



## INVESTIGATING THE RELATIONSHIP BETWEEN PREFERRED LEARNING STYLES AND THE AMOUNT OF INNOVATION AMONG UNIVERSITY STUDENTS

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### ABSTRACT

*This survey has been prepared in order to investigate the relationship between preferred thinking styles and tendency of higher education students toward innovation. This is a descriptive-correlative survey and its population consists of 90 persons from thirteen majors of M.A in Islamic Azad University, Kermanshah branch so that it has been done via classified-random sampling method. The tools used in survey included thinking styles questionnaire by Sternberg Wagner to determine preferred thinking styles and researcher based questionnaire of Students innovation amount. Analysis of collected data was performed by statistical methods such as (Mean and Average) and referential statistics tests such as (Pearson correlation and multiple step to step regression). The results show that there is a significant and positive relation between styles of legislative, executive, judicial, local, internal and liberal with tendency toward innovation and there is a significant and negative relation between conservative thinking method and innovation. Most of the correlation was related to liberal thinking style (0/451) and the least correlation was related to monarchic thinking style (0/025). The results of this survey are in accordance with previous surveys regarding the relationship between thinking styles and innovation. Therefore, it is a suggestion for universities and higher education universities to guide and encourage students toward innovation through devising methods and curriculums suitable for students. Also, it is suggested to use their tendency to employing in innovation-oriented environments as much as possible.*

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**Keywords:** Preferred thinking styles, Tendency toward innovation, The relation between thinking style and innovation.

**JEL Codes:** C11, J12

## 1. INTRODUCTION

Arriving modern era and forming of dynamic societies, change and revolution has become the common point of the time. Each day, tools and new means are made in different sections and they are distributed in society through some processes. Some methods, means and ideas distribute soon and some distribute slowly, some of which change during progress and are used in another way and some fail (Hassani, 2006). Innovation is what can be consistent and progressed. Due to its relation with flexibility and production, innovation is important for all individuals, organizations and altogether, for all societies. Human beings civilization is due to their creative thinking as well as their tendency toward innovation its consistency is impossible when innovation or creativity is not used because it is considered as their eminent performance. In present situation, innovation or creativity is not only a necessity but also a prerequisite for survival. Therefore, it is necessary for educational system to emphasize on training and education of people can solve unpredictable affairs in a creative way quoted by Kazemi and Jafari (2008). Kerr & Gagliardi believe that innovation or creativity is considered as an important factor in all aspect. That is why innovation is a paramount factor for organizations' survival in current competitive environment (Niknami *et al.*, 2009). As Peter Dracker also believes in a world wherein change and manipulating can be seen and its immunity gets in danger, the only way is creativity or innovation. Increased amount of economic growth, improvement of efficiency and technology production, novel goods and services are considered as of benefits of innovation and creativity is also quoted by James Stone (Husseini and Sadeghi, 2012). people's innovation is originated from their tendency toward that. If someone does not have a good attitude toward innovation, they cannot make good creative. that people who have background in innovation can adopt it before those who do not any innovation heritage (Rahimidoost and Razavi, 2006). Therefore, recognizing innovative people is possible through their tendency toward creativity and innovation. Although making novel ideas in relation with recognition domains is developing, but making new ideas is not only restricted to recognition processes. Some other factors such as motivation, personality features, knowledge , environment and spirit or the dominant thinking of an era are the effective factor regarding creative talent. Creative ideas of students with higher education have been reflected in their surveys and they have caused principal changes in different aspects of life (Hassani and Ahmadi, 2007).

Individuals' preferred thinking style is considered as affairs related to innovation and tendency toward that. "thinking consists of the ability to use comprehension, imagination and recognition to attain a result; thinking is a process in that person tries to show the problem to which he/she encounters and to solve it using their previous experiences (Nazem, 2009). Therefore, one can thinking style can be taken for granted as the preferred thinking style that defines this issue that what happens in our lives is not only related to thinking well but also to the way of our thinking (Hussein zadeh *et al.*, 2008). Thinking styles is a commonplace concept for structures such as recognition, learning and thinking styles that refer to best chosen ways by people to use their mental ability. For more than half of a century, people have investigated the role of thinking styles in human behavior and performance in both scientific and non-scientific environments (the same resource, p 37). Believes that preferred thinking styles are different from each other in different education grades and this is due to this reason that in different education grades, specific styles are

