

# Study of the Relationship between Chaos Management and Philosophical Mindsets in Shahrekord Educational Managers

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## ABSTRACT

This paper seeks to examine the relationship between chaos management and philosophical mindsets. The design was a descriptive and has been done with functional objective and correlation is methodology. Population was all of Shahrekord educational managers (125) who 99 was selected using Cochran formula and category method and the necessity data was used according to the questionnaire which its validity was confirmed using content based, reliability is estimated using Cronbach's alpha to 95% and 84%. The correlation and T-test was used to analyze the data. The findings show there is a significant relationship between philosophical mindsets and chaos management of educational managers in Shahrekord ( $P < 0.05$ ). Philosophical mindsets and chaos management of educational managers was higher than mean. There is a significant relationship between philosophical mindsets, butterfly effect, organizational dynamic, ..., and strange attractions ( $P < 0.05$ ).

**KEYWORDS:** philosophical mindsets, chaos management, educational managers, Shahrekord city.

## 1. INTRODUCTION

We live in an age which complexity is an integral component. Complexity is decisive factor whether in natural phenomenon or man-made phenomena then we must understand complexity to face today world and know encounter it for this reason, we need to approach that is different from conventional methods (Alvani, 1995). Recently and from 1965, chaos theory introduce by Edvard Lorenz in the aerology and change it as knowledge and experimental, math, ethical, social and managerial courses and has been unvalued some of the previous data and provide basis of fundamental changes in sciences specially aerology, planetary, mechanical, physics, math, biology, economy. The emergence of chaos theory in different fields of science is in the same direction that the systematic approach enter it in the some years ago while the theory is based on the system vision. By entering this theory in the management issues it can speak about the science of management far more strongly in the future (Qadami, 1999). We have to have a real meaning and total picture from the concept of chaos at the first time. Chaos is means of clutter and disorder and in the mechanics is synonymous of turbulence. This term means the absence of any structure or order; this new science is complexity theory, nonlinear dynamics or order theory in the disorder (Qadami, 1999). Chaos theory or ultimate order give us problem solving tool in the turbulent and full of change in that today and tomorrow. It is chaotic because the outcome is unpredictable and ordered because it has certainty. Generally, chaos refers to a situation or condition that is seen in some complex systems. Since chaos or disorder theory are set of mathematical techniques which lead to we solve nonlinear problems which don't have no clear solutions. Chaos Theory is not a rule or definitive law but it is a scientific approach to issues that have until recently been totally abandoned and were not analyzed. Chaos theory has several features that we mentioned:

1. Systems that are analyzed using chaos theory have a non-linear relationships.
2. Each part of the model is similar to whole in the chaos theory. This property called "self-similarity".
3. Another important feature is "the Butterfly Effect", i.e. a slight change in the initial conditions leads to drastic changes in the results.

However, traditionally a partly change would lead to small changes in the results (Alvani, 1995).

Another chaos theory feature is strange attraction. The term of attraction drive observations which a system in space in closely related to attractive factor take under its influence after a while and take the mode. In this order, dynamic systems are going to be moving in each directions until reach to attraction point. Chaos theory help us to study and investigate complex systems and provide a realistic solution to today's problems by given the uncertainty and probability principles. Management course can use chaos theory and many organizational problems due to the impossibility of predicting the organizational

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behaviors will disappear. Chaos theory is helpful in the process of organizational performance because we see a partial and banal act that will cause major upheaval and chaos in organizations which is the signs of the chaotic activities and functions of the organization (sensitivity index to initial minor changes) and it clearly apparent the necessity of use of chaos theory to organizational studies. By helping the chaos theory, education can organizes the structure which by chaotic and random apparent follow strange attraction patterns. And naturally is consistent with their environment. New organizational structures also need to "self-similarity" and naturally, in the absence of a part, other parts are used to achieve objectives.

And it would not be feasible unless Chaos Theory explain organizational structures, Chaos theory is widely applied in decision making. Decision-makers are often faced with an environment that has the complexity properties and cannot be interpreted and analyzed decision-making theories. In such a situation, chaos theory can help to analyze environmental factors and give to true solution realistically (Moqimi, 2007). Since present era is the era of complexity, thus management of this ambiguous space requires tremendous skill, logical thinking is the one of these skills that are necessary to develop the tools. One of these tools is that the philosophical mind helps in logical thinking. Philosophical mind that so-called philosophical thought (Sharafi, 2002) defined by Philip John Smith in the first time.

