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The Investigation into the Relationship between Intellectual Preferences Model and Preparation for Organization

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Abstract

Purpose - The objective of the present study is to examine the relationship between intellectual preferences of individuals and the level of readiness for change according to Ned Herman.
Research design, data and methodology - For this, Iranian Supreme Audit Court was selected as a case study in this research and it was carried out to evaluate research variables and test hypotheses using standard questionnaires of intellectual preferences and readiness for change based on the methodology. It should be remarked that only 32 managers of Audit Court were willing to participate in this research and responded to the questionnaires.
Results - The outputs of the performed tests showed that although there is not a significant relationship between the individuals with intellectual preferences for class A and readiness for change them, approaching the intellectual preferences of the individuals to D region increases the readiness for change them. On the other hand, whatever individuals have intellectual preferences for branches in groups B and C, the level of preparedness for change is low.
Conclusions - The results of this research have made a clear policy for the effective utilization in human resources based on their intellectual preferences model for management with organizational changes.

Keywords: Intellectual Preferences, Cerebral Quarter, Readiness for Organizational Change, Supreme Audit Court.

JEL Classifications: M12, M51, M54.

1. Introduction

Today's world is the continuous transformations' one and the era of discontinuity with a profound effect on the organizations. Therefore, it is imperative for the firm to adapt itself to the threatening changes directly or indirectly to maintain, survival and continuation of its life. Transformation is natural that all beings and creatures are apparently facing with such a phenomenon during their life. Change and innovation are essential to human social life, and maybe we were the same early humans without it. The concept of readiness for change is consistent with the ideas of Kurt Lewin about the getting out of freezing and represents the individual attitudes that occur during the process of change. Many researchers have assumed that most change-related efforts have failed due to the lack of a process of getting out of freezing and so they have emphasized the need for preparedness before any attempt to implement and manage any change (Kotter, 2012). Thus, humans, affected by their perception, from the information received from the others. Individual`s behavior is vulgar on his perception of the fact that he observes; that is, his behavior is based on his perception of reality and not on reality itself. Most people are unaware of the fact that their perceived reality is different from the reality seen by others. Therefore, individuals' perception prevents them from perceiving their surrounding issues (Noone, 1998). Individuals' perception and their thinking style is effective in dealing with change and acceptance of or resistance to change. Researchers and scholars have proposed many theories in the case of thinking styles.

Ned Hermann (Father of Whole Brain Technology) considers the difference between perception and personality

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in the individuals arising from thinking styles and dedicated state of the human brain through the intellectual preferences measuring instruments (HBDI). Intellectual preferences measuring devices that have been produced through researches based on new developments in technology and medical recently enables us to learn about our intellectual preferences and use it effectively in our personal and professional life.

The rest of the paper is organized as follows. The following section provides a brief review of the literature. The later section gives data and methodology. The next section provides findings and discussion. Lastly, some concluding remarks are given.

2. Literature Review

Through his researches and experiences, Ned Heramann proved that brain is specific and unique not only physically, but also regarding mechanism. In fact, its specific state can be broken into four distinct parts, each with its language, values, and knowing styles. Everyone has a unique combination of intellectual preferences that in turn will lead to different behaviors (Noone, 1998). Given the importance of mental preference model, it seems that this model is related to various factors, including the degree of readiness of staff to organizational change, and this research is to define whether or not there is a relationship between these two variables. According to Dorfman (1994) individuals are the important factor in the change process, thus managing the human part of the organization is the main challenge in leading the process of change in the organization because people consider the values, desires, and attitudes towards a particular activity. Ned Herman has done many types of research on the human brain and its different areas based on the physical structure of which the brain is exclusive and unique not only physically, but also regarding its mechanism. Conducting extensive research helped to Hermann to organize his data as a “descriptive metaphor” in the quartet model of the brain. In this model, the brain has been described as a circle that has four parts. Hermann named these parts with letters of the alphabet (including sections A, B, C, and D) to emphasize the metaphorical mode of this model. There are highly distinctive categories of intellectual abilities or learning and understanding styles in each section. According to Dr. Spray, attitudes and perceptions of the individuals are derived from the structure of the human brain. According to many theories of organizational transformations, readiness for organizational change is one of the first steps by the organization in the field of change. In the evolving and changing environment in which today’s organization continue their life, it is improper asking this question that: whether the change is happening or not? Instead, this issue should be requested that managers and leaders how should manage the several and numerous changes affecting their organization each moment. In this regard, leaders and administrators can manage the organization development programs together. During the period after World War II, Dye and Mills (2009) began the first attempts to create a systematic approach for change management using Lewin work on the organizational leadership, as “sensitivity training, research in practice and force field analysis.” Followed by it, the researchers in the area of management referring to Lewin 's work addressed the issues about work motivation of productivity and resistance to change. Researchers on change management are focused on specific domains of behavioral changes, focusing on leadership (such as leadership style), training (sensitivity training) or changes in attitude (e.g., participative management). Finally, some various aspects of recent researches on studies in the experimental practice of participative management and survey feedback in the form of a systematic approach have been integrated with the purpose of long-term changes in the organizational structure of beliefs and values.