desired and encouraged. By getting older and entering students to university atmospheres, the rewarding and punishment system of styles change. In most of universities and majors such as psychology (the U.S), Junior students are somewhat encouraged to executive, local and conservative styles whereas in case of sophomore and senior students of university, judicial style is more important than executive one. When students reach higher supplementary studding, they will be encouraged for more creative ideas. It means legislative style will be more important than other styles, although executive style will be encouraged too. As a result, generally students in higher educational periods in comparison with students in lower periods, they will be more legislative and liberal. (Emamipoor and Seif, 2003).

In educational base, it is common that one of students in comparison with other one with same educational ability, he or she experiences failure. Because of personal differences in educational function, there are various reasons to justify this phenomenon. Students with same educational ability may use their abilities in different methods and in various conditions. Style, as a difference's variable, caused researchers to think about for a long time. Similarity between thinking's preferred methods and abilities caused an increased power that is more than its general components. So, people who be imagined that they can't do special task or job, it may be not because of lack of ability, but their preferred thinking's style may not be similar with whom they evaluate it. Goodness or badness of thinking's preferred methods is relative. Thinking's preferred methods help person to understand why some activities are suitable and some not (Haghighatjoo *et al.*, 2009). Preferred thinking's styles can be one of main points to success. Preferred thinking's method, aware us from our abilities and give us proper decision opportunities in different life's stages. People want to use their abilities in various ways and based on their preferred thinking's style and give proper answers based on their thinking. (Hussein zadeh *et al.*, 2008). Preferred methods of thinking's use in people have special importance but unfortunately because of unfamiliarity and unconsciousness about thinking styles meaning, these styles will be pay attention to more less than what it must be and people's function is preferred to pay attention to. Because thinking's styles and preferred thinking's methods is different in people, naturally functions and abilities of anyone based on his/her preferred thinking ,will be different. So to know thinking's styles meaning give special importance to people and understanding relation between those styles with abilities too. For example, person with legislative thinking style can have high efficiency in innovation, invention and detection. People with judicial dominance method if get in environmental and cultural condition, definitely they will be successful in evaluation and judgment. Other preferred thinking's styles have special place among people. (Same source, p 136). Whether there will be significant difference between statistics' society students in preferred thinking methods with innovative tendency or not, is the topic of this article and it will be tried to be specified that whether there is significant difference between any thinking styles among students and tendency to innovative in them or not? May be in this way, there will be innovative tendency and further study in related courses with this feature in students and to use them in places that their innovative can caused changes and in this way, creativity be regarded in new window and in scientific form. In other way, to recognize relation between any thinking styles with innovative to tendency, learning process can be guided in relation with related style in innovative way.

Thinking's preferred methods and its relation with human's other features, was a top for most of researchers for their researches. In most of performed researches, relation between thinking's preferred various methods and creativity, has been proven. [Emamipoor and Seif \(2003\)](#) in a research surveyed students' thinking styles and their relation with creativity and educational progress and they state that there is significant differences between thinking's styles and creativity, in a way that free thinking style with creativity's and conservative thinking method and creativity's decrease, has meaningful relation. in a research called (Do progress's motivation and thinking styles are depend to each other?),they concluded that there is positive and meaningful relation between progress's motivation and thinking styles.in a research called (to survey students' thinking styles contribution in knowledge and its using in attitude toward computation and information technology),he concluded that between creative thinking styles in comparison with knowledge and using computation and information technology, there is positive and meaningful relation. in a research, showed that.