He refer to philosophical mind as three dimensions and few signs which are as follows:

1. *Integrity*: in this aspect, special items on the extensive field has been related by manager, he try to see the big picture; It also helps in dealing with legal issues related to the basic objectives or goals to achieve in the future they may consider. Mental integrity strives to provide generalizable theories; but such theories don't derive from detail study and collection of the common characteristics but general rule has made by examining several cases which describe all aspects of this state broadly, finally, show tolerance to different opinion.
2. *Pondering*: manager with the philosophical mind, ask about matters that will be granted to others. And profound aspects of the fundamental issues and defines in every theory, the principles. By the way, he/she extract intangible things and sensitive to the relationship and use inductive theory rather than deductive method in the pondering. So, he/she explain theory by one or some cases in certain circumstances, the general assumption theory generalize to same cases.
3. *Flexibility*: Symptoms of this field include aspects of the philosophical mind are following; the manager does not have the psychological rigidity, he/she will be evaluated ideas without being influenced by their resources. Examine issues from multiple directions and make a distinction between the contradictory. All of caution aspects has been respect and avoid of conclusive ideas in the judgment. (Shariatmadari, 2008).

Philosophical mindset of managers is philosophical insight in think about problems, mentality, or how they deal with issues and trends, and characteristics of his thought which appear in the different aspects of behavior (Shariatmadari, 1999). Prerequisite of the management in turbulent times is true thinking for guide by the principles. In planning, managers must identify all organizational elements and overall goals and specific objectives related to it until overall goal will not lose. Indeed the philosophical mind in the managers help them to thinking (Saif Hashemi, 2003). Smith (1990) argues comprehensive insight, pondering and flexibility enables administrators to avoid self- oriented (egoism) and thinking rigidity and they enable to appropriate identify and management principles and lead to managers overcome the difficulties by new approaches and to be guided in the right direction (Zaki, 1999). If managers are familiar with logical thinking, mentality and philosophical thinking will be effective in improving the quality of manager acting. They are capable to communicate, predict the behavior and allows them to offer creative ideas (Hashemi, 1993). According to what was said, manager would to upgrade their thinking and mental models to help manage organizations in the complex situations. This study seeks to evaluate the characteristics of the philosophical mind and chaos management in the educational managers and also, investigate effects of each philosophical mindset aspects on chaotic management features.

## 2. BACKGROUND

By investigating this topic we found that several studies have been done on the subject and some of them will be presented.

Hashemi(1993) investigate "the effect of philosophical mindset aspects in managers on how to perform administrative tasks in schools Mamasani" and concluded that managers with high philosophical mindset showed better performance on tasks of management than managers with low philosophical mindset. Bandalizadeh (1997) concluded there is relationship between philosophical mind and their performance but there is not a significant difference between age, gender and field of study and philosophical mindset in managers. Khandani and KomeiliAsl (2000) found there is a relationship

