the emphasis on

such matters as academic links with external units. The results of the decision based on the cybernetic model in Kermanshah University of Medical Sciences showed the viewpoint of faculty members of the university's decision is appropriate. In other words, when such decisions on the basis of predetermined steps, determine necessary measures to deal with environmental challenges, to gather information before deciding, independent decision-making in the range of its duties, managers, decision-making transparent, solve immediate issues at the University of ancillary units, multiple resources and decision-making authority and the discretion of each other and the opinions of others to decide, from the viewpoint of faculty members at the university there.

Results regarding leadership position in Kermanshah medical Science University based on cybernetic, showed that from the viewpoint of faculty members are based on the model of leadership. Available in current activities, according to the processes that lead to the spread of information and guidance in university activities through continuous improvement in the university system, including those employed by university managers implemented. The results of a hierarchy based on cybernetic model in Kermanshah University of Medical Sciences showed that this component will be implemented in universities based on cybernetic model. In other words, the hierarchy of items such as specifying the responsibilities of each individual in the process of organizational hierarchy, headed by executive director responsibilities in subsidiaries, sub-divided into mainstream paragraph achieving the goals of the university, by some of the recognized adverse events and report higher levels of organization, specialization of tasks and jobs, the division of the University into smaller units, and higher levels of supervision over sub-sectors are followed and hierarchy at the University of cybernetic pattern is set. In total, according to the findings of this study we can conclude that the casting position cybernetic model in the

management of Kermanshah University of Medical Sciences, in all components is desirable

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