There is relation between thinking styles and creativity and creative people have tendency toward legislative and global styles. in his research surveyed relation between leadership styles and organizational atmosphere with creativity and innovation. Research's society was teachers of Honk Kong city in elementary level. His research's results showed that managers' leadership style variable has positive and meaningful effects on creativity and innovation's variable. Furthermore, creativity variable has positive effect on innovative variable. [Golshekeh et al. \(2010\)](#) in a research called ((relation between thinking styles, progress's motivation, educational progress and creativity with students' entrepreneurship, they concluded that legislative thinking style, progress's motivation, creativity, local thinking style and educational progress, are predictive of entrepreneurship. [Saroghad \(2010\)](#) and coworkers' research results called (relation between thinking styles with self-efficiency of Shiraz pre-university's male and female student) showed that between self-efficiency variable and all of thinking styles except internal thinking, there is positive relation in all of students in one percent, level. In this research, it is tried to specify relation between people's preference kind to use self mental ability or thinking styles with innovative tendency in statistic's society students.

### **1.1. Material and Work's Procedure**

This research is a kind of utilization researches base on purpose and it is descriptive and correlation one based on its nature and recognition method. In this article, logistic method is used, a method that all of researchers and thinkers used, to have scientific research's features. Based on data nature, in this article, the criterion is sequential, so correlation's coefficient is computed and it is Pearson's correlation's coefficient. Studied people, are 958 university's students of supplementary study college of Kermanshah's Islamic Azad university in 2012 academic year.90 participants have been chosen based on Cochran's formula to appoint special sampling capacity and in classifying-random sampling method and from 13 various educational courses. To complete research, library and field styles are used to data collection. First data collection means are thinking styles standard questionnaire (Sternberg & Wagner) and basic questionnaire (tendency to innovation). Basic questionnaire (tendency to innovation) is prepared based on valid scientific sources. So effective

factors in innovation and creativity that are pointed to in scientific sources, are specified and based on 25 questions in a 5 choices criterion is prepared from, I am completely disagree to I am completely agree.

To appoint validity of made questionnaire, it was considered by several psychology's professors and modified points were stated in questionnaire and its validity have been analyzed based on retest method on 25 university's student. Correlation's coefficient of Specialists' theories results about questionnaire's validity was 0.72 and resulted correlation's coefficient from questionnaire's retest on 25 participants with three weeks' time distance was 0.85 that shows validity of said questionnaire. Validity of thinking's styles questionnaire in various researches, have been verified. Validity's coefficient of this questionnaire was reported for minor tests from 0/56, to executive style to 0/88, to global style with average to 0/78 and [Emamipoor and Seif \(2003\)](#) reported this coefficient to minor tests from 0/43, to legislative style to 0/87, to conservative style with average 0/67 to all of minor tests. To survey questionnaire's structure validity with agent analysis, caused five factors to be derivate that appointed 77% of data's variance. Questionnaires' internal minor tests similar coefficient based on results from test 810 by Emamipoor and Seif, from 0/81 for external style to 0/53 for monarchic and anarchic 0/92 to the entire questionnaire was reported that shows accepted internal and similar coefficient to minor tests and all of questionnaire's questions ([Emamipoor and Seif, 2003](#)).

In this article, there are some actions to survey validity and durability of thinking's styles questionnaire, they are done in this way: to survey test's validity, this test was performed in a retest method and in 3 weeks time's distance on 25 students. Validity coefficient to minor tests from 0/54 to hieranic style to 0/79 for internal style with average 0/62, all of coefficients were significantly accepted. Internal and similar coefficient of thinking style questionnaire's minor test's questions was calculated based on results from test 90 of sampling group. Internal and similar coefficient of thinking style questionnaire's minor test's questions, from 0/77 to legislative style to 0/47 to external style and 0/91 to all questionnaire's questions, that shows accepted internal and similar coefficient to minor tests and all of questionnaire's questions. To survey test's durability based on results from test 90 with agent analysis and by using basic component and variance cycle, three factors were created that appointed 60/11 amount of variance's general percentage.

## 1.2. Findings

Given data from questionnaire were analyzed based on using deductive statistic methods (Prisons' correlation's coefficient and Regression's multiple step by step). Results will be analyzed in research's hypothesis frame.

Hypothesis1: There is meaningful relationship between legislative thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between legislative thinking method and tendency to innovation.

( $r=0/241$ ,  $p<0/05$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/058) shows those 6 percentages of tendency to innovation's variance is explainable via legislative thinking method's variable.

Hypothesis2: There is meaningful relationship between executive thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between executive thinking method and tendency to innovation.