between philosophical mindset and practice of managers. Managers who have philosophically minded able to perform administrative tasks perfectly. Qolipour Zahir & Tavakili (2000) showed there is a significant relationship between the philosophical mindset of managers and teacher performance by 95% confidence level and 381% correlation coefficient. Arvani (2002) concluded there is a direct relationship between each of the philosophical mindset aspects and managers' performance. Qadami (2004) found that by stable governance and management in most Iranian organizations and companies, including six companies selected (Dana Insurance, Iran Insurance, Airline of the Islamic Republic of Iran, Keshavarzi Bank, Melli Bank, Iran Khodro) regardless of the degree of effectiveness organization, more than 55% managers attend to change management and according to order in chaos theory have demonstrated it, as well as 38% of managers enjoy from establishment of collaborative management, only about 7% of Iranian managers were interested to sustainability management system. Talebpour et al. (2005) found that managers, trainers and supervisors are moderate in terms of the philosophical mindset. Thus, in comparison of three groups was found that managers have high philosophical mindset. Khazaiee (2005) concluded there is a direct relation between philosophical mindset of educational administrators and amount of using the participation of teachers. Mohammadi (2005) show that managers who use participatory decision-making style have significantly the philosophical mind than managers who using autocratic style. Amin Bidokhti et al. (2006) showed that there is a direct relationship between the philosophical mentality and creative directors. Yazd Khasti & Rezaie Kia (2006) found that the philosophy mindset in managers is not associated with any of their functions. No significant differences were observed between manager performance and the philosophy of mind level (low and high). Mehr Alizadeh et al. (2006) found that educational management in Chaos theory framework and organizational entrepreneurship can be cause of significant changes in the educational institutions and entrepreneurship. Etebarian (2008) showed that the orientation to organizational change is one of the main aspects of applying chaos theory change within organizations. Amin Bidokhti (2008) concluded there is positive, direct and significant relationship between creativity and philosophical mindset aspects of Sanandaj school administrators. Keijazadeh Nejad (2008) showed there is a significant relationship between philosophical mindset of managers and task management. Damarchili & RasoulNajad (2008) showed there is a philosophical mindset and creativity level of professors as well as, there is a significant relationship between integrity, pondering and flexibility. Nourzadeh (2009) showed there is a significant relationship between philosophical mindset of managers and each of its aspects and managers who tend to change, development and progress. Larvani (2010) concluded there is a significant relationship between all aspects of the philosophical mindset including pondering, integrity and flexibility and Performance Management. Hadizadeh Moqadam et al. (2010) demonstrated that examples of chaos theory, attributes, skills and leadership roles will be different from other managers and one of the skills is having pattern intellectual and thinking. Shirzad Khan (2010) showed that open borders to the external developments and changes and complex interactions will increase using of chaos theory. Ismailian (2012) refer to Uncertainty and predictable processes that govern the classroom as the most important applications of chaos theory in educational management. Moazami et al. (2013) showed there is a significant relationship between philosophical mindset and increasing employee creativity. PordanjaniMoradi et al (2013) found that the philosophical mindset has significant impact on advancement, independence, creativity, risk-taking, managers control center and management experiments of manager which moderating their entrepreneurial orientations. Mirzazadeh et al. (2014) found that Chaos management in organizations is in significantly moderate level. As there is no significant relationship between chaos management aspect amount and importance these, we can say director of physical education for decision-making, improve quality and etc. not apply benefits and positive effects of chaos management skills. Smith (1990) showed there is a direct relationship between good human relations, philosophical mindset of managers, managers' creativity and staff morale. In this study, although there is no significant difference between age, years of service and education of managers and philosophical mindset, difference between the mean scores of the two groups of males and females was about creative. The teachers in this study reported that easier to reach an agreement with managers who have philosophical mindset. Stacey (1998) argued there is an essential tension between balance and change, efficacy and self-organization property in learning organizations and studies shows chaos theory relations and organization learning. Box (2003) suggests that managers should strive for a creative job in any situation in learning organizations with high entropy. Friedman (2008) in his study "manager's decision on change and its relationship with the philosophical mindset" showed that decision of managers is more effective to make change processes that have been higher Philosophical mindset. Levant (2009) showed that the application of chaos theory lead to team practice development. Grimm (2009) in his study "organizational management and change based on the philosophy mindset of managers Concludes that it cannot completely act successful without a manager

with a high level of philosophical mindset because implementation of this change depends on management's ability to deal with staff to make changes, and this is possible due to having high philosophical mindset. William (2010) in his study "change Management and philosophical approaches of managers concluded there is direct and positive relationship between Integrity, pondering and flexibility and change in organization successfully. He refer to change accept and its processes by staff. In this article 8 hypothesis was tested based on the theoretical framework and object background:

1. Philosophical mindset in educational managers were higher than mean.
2. Management chaos is higher than mean in educational managers.
3. There is a significant relationship between the philosophical mindset and chaos management (general).
4. There is significant relationship between the philosophical mindset (general) and butterfly effect (one of the chaos management features).
5. There is significant relationship between the philosophical mindset (general) and self- similarity (one of the chaos management features).
6. There is significant relationship between the philosophical mindset (general) and dynamic adjustment (one of the chaos management features).
7. There is significant relationship between the philosophical mindset (general) and strange attractive (one of the chaos management features).
8. There is significant relationship between the philosophical mindset and chaos management of Shahrekord educational managers.