2.1. Readiness for Organizational Change

The concept of readiness for change is consistent with Lewin ideas about getting out of freezing and represents the individuals' attitudes occurred during the process of change. Many researchers have assumed that more efforts associated with the change have failed due to the lack of an efficient process of getting out of freezing and that is why they have insisted on the need for preparedness before any attempt to implement change and manage it (Armenakis & Harris, 2002; Kotter, 1996). Widespread and extensive acceptance of readiness for change began according to the individual perception of change and considering it. People understand their environment actively, and they are affected by their perceptions, not by the objective realities. Change in the organization cannot be done without the support and cooperation of organizational members, and individual change does not occur unless the individual is prepared for it. Some active researchers in the field of change have emphasized the importance of the factors or arrangements that facilitate making the change or develop and promote it or provide constant readiness for organizational change in individuals (Armenakis & Harris, 2002). Understanding these factors will help to assess, design and implement the change through effective interventions. As a result, in the literature of organizational change can be observed the coordination and consistency between individual attitudes and efficient and successful organizational change (Armenakis & Bedeian, 1999). Armenakis and Bedeian consider the process of change in three main steps: 1) The introduction of change 2) Acceptance of change 3) The institutionalization of change by putting new reforms and changes in the norms of the organization (Armenakis & Bedeian, 1999). Therefore, to increase the acceptance level

of the staff, the readiness for change should be provided from the same initial steps of introduction. According to Dalton and Gottlieb (2003), the readiness includes the conditions and process of readiness for change. Conditions of readiness for change are affected by the need to change, and importance and the adequacy of support for changing the environment and the readiness process involve the full awareness of the need for change, cost comparison, benefit of change, and planning for change.

Jammieson, White, and Peach (2004) have defined the readiness for change as "the extent to which staff has a positive attitude and also believe that such a change has likely some positive outcomes for themselves and the organization". Huy (1999) defines the readiness for change as a degree to which an individual has the readiness for performing different organizational activities (compared to the past). Readiness occurs when structural environment and attitudes of members of the organization are in such a way that they are open to the impending change (Armenakis & Harris, 2002). Researchers indicate that the readiness for change in the organization occurs at two distinct levels: individual level and the organizational level. At the individual level, elements of readiness for change include motivation, competence and personal traits and characteristics (Armenakis & Harris, 2002). On the other hand, elements of readiness for change at the organizational level include organizational resources, culture, climate, money, and technology (Weiner, 2009). Berayan Wiener, in his study "The theory of readiness for organizational change" and quoting Klein and Kozlowski, describes the readiness for change as follows: readiness for change is a multi-layer structure. It can be at the individual, group, departmental and organizational. Readiness in any of the mentioned levels can be theorized, studied and evaluated. However, levels of readiness for organizational change are not identical and similar (Weiner, 2009).

In addition, usefulness and effectiveness of change are the results of sharing a sense of trust and confidence in being effective of group and team activities in implementing change in complex organizations more than the result of individuals' skills or assessment of the organizational knowledge and its resources (Weiner, 2009). Studying the factors involved in decisions leading to organizational change, we encounter with three categories of factors: the factors related to the environment; the factors related to organizational grounds and the factors related to the characteristics of decision-makers (Papadakis, Lioukas, & Chambers, 1998). Researchers involved in the study of decisions leading to change, have focused on the study of all aspects relating to the organizational and environmental fields. Especially, some matters often found in these studies are related to the evaluation of factors reinforcing change and factors inhibiting the implementation of changes in the organization. The most important external factor that is mostly taken into consideration is the need to the adaptability of organization and the extent to which these external factors contribute to stimulating organizational change processes (Kraatz & Zajac, 2001).

2.2. Brain Dominance

"Ned Hermann" is the father of brain dominance technology. He proved that the brain not only physically, but concerning work is unique and extraordinary. Its specific states can be separated into four sections which each of them is partitioned by their language, values, and knowing styles. Each person has a novel mixture of these intellectual preferences leading to different behaviors. How to achieve these results by Hermann, as he explains in his book "The creative brain", is similar to a story. This section summarizes his conclusions to understand the logic of the development of the quartet model in a glimpse. He began to study the function of the right and the left half of the brain and in particular, he addressed the works of "Roger W. spray" and linked them to the split- half brain researches and experiments. In neuropsychology, it is proved that the mathematical thinking and speech (speaking, reading, and writing) than the left hemisphere of the brain are carried out mainly in the left-brain hemisphere while spatial, holistic and imaginative thinking takes place in the right hemisphere. The highly sophisticated machines are used in studies on the brain to portray brain function and obtain new things about the most complex and dramatic organ. In the brain of the patient can be a mental dichotomy.

Another thing discovered by Ned Hermann in his researches was the concept of dominance. People do not use the two halves of their brain in the same way and to the same frequency. Humans create the dominances and "reference scenarios of understanding". Ned Hermann calls these scenarios "intellectual preferences" or "cognitive preferences." High skill level and rapid response are the benefits of this dominance. When we use Hermann brain dominance, we will need to solve a new problem or learn a new something. For instance, if you are solving the problem analytically by looking at the cases and numbers and then putting them in a logical formula, you are using the left half of the brain. If you are searching for patterns and images with visual effects to give you an intuitive understanding, you are using the right half of the brain. Left-brain students learn by studying, while learning of the right-brain students is associated with experimental proofs and practical activities. More preferences in one of the thinking styles are linked to more and more unwillingness or discomfort compared to a different case. These individuals "opposites" will have much difficulty in communicating with each other because they use different words and look at the world from very different "gates". The question that arises here is that "which case is better?" Hermann found that both the brain modes are the best to do the works for which they are designed.