( $r=0/386$ ,  $p<0/001$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/149) shows those 15 percentages of tendency to innovation's variance is explainable via executive thinking method's variable.

Hypothesis3: There is meaningful relationship between judicial thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between judicial thinking method and tendency to innovation.

( $r=0/280$ ,  $p<0/01$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/078) shows those 8 percentages of tendency to innovation's variance is explainable via judicial thinking method's variable.

Hypothesis4: There is meaningful relationship between monarchic thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between monarchic thinking method and tendency to innovation.

( $r=0/025$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result (0/001) shows that no percentage of tendency to innovation's variance is explainable via monarchic thinking method's variable.

Hypothesis5: There is meaningful relationship between hieranic thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between hieranic thinking method and tendency to innovation.

( $r=0/106$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result appointing coefficient's result (0/011) shows that no percentage of tendencies to innovation's variance is explainable via hieranic thinking method's variable.

Hypothesis6: There is meaningful relationship between oligarchic thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between oligarchic thinking method and tendency to innovation.

( $r=0/124$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result appointing coefficient's results (0/015) show that no percentage of tendencies to innovation's variance is explainable via oligarchic thinking method's variable.

Hypothesis7: There is meaningful relationship between anarchic thinking style and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between anarchic thinking method and tendency to innovation.

( $r=0/25$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result appointing coefficient's results (0/001) show that no percentage of tendency to innovation's variance is explainable via anarchic thinking method's variable.

Hypothesis8: There is meaningful relationship between global thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between global thinking method and tendency to innovation.

( $r=0/043$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result appointing coefficient's results (0/002) shows that no percentage of tendency to innovation's variance is explainable via global thinking method's variable.

Hypothesis9: There is meaningful relationship between local thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between local thinking method and tendency to innovation.

( $r=0/410$ ,  $p<0/001$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/002) shows those 17 percentages of tendency to innovation's variance is explainable via local thinking method's variable.

Hypothesis10: There is meaningful relationship between internal thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between internal thinking method and tendency to innovation.

( $r=0/358$ ,  $p<0/01$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/128) shows those 13 percentages of tendency to innovation's variance is explainable via internal thinking method's variable.

Hypothesis11: There is meaningful relationship between external thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is no significant and positive relation between external thinking method and tendency to innovation.

( $r=0/076$ ,  $p<0/05$ ). Lack of correlation in appointing coefficient's result appointing coefficient's results (0/006) show that no percentage of tendency to innovation's variance is explainable via external thinking method's variable.

Hypothesis12: There is meaningful relationship between liberal thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between liberal thinking method and tendency to innovation.

( $r=0/451$ ,  $p<0/001$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/203) shows those 20 percentages of tendency to innovation's variance is explainable via (آزادمنشانه) thinking method's variable.

Hypothesis13: There is meaningful relationship between conservative thinking method and tendency to innovation in studied people of society.

Analysis' results of this hypothesis show that there is significant and positive relation between conservative thinking method and tendency to innovation.

( $r=0/214$ ,  $p<0/05$ ). This amount of correlation is remarkable. Appointing coefficient's result (0/046) shows those 5 percentages of tendency to innovation's variance is explainable via conservative thinking method's variable.

To data's final collection and to survey relation between thinking styles and tendency to innovation, step by step multiple variables Regression analysis, was performed. In this analysis, thinking styles have been regarded as a predictive variable of tendency to innovation.

Multiple variables of Regression's analysis result with step by step method using to predict tendency to innovation based on thinking styles (table 14) showed that in first step, Regression's analysis to predict tendency to innovation among 13 thinking styles, Liberal style has the most correlation (0/451) with tendency to innovation, in way that Liberal style predicted 20 percents of changes to tendency to innovation. Liberal thinking style has positive relation with tendency to innovation. In second step of Regression's analysis, liberal and local styles, with the same correlation coefficient (0/517) have predicted 27 percent changes of tendency to innovation. These styles have positive relation with tendency to innovation. In last step (third step) of Regression's analysis, liberal, local and external styles with the same correlation coefficient (0/565), predicted the amount of 32 percent of changes of tendency to innovation. Liberal and local styles have positive relation with tendency toward innovation and external style has negative relation with tendency toward innovation.