### 3. METHODOLOGY

The methodology is descriptive- correlational type that examine relationship between philosophical mind and Chaos management.

In this research, philosophical mind is as predictive variable and chaos management aspects are as criterion variable. Population was all of educational managers of Shahrekord (125) who 99 was selected using Cochran formula and category method and the necessity data was used according to the philosophical mindset Questionnaire of 15 questions from Smith (1990), chaos management Questionnaire of 32 questions from Mirzazadeh et al (1393) which validity was confirmed by experts and professors of management group.

The reliability of the standard questionnaires was determined using Cronbach's alpha, first 99 questionnaires completed by educational managers and if after obtaining the Cronbach's alpha for each of the indicators this value be greater than 0.70 The instrument is valid; the Cronbach alpha in philosophical mindset and chaos management questionnaire was to the reliability of 0.84, 0.95 that in based on current source has high reliability.

#### Findings

In this study, T-Test was used for analysis of research data (hypothesis 1 and 2) and correlation coefficient test was used for hypotheses 3 to 7. In addition, all statistical calculations are performed using SPSS statistical software. Following the hypothesis test results are proposed:

**Hypothesis 1:** The philosophical mindset of educational managers was higher than mean.

Hypothesis 1 results show that philosophical mindset of educational managers was higher than standard mean and there are 3 significant differences between philosophical mindset of educational managers and standard mean. ( $P < 0.05$ ). Also results show that:

- Educational managers' integrity was higher than standard mean and there are 3 significant differences between philosophical mindset of educational managers (integrity) and standard mean. ( $P < 0.05$ ).
- Educational managers' pondering was higher than standard mean and there are 3 significant differences between philosophical mindset of educational managers (pondering) and standard mean. ( $P < 0.05$ ).
- Educational managers' flexibility was higher than standard mean and there are 3 significant differences between philosophical mindset of educational managers (flexibility) and standard mean. ( $P < 0.05$ ).

**Hypothesis 2:** Chaos management is higher than mean in the educational managers and there are 3 significant differences between philosophical mindset of educational managers and standard mean. ( $P < 0.05$ ). Also results show that:

- The Butterfly Effect in the educational managers was higher than standard mean and there are 3 significant differences between chaos management of educational managers (Butterfly Effect) and standard mean. ( $P < 0.05$ ).
- Organizational dynamics in the educational managers was higher than standard mean and there are 3 significant differences between chaos management of educational managers (Organizational dynamics) and standard mean. ( $P < 0.05$ ).
- Self- similarity in the educational managers was higher than standard mean and there are 3 significant differences between chaos management of educational managers (Self- similarity) and standard mean. ( $P < 0.05$ ).
- Strange attractions in the educational managers was higher than standard mean and there is 3 significant differences between chaos management of educational managers (Strange attractions) and standard mean. ( $P < 0.05$ ).

Table 1 shows the results of significance tests of hypotheses 1 and 2.

Table 1: Results of the test hypotheses 1 and 2

| Variable                     | Component           | Mean   | Test statistic | Standard mean | Significant level |
|------------------------------|---------------------|--------|----------------|---------------|-------------------|
| <b>Philosophical mindset</b> | Integrity           | 4.0424 | 21.840         | 3             | 0.000             |
|                              | Pondering           | 3.6869 | 12.483         | 3             | 0.000             |
|                              | Flexibility         | 3.8222 | 15.031         | 3             | 0.000             |
|                              | Total               | 3.8505 | 19.383         | 3             | 0.000             |
| <b>Chaos management</b>      | Butterfly effect    | 3.9775 | 18.032         | 3             | 0.000             |
|                              | Dynamic adaptation  | 4.0556 | 16.177         | 3             | 0.000             |
|                              | Self- similarity    | 3.9764 | 14.169         | 3             | 0.000             |
|                              | Strange attractions | 3.9764 | 14.138         | 3             | 0.000             |
|                              | Total               | 4.0085 |                |               |                   |

**Hypothesis 3:** there is a significant relationship between philosophical mindset and chaos management of Shahrekord educational managers. The results showed that:

- There is a significant relationship between chaos management by 0.48 coefficient and integrity.
- There is a significant relationship between chaos management by 0.48 coefficient and pondering.
- There is a significant relationship between chaos management by 0.45 coefficient and flexibility.