How do humans develop these preferences? Are we born with "having" these preferred mental states? Hermann believes that every person is born with a certain genetic set of cognitive abilities and the specific strengths and weaknesses. As we interact with the world, we learn to react with our strong capabilities because we will achieve more successes. As we have seen, the use of the brain with specific thinking styles strengthens these structures. Herman says that feedback circuit of “performance-admiration-preference” can make a small difference in a hemispheric specificity to the stronger preference for a cognitive state against others. This is true not only for individuals but also for all cultures. The industrial revolution led to the success of analytical thinking. While, in the traditional American culture and rural communities, survival and sustainability depend on intuitive, holistic skills such as knowledge of animal behavior (for hunting and agriculture), understanding of ecology, art, medicine, meteorology and social solidarity. Since the education system in our school focuses heavily on the skills of sequential reasoning, most creative capabilities are often completely overshadowed and often, they are considered practically insignificant not only by teachers but also by educated parents, family members, employees and managers. What is needed is identifying and creating a better balance between intellectual abilities; we must learn how to use these abilities for thinking and problem solving with the whole brain and make them integrated and coordinated.

To find out how Herman developed a quartet brain dominance, it is necessary to imagine the physical brain. Most people are familiar with the hemispheric division of the brain. In more precise lexical meaning, these are “cerebral hemispheres” constitute about 80 percent of the whole brain. Main thinking processes occurred in these hemispheres are: visual, auditory and tactile sense, control of voluntary movements, reasoning, conscious thought and decision-making, speech and non-discursive visualization, imagination and integration of ideas. Each cerebral hemisphere has a separate structure in which has placed, i.e., half of the limbic system. The limbic system is a vital control center, which regulates hunger, thirst, sleep, wakefulness, body temperature, chemical balances, heart rate, blood pressure, hormones and emotions (joy, aggression, and anger). This system plays a major role in learning because it is a decisive factor in the transfer of input data to memory.

These hemispheres are connected to each other with strings transferring the communications within and among these hemispheres. These connected strings form a complex network that connects different specific areas in each hemisphere. In past, limbic system was considered as a single unit but today, it is known as two halves or two slots connected to each other by horsetail connective neural tissue. A corpus callosum connects. These two cerebral hemispheres included 200 to 300 million axonal tissues. When a part of the brain is practically thinking, other regions will be “idle” to not prevent this particular thinking. However, when solving a complex problem or performing a challenging task, more than an intellectual skill is involved. The brain can transmit signals between different specific areas within and among hemispheres through the fiber network very fast. Changing the mental states in the left hemisphere or the right hemisphere is very simple. This exchange is somewhat more challenging between two lower parts (limbic) or upper parts (cerebral). Diagonal replacement is much more challenging and stressful because there is no a direct fiber connection between these diagonal cross sections of the brain and thoughts should be transferred or processed through one of the connected sectors. As it is discussed in the book “the creative brain”, researchers have found that the corpus callosum in men and women has a physical difference. Women have on average 10 percent more texture and transmission of impulses (nerve messages) is 10% faster than men. So many women can transmit ideas between the hemispheres faster than a man can. In addition, their corpus callosum is evolved three years earlier. According to Herman, the young women have the advantage that they are more comfortable with the processes on the right side of the brain due to the biological and cultural effects. He found that likely women have more mental processes between the hemispheres, more dominance on the whole brain and more intuition and also, they are more people-oriented instead of object-oriented. They understand their environment with more emotions, manage the innovation process more easily and respond faster to changing conditions. Thus, an organization that can integrate and coordinate the capabilities for men and women will increase its competitive advantage to have thought with the whole brain. In next step of his researches on the brain and creativity, Ned Herman tried to learn more about the human brain dominances. How does the brain select which particular part of the brain should be active? This question was directly related to his work as a teacher and coach because he found that the left-brain people have to be trained for optimum learning by the methods different from right-brain ones. For example, when people were asked to answer the question “what's wrong with teaching?”. A left-brain thinker generally will respond that “go back to the principles - get rid of unnecessary peripheral issues such as sport and art.” A right- brain thinker will suggest some practical and cooperative educational activities such as the integration of social and creative aspects with the total of training. Herman found a lack of understanding and underrating the different mental states and their distribution: How can a left-brain person be helped with training to work easier with their colleagues. Alternatively, how can a right-brain person be taught the goal setting and observing the schedules be more efficient? He concluded that both categories benefit from knowing how to use the whole brain to learn, work, solve problems and communicate with each

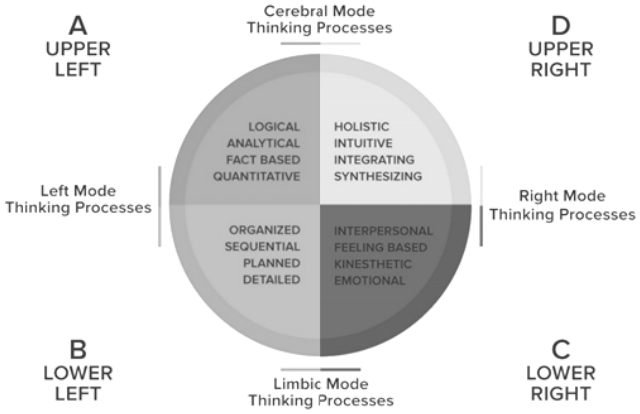
other. As a result, he quickly realized this important insight: no part of the brain works alone complete or creatively more than when it was stimulated and supported by inputs from other regions.