## 2. DISCUSSION AND CONCLUSION

Research's findings showed that there is positive relationship between some thinking styles and tendency to innovation.

The most amount of positive correlation was belonged to liberal thinking style and the most amount of negative correlation was belonged to conservative thinking style. Liberal, local and external styles have the most predictive power of tendency to innovation. Furthermore among thinking styles, (Legislative, executive, judicial and internal), there is positive relationship with tendency to innovation. Hypothesis 1 analysis results is the same in relation with positive relationship between creativity's high levels and legislative styles, the relation of thinking styles with creativity and creative people tendency to legislative styles and [Kiani \(2003\)](#) research about high efficiency of teachers with legislative thinking method. Results from hypotheses 3,12 and 13 is the same with Greegorenko and Sternberg's research results (1997) about meaningful relationship between judicial thinking method and students' educational progress and relationship between creative ability component with conservative and liberal thinking styles. [Selegi \(2011\)](#) research results based on positive relation between legislative, conservative and judicial thinking methods with educational progress in students. based on positive relation between self-efficiency and legislative, executive and liberal styles and negative relation between conservative style and self-efficiency, [Khoeini \(2005\)](#), meaningful statistics' relationship between judicial thinking method with creativity in female university's students, about positive relationship between entrepreneurship and legislative thinking method, and based on positive and meaningful relation between executive



and liberal thinking method with creativity, are all verification of results from hypotheses' analysis No 1,2,3,12 and 13. About different results, we can point to results from hypotheses' analysis No 1 and 2 based on lack of meaningful statistic's relation between legislative thinking method and creativity, based on lack of relation between organized healthy with legislative thinking method and [Khoeini \(2005\)](#) research that was about lack of meaningful relation between executive thinking method with students' creativity.

Results from current research can be appointed with theoretical factors. that people with legislative thinking style have tendency to innovation, creation and designing, they do tasks based on their methods and they aren't content with tasks that others designed for them and most of time their unsatisfied manner, caused their failure. So these people are self-idea and creative and this style caused creativity. ([Omidvar and Hussein, 2005](#)). He also believed that when students enter high supplementary educational periods, they be encouraged for more creative ideas, it means legislative style will be regarded more. So he believed, students in higher educational periods will be raised more legislative and liberal ([Emamipoor and Seif, 2003](#)). They enjoyed tasks that need more creativity ([Naderi and Saiedeh, 2010](#)). People with executive style tend to obey regulations, and do tasks orderly and they tend to have plan before their tasks to be done. With higher educational periods, students especially in MA and PHD courses, act less one dimensional actions in their tasks and solve problems in an organized way. They regarded innovation and creativity in their actions and they won't regard traditions and customs that appointed before. They tend to evaluate regulations and plan and they also prefer actions that related tasks and idea have been evaluated. They want to act based on their method and making decision about actions be in their authority. They don't prefer pre-organized tasks ([Poorkiani and Shahiloo, 2010](#)). people with monarchic thinking style tend to keep regulations and they are power-oriented. They are often having one- dimensional manner and they look for things to memorize them forever ([Selk and Atashpoor, 2006](#)) so they don't tend to change and innovation. Based on [Selk and Atashpoor \(2006\)](#) research, liberal ,global, judicial and legislative styles, that he called ((liberal thinking method)),are complex thinking styles that caused innovation, creativity and invention ([Khaier and Ostovar, 2006](#)). People with liberal thinking method, tend to act in new ways and they are disagree with customs and traditions. They have high flexibility and they want maximum changes. They enjoy tasks that are with novelty and ambiguity ([Selk and Atashpoor, 2006](#)). People with conservative thinking style is content with organized and predictable place and they want less change. So to face with situations, they evaluated all the aspects and they react more exactly and politically and they try to create predictable structure.

That it is possible to divide 13 surveyed thinking styles into two different categories. First thinking styles (like legislative, judicial, hieranic, liberal are creativity's producer and they need complex information process. People, who use this kind of thinking style, tend to norms' challenging and they are risk acceptance. Second kind of thinking styles (like executive, monarchic, oligarnic, internal and external)based on special task's style ,can be categorized in any both simple and complex thinking styles ([Selegi, 2011](#)). To compare results of current research with prior research's results whether in our country or abroad, some differences can be seen.