Table 2: Correlation coefficient: philosophical mindset aspects and management.

| Variable           | Correlation coefficient | Significant level |
|--------------------|-------------------------|-------------------|
| <b>Integrity</b>   | 0.48                    | 0.000             |
| <b>Pondering</b>   | 0.48                    | 0.000             |
| <b>Flexibility</b> | 0.45                    | 0.000             |

**Hypothesis 4:** there is a significant relationship between philosophical mindset of educational managers and butterfly effect.

Hypothesis test results show that this test has significant positive correlation between philosophical mindset of educational managers and butterfly effect by  $r=0.49$  and significant level  $P=0.000$  so, forth hypothesis is confirmed. ( $P < 0.05$ )

**Hypothesis 5:** there is a significant relationship between philosophical mindset of educational managers and dynamic adaptation.

Hypothesis test results show that this test has significant positive correlation between philosophical mindset of educational managers and organizational dynamic effect by  $r=0.49$  and significant level  $P=0.000$  so, fifth hypothesis is confirmed. ( $P < 0.05$ ).

**Hypothesis 6:** there is a significant relationship between philosophical mindset of educational managers and self- similarity.

Hypothesis test results show that this test has significant positive correlation between philosophical mindset of educational managers and self- similarity effect by  $r=0.47$  and significant level  $P=0.000$  so, fifth hypothesis is confirmed. ( $P < 0.05$ ).

**Hypothesis 7:** there is a significant relationship between philosophical mindset of educational managers and strange attraction.

Hypothesis test results show that this test has significant positive correlation between philosophical mindset of educational managers and strange attraction by  $r=0.44$  and significant level  $P=0.000$  so, seventh hypothesis is confirmed. ( $P < 0.05$ ).

Table 3: The relationship between philosophical mindset and every aspect of chaos management.

| Variable              | Chaos management characterizes. | Correlation coefficient | Significance level |
|-----------------------|---------------------------------|-------------------------|--------------------|
| philosophical mindset | Butterfly effect                | 0.49                    | 0.000              |
|                       | Dynamic adaption                | 0.49                    | 0.000              |
|                       | Self-similarity                 | 0.47                    | 0.000              |
|                       | Strange attraction              | 0.44                    | 0.000              |

**Hypothesis 8:** there is a significant relationship between philosophical mindset of managers (general) and chaos management (general) in the Shahrekord educational managers.

Hypothesis test results show that this test has significant positive correlation between philosophical mindset of educational managers and chaos management by  $r=0.57$  and significant level  $P=0.000$  so, eighth hypothesis is confirmed. ( $P<0.05$ ).

Table 4: The correlation coefficient test between philosophical mindset of managers (general) and chaos management (general).

| Variable                          | Chaos management in managers |                    |
|-----------------------------------|------------------------------|--------------------|
|                                   | Correlation coefficient      | Significance level |
| Philosophical mindset in managers | 0.57                         | 0.000              |

#### 4. DISCUSSION AND CONCLUSION

This study examine relationship between philosophical mindset and chaos management, the following hypotheses were tested and the results are presented below.

In H1 results showed that philosophical mindset in educational managers was higher than mean. Results of One sample T-Test show that philosophical mindset in educational managers was higher than mean and there are 3 significant differences between philosophical mindset in Shahrekord educational managers and standard mean ( $P<0.05$ ). William (2010) in his study "change Management and philosophical approaches of managers concluded there is direct and positive relationship between Integrity, pondering and flexibility and change in organization successfully; he refer to change accept and its processes by staff. Hadizadeh Moqadam et al. (2010) demonstrated that examples of chaos theory, attributes, skills and leadership roles will be different from other managers and one of the skills is having pattern intellectual and thinking. Nourizadeh (2009) showed there is a significant relationship between philosophical mindset of managers and each of its aspects and managers who tend to change, development and progress. This results consistent with Williams (2010), Hadizadeh Moqaddam et al (2010) and Nourizadeh (2009).