When Herman was looking for a questionnaire or a method to detect the intellectual preferences based on the uniqueness of the brain, it was surprising that he could not find any instruments appropriate for his purpose. Then, he developed a tool, which is known today as a tool for determining Herman brain dominance indicators (HBDI). In contrast, Myers-Briggs Type Indicator (MBTI) is based on the concepts of psychology, no specificity of mental states and thus provides different information (though with the correlation). Ned Herman attempted to hold several workshops; he collected more data with first versions of his questionnaire. These data suggested that they could be placed in four categories instead of just two types of the cerebral hemispheres. One day, while he was driving, this mental image of divided brain went his mind so that he believed that limbic system of the brain had also been divided into two hemispheres and the brain is essentially separated into four parts. This enabled him to organize his data in the quartet model of the brain as a "descriptive metaphor." Now that we are familiar with this model, it seems that proposed division is logical and obvious.

To emphasize the metaphorical mode of this model, Ned Hermann was named these parts with letters of the alphabet to focus on their relationship with the limbic brain. The upper part in left (cerebral), A, and the other parts have been called B, C, and D in the counterclockwise direction, respectively. There are very distinct categories of intellectual abilities and ways of learning and understanding in each part. In the next statements of this section, it will be discussed and described the characteristics of each of these parts from the perspective of learning with these mental states and how to improve these capabilities. Keep in mind that each, as Hermann emphasizes, is a unique "set" of intellectual preferences and learning styles. You may be excited to know that he and his colleagues, as well as other independent researchers, have been conducted hundreds of studies to determine the validity of HBDI. Now, Ned Herman has the database with more than 500 thousand individual and organizational intellectual charts. HBDI evaluation forms are scored at his central office by a computer, and he teaches to people and grants certificate to them to ensure the quality and reliability of the results in the interpretation and evaluation of this device.

2.3. HBDI Chart

HBDI chart was acquired after examining the intellectual preferences with HBDI. A shape or a square graph will be obtained when the relative sovereignties are marked with four points onto the axis that divide each of the quartet sections into two parts, and some lines connect them. Measure or intensity of dominance is indicated by circles that separate these sectors into "areas of intellectual preferences." The central circle has been named as "District 3". When an individual point is placed on District 3 in one of these four sectors, means that he/ she has refused the mental state but this is not to say that he cannot think in this way. Students can earn high marks if they wish and work seriously even in cases where thinking is needed in the states avoided by them because intellectual preferences do not correlate with IQ. Conversely, someone with a strong intellectual preference or high IQ does not know necessarily how good thinking. Dynamics of the brain have shown that thinking in a strange state of mind consumes more energy, and if you have to do it in a long time, you will feel tired.



<Figure 1> Whole Brain Model (Herman, 1995)

2.3.1. Characteristics of Analytical Thinking in Section A

Thinking of Type A is realistic, analytical, quantitative, technical, logical, rational and critical. This thinking focuses on data analysis, risk assessment, statistics, financial budgets and computing (working with computers), and deals with specialized hardware, an analytical solution of problems and making decisions based on logic and reasoning. The culture of Type A is materialistic, academic and arbitrary. This thinking is based on achievements and performance.

2.3.2. Characteristics of Analytical Thinking in Section B

Thinking of Type B is organized, sequential, controlled, planned, conservative, structured, precise, systematic and persistent. This thinking deals with management, tactical planning, organizational forms, protection, implementation of the solution, maintaining the status quo and focuses on "tested and true" materials. This culture is traditional, bureaucratic and reliable. This thinking is production-oriented and task-based.

2.3.3. Characteristics of Analytical Thinking in Section C

Thinking of Type C is emotional, kinetic, interpersonal

(people-oriented), and symbolic. This thinking deal with awareness of inspirations, feelings, values, music and relationships and it is necessary for education and training. The culture of Type C is humanitarian, the culture of collaboration, spiritual and immaterial. This culture is based on values and emotions.

2.3.4. Characteristics of Analytical Thinking in Section D

Thinking of Type D is visual, holistic, innovator, metaphorical, creative, imaginative, conceptual, spatial, flexible, and intuitive. This thinking deals with the future, possibilities, composition, game, dreams, insight, strategic planning, more great content, entrepreneurship, change, and innovation. Thinking of Type D is associated with exploring, entrepreneurship, innovation and looking to the future. Thinking of Type D is risk-based and independent.

2.4. Organizational Applications of Whole Brain Thinking and Learning

Creative problem solving and thinking with four parts of the brain are important not only for individuals but also includes some important implications for organizations and teamwork. Many organizations, especially when their life increases, tend to resort to thinking from type B, as in this case, the risks are reduced, and the status quo (existing pattern of success) will be maintained. However, most companies can benefit when the intellectual preferences of their employees conform to the working conditions. According to Ned Hermann, those executives who have triple and quartet dominance have the advantage that they can communicate with many staff, understand them better and resolve problems more easily, but the specific combination of intellectual preferences that is optimum for an organization depends on the nature of the organization's work. Organizations need to all four parts of the brain to solve problems and respond to the changing situations effectively. An organization can be a small family unit, a school, a club, a small institution, or even the major universities and multinational companies. This environment should provide a favorable atmosphere for creative problem solving and innovation. As we will learn in this book, it is tough having the creative ideas. Its difficult stage is the implementation of creative ideas. An idea is considered as innovation when it is a new model, progressive, acceptable and makes a permanent change in the human life. Innovation can be something like a new product or new technology, or a service and an instruction that provides a new way to perform work. To support how to use the whole brain, two types of education are required: first; the creative thinking skills should be promoted and developed. Then, these skills must be integrated and coordinated with the process of creative problem solving, especially when they are using in a group. Evidence suggests that creativity training for staff would not be effective without taking the second step. The creative problem solving needs to be used at all levels of the organization to provide a favorable atmosphere for change and innovation.