May be we should related these differences to means that in these researches used to examine creativity and tendency to innovation. There are various means to evaluate creativity, in other words none of current researches, evaluated tendency to innovation's topic. Based on performed researches on thinking styles, there are several ideas that all or some of them can justify perceived paradoxes in current study. Based on Sternberg's ideas, thinking styles are not "good" or "bad", but it depends on time, duty and situation. He also believed that culture is one of the most agents to form thinking styles and it can be increase or decrease factor of special thinking styles. In current study, studied students were from peculiar culture and they were from various places based on geographical aspect, also all of them were studding in a university. Exact prediction of one's thinking styles can be beyond what a questionnaire evaluated and a person can use two or more combination's arena of thinking styles, means he/she may not have dominant thinking method that explained in questionnaire, most sections' meaninglessness can be this reason.

**Table-1.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
legislative thinking style	44/7	7/35	0/241	0/058	0/022
Tendency to innovation	88/96	9/47			

**Table-2.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
Executive thinking style	43/59	6/41	0/386	0/149	0/000
Tendency to innovation	88/96	9/47			

**Table-3.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
judicial thinking style	37/63	6/72	0/280	0/078	0/008
Tendency to innovation	88/96	9/47			

**Table-4.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
monarchic thinking style	39/22	6/25	0/025	0/001	0/815
Tendency to innovation	88/96	9/47			

**Table-5.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
hieranic thinking style	37/44	5/56	0/106	0/011	0/322
Tendency to innovation	88/96	9/47			

**Table-6.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
oligarchic thinking style	36/94	6/18	0/124	0/015	0/246
Tendency to innovation	88/96	9/47			

**Table-7.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
anarchic thinking style	37/07	6/63	-0/113	0/013	0/287
Tendency to innovation	88/96	9/47			

**Table-8.** Pearson's correlation coefficient summary to state to variables' relation

<b>Variable</b>	<b>Average</b>	<b>Deviance's scale</b>	<b>correlation</b>	<b>Appointing coefficient</b>	<b>Significance level</b>
global thinking style	37/07	6/57	0/043	0/002	0/685
Tendency to innovation	88/96	9/47			

**Table-9.** Pearson's correlation coefficient summary to state to variables' relation

Variable	Average	Deviance's scale	correlation	Appointing coefficient	Significance level
local thinking style	41/22	5/74	0/410	0/169	0/000
Tendency to innovation	88/96	9/47			

**Table-10.** Pearson's correlation coefficient summary to state to variables' relation

Variable	Average	Deviance's scale	correlation	Appointing coefficient	Significance level
internal thinking style	42/42	6/53	0/358	0/128	0/001
Tendency to innovation	88/96	9/47			

**Table-11.** Pearson's correlation coefficient summary to state to variables' relation

Variable	Average	Deviance's scale	correlation	Appointing coefficient	Significance level
external thinking style	36/91	6/22	-0/076	0/006	0/476
Tendency to innovation	88/96	9/47			

**Table-12.** Pearson's correlation coefficient summary to state to variables' relation

Variable	Average	Deviance's scale	correlation	Appointing coefficient	Significance level
liberal thinking style	40/64	7/39	0/451	0/203	0/000
Tendency to innovation	88/96	9/47			

**Table-13.** Pearson's correlation coefficient summary to state to variables' relation

Variable	Average	Deviance's scale	correlation	Appointing coefficient	Significance level
conservative thinking style	35/49	6/73	-0/214	0/046	0/043
Tendency to innovation	88/96	9/47			

**Table-14.** Regression's coefficient result summary to meaningful variables

Predicting variable	correlation	Appointing coefficient	Standard coefficient	T amount	Possibility level
First step: liberal	0/451	20	0/451	12/99 4/74	0/000 0/000
Second step: Liberal local	0/517	27	0/343 0/275	7/71 3/44 2/76	0/000 0/001 0/007
Third step: Liberal local external	0/565	32	0/353 0/346 -0/238	8/26 3/65 3/43 -2/54	0/000 0/000 0/001 0/013

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