In H2 results showed that chaos management in educational managers was higher than mean. There are 3 significant differences between chaos management in Shahrekord educational managers and standard mean ( $P<0.05$ ) and the second sub-hypothesis is confirmed ( $P<0.05$ ).

Mirzazadeh et al (2014) found that Chaos management in organizations is in significantly moderate level. As there is no significant relationship between chaos management aspect amount and importance these, we can say director of physical education for decision-making, improve quality and etc. not apply benefits and positive effects of chaos management skills. This results consistent with Mirzazadeh et al (2014) and confirm each other.

In H3, there is a significant and positive relationship between philosophical mindset of managers and butterfly effect (one of the chaos management features) by  $r=0.49$  and significant level  $P=0.000$  and sub-hypothetic standard mean ( $P<0.05$ ) and the third sub-hypothesis is confirmed ( $P<0.05$ ). So, Butterfly Effect can be an example of public participation in the activities. The organization which can use of key point (i.e. people tend) and invited them to participate in its activities, will be able to done great movements by this lever. Thus, the traditional thinking is formed by the order and symmetry default in the affairs and based on partial data, will form minor changes which has no place in the chaos and disorder paradigm and so, a small movement can formed general stimulation according to this theory. Causation incoming or outgoing in nonlinear systems are not equal and if incoming increase as linear, outgoing does not increase linearly too. "Sensitivity to initial conditions" is another means of the butterfly effect. In this context, Lorenz (2003) argued the butterfly effect, he said that may a butterfly flapping in Beijing, been cause of a storm in New York. This theory carries the message that "you don't need to complex tools and device for major changes, but you must find the critical and determinant points then by apply a small change guide this organization to major changes". So, our results and Lorenz (2003) have perfect consistent.

In H4, there is a significant and positive relationship between philosophical mindset of managers and organizational dynamic effect (one of the chaos management features) by  $r=0.49$  and significant level  $P=0.000$  and forth sub-hypothesis is confirmed ( $P<0.05$ ).

Since Qadami (2004) found that by stable governance and management in most Iranian organizations and companies, including six companies selected (Dana Insurance, Iran Insurance, Airline of the Islamic Republic of Iran, Keshavarzi Bank, Melli Bank, Irankhodro) regardless of the degree of effectiveness organization, more than 55% managers attend to change management and according to order in chaos theory have demonstrated it, as well as 38% of managers enjoy from establishment of collaborative management, only about 7% of Iranian managers were interested to sustainability management system; these results and research findings are equivalence and confirmed each other. Box (2003) suggests that managers should strive for a creative job in any situation in learning organizations with high entropy. These results and research findings are equivalence and confirmed each other.

In H5, there is a significant and positive relationship between philosophical mindset of managers and self-similarity effect (one of the chaos management features) by  $r=0.49$  and significant level  $P=0.000$  and fifth sub-hypothesis is confirmed ( $P<0.05$ ).

Stacey (1998) who argued there is an essential tension between balance and change, efficacy and self-organization property in learning organizations and studies shows chaos theory relations and organization learning; her results and the research finding are consistence.

In H6, there is a significant and positive relationship between philosophical mindset of managers and strange attractions effect (one of the chaos management features) by  $r=0.44$  and significant level  $P=0.000$  and sixth sub-hypothesis is confirmed ( $P<0.05$ ).

Levant (2009) showed that the application of chaos theory lead to team practice development; his results are consistence with the research findings.

In latter hypothesis, there is a significant and positive relationship between philosophical mindset of managers and chaos management (one of the chaos management features) by  $r=0.57$  and significant level  $P=0.000$  and basic hypothesis in this research is confirmed ( $P<0.05$ ).

William (2010) in his study "change Management and philosophical approaches of managers concluded there is direct and positive relationship between Integrity, pondering and flexibility and change in organization successfully. He refer to change accept and its processes by staff. Friedman (2008) in his study "manager's decision on change and its relationship with the philosophical mindset" showed that decision of managers is more effective to make change processes that have been higher Philosophical mindset. Shirzad Khan (2010) showed that open borders to the external developments and changes and complex interactions will increase using of chaos theory. Ismailian (2012) refer to Uncertainty and predictable processes that govern the classroom as the most important applications of chaos theory in educational management. These results are consistence with the research findings and confirm each other.

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