3. Data and Methodology

The study conducted in the Supreme Audit Court in Iran. The time taken for data collection and statistical analysis was fall of 2014. This research is descriptive regarding the method of data collection and as well as correlation with regards to the relationship between the dependent, and independent variables studied in this research. In addition, the present paper is a survey one that adds to the other benefits of the research because the results are generalizable. As already mentioned, the independent variable of the study is “intellectual preferences of managers of Supreme Audit Court,” while the “readiness of executives for organizational change” is considered as the dependent variable. The statistical population in this study will include all managers of the Supreme Audit Court; accordingly, 32 working directors of the Supreme Audit Court were selected in the available sample participated in this study and received the questionnaire and then their views were examined.

The instruments used in this research are as follow:

1) Intellectual preferences questionnaire (Ned Herman questionnaire): this survey has been presented by Herman and has 60 items. Thus, the respondents chose option according to their interest and self-awareness, and intellectual preferences of staff in Supreme Audit Court were measured according to it. Apparently, this questionnaire evaluated four quadrants of Ned Herman’s mental preferences (quarter A, B, C and D). Each quarter of intellectual preferences model is measured with 15 questions that four quadrants of intellectual preferences, 60 items are in front of the respondents. We have converted a percentage of positive answers of every person for each quarter than a total of responses (20 replies) to a number between 1 to 6 to homogenize the replies from this questionnaire and ones of the sampling of readiness for change with a range of 1 to 6.

2) Readiness for change questionnaire: Robert Krigel and David Brant produced the questionnaire in 1997 that has 35 items, and each item has a 6-point range for the response with number 6 indicating the complete agreement and number 1 representing the complete disagreement. It should be remarked that the questionnaire assesses five items measure seven features and every feature. These seven characteristics are as resourcefulness, optimism, adventurousness, drive, adaptability, confidence, and tolerance of ambiguity.

After identifying the subjects that should participate in this study, at first, the Herman’s intellectual preferences

questionnaire was given to them so that they can determine their intellectual preferences. After completing this survey, the readiness for change questionnaire was given to the respondents. After completing the questionnaires, all data were transferred to SPSS, LISREL and EXCEL software to perform statistical calculations. Then, statistical analysis and inferential tests were conducted to test hypotheses. The descriptive statistics and inferential statistics methods were used to analyze data and obtained information. While the descriptive statistics is used to analyze the frequencies and draw diagrams, inferential tests are used to analyze the research questions and identify relationships between the variables in the investigation. Briefly, one-way ANOVA and post hoc tests were used to analyze the research issues and Pearson correlation test was used to analyze the relationship between the readiness of court staff for changes and their intellectual preferences. It should be noted that the software SPSS version 20, Excel, and LISREL was used to perform statistical calculations.

4. Findings and Discussion

Demographic characteristics of statistical sample: 32 subjects who were all male and managers working in the Supreme Audit Court, responded to the standard questionnaire used in this study. In Chi-square test, the expected frequency in any item should not be zero and total items with the rate less than five should not be more than 20% of the total items. Since, the questionnaire of the present study deals to evaluate the frequency of “yes or no” answers to the 60 questions related to the subjective preferences (nominal responses) and Likert responses of the readiness for change (ordinal answers 1 to 6), the mentioned method has been used to study the dysplasia of these variables. The obtained results showed that responses have the acceptable dysplasia and therefore, the collected data are appropriate to continue the analysis. Briefly speaking, we only provide a report about the output of Chi-square test regarding five questions about the adventurousness variable (see <Table 1>).

<Table 1> Results of Chi-square test related to adventurousness variable

	ADV1	ADV2	ADV3	ADV4	ADV5
Chi Square	85.945	95.845	123.25	131.65	92.645
Degree of freedom	5	5	5	5	5
Symmetric significant level	0.00	0.00	0.00	0.00	0.00

a. No item had the frequency less than 5 and expected minimum frequency is 39.3.
b. No item had the frequency less than 5 and expected minimum frequency is 47.2.

At first, authors will discuss the analysis of variance of these groups to provide a detailed assessment of the differences between the averages of readiness for change among members of quad groups based on subjective preferences. One-way ANOVA examines the effect of the nominal or ordinal independent variable on an interval dependent variable (scale), evaluates the significance of F statistics and indicates whether the difference between the average of the different categories is significant or it has occurred randomly. In this study, analysis of variance was performed using the software IBM SPSS version 20 and results can be viewed in <Table 2> and <Table 3>.

<Table 2> Descriptive statistics of analysis of variance

Groups	Numbers	Average	Standard deviation	Average error	Min.	Max.
A	25	4.0251	0.2954	0.0496	3.29	4.49
B	50	2.9457	0.3945	0.0423	2.97	4.74
C	49	3.5464	0.3978	0.0468	2.97	4.63
D	14	4.0158	0.3657	0.0542	3.29	4.66

<Table 3> Results of one-way ANOVA

Readiness for change	Sum of squares	Degrees of freedom	Mean squares	F statistics	Significance level
Among groups	2.578	3	0.743	5.023	0.002
Within groups	25.456	144	0.148	-	-
Sum	28.034	147	-	-	-

<Table 2> and <Table 3> show descriptive statistics of readiness for change in the groups, the most significant findings of the analysis of variance. In <Table 3> is related to the significance level in which 0.002 (less than the significance level 0.05) shows that the errors that we have committed to rejecting the null hypothesis are so little. It can claim the difference between the averages of readiness for change is significant for at least two groups of quad categories of subjective preferences. In the second step, it should be known that differences significance is related to which group. For this purpose, Post Hoc test has been practiced. This test is used when we want an ESO, or following independent variable has more than two groups. For this purpose, it must determine whether the variance of groups is equal or not. It was performed using Lewin test and the null hypothesis of the variance in SPSS software.

<Table 4> shows the results of Lewin test. Given that p-value of Lewin test is more than 0.05, the null hypothesis based on equality of variance is not rejected, i.e., the variance of groups is equal.

<Table 4> Results of one-way ANOVA

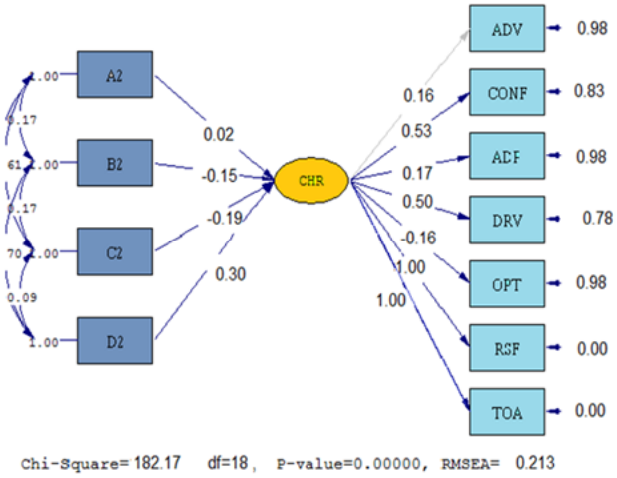
Significance level	Degrees of freedom 2	Degrees of freedom 1	Lewin Statistics
1.055	3	121	0.44

The results of Scheffe test have been presented in <Table 5>. This test was chosen among other available tests because it applies the greatest amount of caution and provides the reliable results. According to <Table 5>, because only p-value in C-D and B-D lines is less than 0.05, it can be concluded that the null hypothesis based on equality of average between Groups C and D (or Groups B and D) will be rejected. It means that the average of Groups C and D are not equal. This refers to a significant difference between the level of readiness to change (based on <Figure 1> and <Table 5>) among the members of Group D with the members of C and B. According to <Table 6>, it can be argued that the variance analysis reflects the fact that the readiness for change among members of Group D is more than the readiness for change among members of Groups B and C. The structural equation modeling was used to analyze and explain the research model and the effect of quad groups with different subjective preferences on the individuals' readiness for change using LISREL software version 8.8. It was also evaluated Multiple Indicators and Multiple Causes (MIMIC) Model in this software. In such models, a group of variables observes latent variable, and this is predicted that some of these variables are as combination and others are as reflective (Azar, Gholamzadeh, & Ganavati, 2013). Since the present research model deals to study the influence of subjective preferences of individuals on their readiness for change in the workplace and on the other hand, the primary variables of the research are all observed variables; MIMIC model provides the most appropriate structural model for the analysis of the framework for research. In other words, seven dimensions of readiness for change have assumed as the reflections of latent variables and four categories of subjective preferences of individuals are considered as predictor variables of the readiness for change.

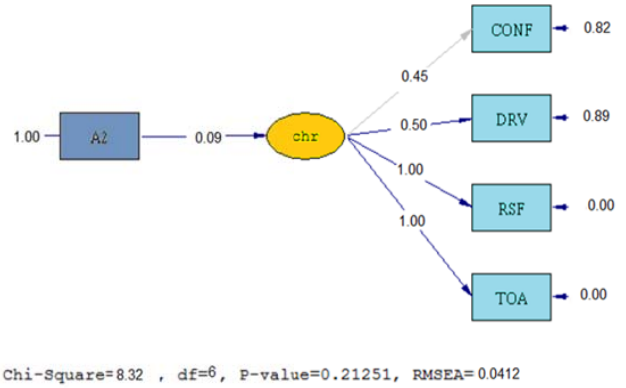
<Table 5> Results of Scheffe test

i(HBDI)	j(HBDI)	The average difference (i-j)	The average error	Significance level
A	B	0.2215	0.0875	0.345
	C	0.1954	0.0945	0.321
	D	-0.1864	0.142	0.162
B	A	-0.2215	0.0875	0.345
	C	0.05461	0.0765	1.000
	D	-0.387*	0.1232	0.0123
C	A	-0.1954	0.0945	0.321
	B	-0.05461	0.0765	1.000
	D	-0.3875*	0.1112	0.0087
D	A	0.1864	0.142	0.162
	B	0.387*	0.1232	0.0123
	C	0.3875*	0.1112	0.0087

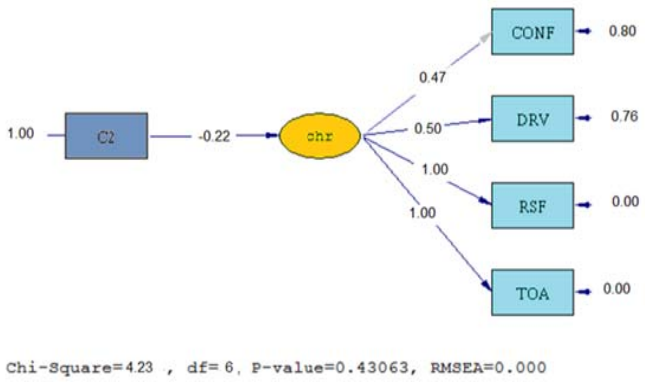
The first output of the model is presented in <Figure 2>. Unfortunately, <Figure 2> has not the right fit indices then; authors consider the separation of independent variables of the research and examination of the effect of each of them on the readiness for change, separately. After examining numerous models and implementing some changes, authors explained four quite sophisticated models (models 2-5) in the <Figures 2>-<Figures 4>. Model 2 has a desirable goodness of fit, and this indicates that there is no a significant relationship between the membership in the group A and the readiness of individuals to change. Its reason is that t value (1.32) in the mentioned relation is found in the range of non-significance ($-1.98 \le t \le 1.98$). Therefore, we can conclude that the subjective preferences of individuals closer to tendencies of Group A, it would not have a significant effect on the readiness of individuals for the change.



<Figure 2> Output of Model 1



<Figure 3> Output of Model 2



<Figure 4> Output of Model 3

5. Conclusions

The primary objective of this research is to identify the relationship between the intellectual preferences model (HBDI) and degree of readiness of the staff of the Supreme Audit Court to change to take advantage of the individuals' capabilities in dealing with the phenomenon of organizational change. For this purpose, 32 employees of the Supreme Audit Court had agreed to participate in this study and they were asked to answer the Ned Hermann standard questionnaire of intellectual preferences and readiness for change. A summary of these results is as follows:

1. The readiness of individuals for change is different from the various mental preferences significantly.
2. People with mental preferences of Group D have readiness for change significantly more than individuals in Group B.
3. People with mental preferences of Group D have readiness for change significantly more than individuals in Group C.
4. Subjective preferences of A has no effect on the willingness for change. In other words, it was not found a relationship between brain preferences of A and readiness for change
5. Subjective preferences of B has the negative and significant effect on the readiness for change.
6. Subjective preferences of C has the positive and significant impact on the readiness for change.
7. Subjective preferences of C has the positive and meaningful effect on the readiness for change.

Thus, it can be concluded that the answer to questions 1, 3, 4, and 5 of this study is positive, that:

Answer 1: there is a significant relationship between the intellectual preferences and readiness for change in Audit Court.

Answer 3: there is a meaningful and adverse relationship between detailed and order-oriented thinking of executives in the court (quadrant B) and their readiness for organizational change.

Answer 4: there is a significant and negative relationship between emotional and social thinking of executives in the court (quadrant C) and their readiness for organizational change.

Answer 5: there is a significant and positive relationship between intuitive and holistic thinking of executives in the court (quadrant D) and their readiness for organizational change.

Moreover, answer the question 2 was negative. That is, the results of this research did not show a significant relationship between reasoning and reality- oriented thinking of executives in the court (quadrant A) and the degree of their readiness for organizational change. Thinking A is realistic, analytical, quantitative, technical, logical, rational and critical. This thinking deals with data analysis, risk assessment, statistical, financial budgets and computing (working with computers), and with specialized hardware, analytical solving the problem and decision making based on logic and reasoning. Culture A is the materialist, academic and arbitrary. This idea builds on the achievements and performance. The samples of thinker as are Mr. Spock in si-fi program "Star Trek convention" and Jorge Gallup, an electoral observer. Those whom their intellectual preference is settled in section A, prefer certain issues and things in the school. They preferred topics include arithmetic, algebra, differential and integral calculus, accounting and science and technology. Lawyers, engineers, computer experts, analysts and technicians, bankers and physicists show preferences in thinking of type A. They talk about "profit" or "finding the truth" or "critical analysis". They can be regarded to as "calculating machine" or "human machines" or "enlightened."

As mentioned, the questions 1 and 5 showed a positive and significance relationship between the intellectual preferences model, in particular, intuitive and holistic thinking style (thinking of section D) and the readiness for organizational change. Thus, concerning these results, it is suggested that it is better for Supreme Audit Court placing the responsibility of conducting the organizational change to the people who their natural and holistic thinking style is dominant (zone D). Also, if the individuals with more readiness for accepting the organizational change were involved in the process of change, such transformation can be successful and also leads to reducing the individuals' s resistance to it. Such exercises can be beneficial when they are carried out in an appropriate situation and condition in the Supreme Audit Court. As Herman (1995) argues, people with D intellectual zone are creative and thinker, so it is better for us to reduce bureaucratic restrictions so that they can play an active role.

Thinking of Type D is visual, holistic, creative, metaphorical, creative, lovely, conceptual, spatial, flexible and

intuitive. This thought is concerned with the future, possible, combination, game, dreams, insight, strategic planning, more high content, entrepreneurship, change, and innovation. Culture o Type D is associated with exploring, entrepreneurship, innovation: thinking of type D is recreational, risk-based and independent. Pablo Picasso, the contemporary painter, and Leonardo Davinci, sculptor, architect, and scientist of the Renaissance, had a strong preference of type D.

Those who prefer thinking of type D will prefer issues such as works of art (painting, sculpture), as well as geometry, design, poetry, and architecture. In addition to sciences involved in research and development (R & D) in the field of medicine, physics and engineering, entrepreneurs, explorers, artists, and playwrights also have a strong preference for the D-type thinking. Individuals with D-type thinking talk about "playing with ideas" or "big picture" or "cutting edge" and "innovation." They can be thought as the individuals who are “in the course of the Sky,” “irregular” and “fantasy.”

The results of questions 3 and 4 of this research refer to the negative and significant relationship between emotional and social thinking style (Zone C) and regular and order-oriented thinking style (Zone B) with the readiness for change. It can be assumed that managers with intellectual preferences of B and C- type should not be practiced in conducting the organizational change because the readiness for organizational change is one of the first steps of organizational change and is indeed before the executive phase of the change (Oakland & Tanner, 2007). However, they can be employed in subsequent phases, means the executive phase of change. In fact, it is said that people with thinking in B Area are the specialist in planning and implementing a project, and also people with intellectual preference in C Area have the ability to allocate the human resources and team building (Webster, 1994). According to all findings and analysis, it can be said that it is better that basic steps and preparations of organizational changes are initiated by individuals who are not afraid of innovation and dealing with unknown phenomena and have the ability to tolerate ambiguity to an expectable and high level (Krygle & Brandet, 2008). Such people enjoy from stepping into an unknown world and embrace change. According to the findings of this study, it can be said that such people have the intellectual preferences of D Area. At the same time, it can be reasoned that administrative measures should be given to individuals with intellectual preferences in B and C zone. The important thing is that executive steps are after the phase of readiness for change.

Thinking of B type is organized, sequential, controlled, planned, conservative, structured, precise, systematic and persistent. This thinking is concerned with management, tactical planning, organizational form, protection, implementation of the solution, maintaining the status quo and the “tested and true” materials. This culture is traditional, bureaucratic and reliable; this thinking is product – oriented and task-based. Edgar Hoover, former director of the FBI(Federal Investigation Agency) and Princess Otto von Bismarck, Prussian Chancellor of Germany, are the samples of B-type thinkers. Those who prefer B-type thinking want to confront with very structured and organized matters. Planners, government officials (bureaucrats), managers and officers have the intellectual preferences of Type-B. These individuals say: “We have always worked this way” or talk about “law, order, self-discipline, and the right thing they can be attributed to the term of “meticulous” or “diligent.”

Thinking of type C is emotional, kinetic, affective, interpersonal (people - oriented) and symbolic. This thinking is concerned with perceptions, emotions, values, music and communication and is required for education and training. The culture of B type is humanitarian, the culture of collaboration, spiritual and immaterial. This culture is based on values and emotions. Mahatma Gandhi, the Indian social reformer, is a sample of Type-C thinker. Those with intellectual preferences of C-type prefer the specific issues such as social sciences, music, dance, theater, and sports that require higher skills in the school, and they involve in group activities rather than individual work. Teachers, nurses, social workers and musicians have strong preferences in thinking of type C, although the musicians and composers involve in thinking of Type A when the analyze the sweet time intervals or evaluate the effect of music. People with thinking of Type C talk about family” or “group work” or “personal growth” and “values.” Concerning stereotyped patterns of behavior, they can be considered as "sensitive" or "irritable" or "chatty and talkative" individuals.

According to comments on this study, the following suggestions are offered:

First, the present research was conducted in Supreme Audit Court with the participation of directors of the organization. Therefore, conducting similar research with the use of staff can approve or reject the results ahead. Therefore, such research is necessary to clarify the extent of the problem, which requires abundant time and energy. In this study, only male managers were employed at the time of collection of data. It seems that gender can be a major factor in the intellectual preferences. Therefore, it is suggested that gender is considered in the future investigations. Evaluation of intellectual preferences with other factors and variables can create interesting results. Researchers can consider variables such as effectiveness, moral intelligence and emotional intelligence, creativity, learning, management skills, decision-making styles, etc. Similar study can also be performed using more people because only 32 individuals participated in this study. Regarding limitations, the first restriction of this study is the generalization of obtained results to all organizations and other groups, because this study was completed in Supreme Audit Court which is a public organization. To generalize the results, therefore, should be performed with caution because

the research in private organizations may have different results. Although many factors affect the readiness for change, this research considered only intellectual preferences of the managers as independent variables and it also measured its effect on the readiness for change as the dependent variable. Thus, other variables such as organizational culture or suspicion could also be considered.

References

Armenakis, A., & Bedeian, A. (1999). Organizational Change: A Review of Theory and Research in the 1990s. *Journal of Management*, *25*(3), 293-315.

Armenakis, A., & Harris, S. (2002). Crafting a change message to create transformational readiness. *Journal of Organizational Change Management*, *15*(2), 169-183.

Dalton, C., & Gottlieb, L. (2003). The concept of readiness to change. *Journal of Advanced Nursing*, *42*(2), 108-117.

Dorfman, R. (1994). *Aging into the 21st century* (1st ed.). New York: Brunner/Mazel.

Harris, S., & Cole, M. (2007). A stages of change perspective on managers' motivation to learn in a leadership development context. *Journal of Organizational Change Management*, *20*(6), 774-793.

Herrmann, N. (1996). *The whole brain business book* (1st ed.). New York: McGraw-Hill.

Huy, Q. (1999). Emotional capability, emotional intelligence, and radical change. *The Academy of Management Review*, *24*(2), 325-345.

Jimmieson, N., White, K., & Peach, M. (2004). Employee readiness for change: Utilizing the theory of planned behavior to inform change management. *Academy of Management Proceedings*, *2004*(1), C1-C6.

Kotter, J. (2012). *Leading change* (1st ed.). Boston, Mass.: Harvard Business Review Press.

Kraatz, M., & Zajac, E. (2001). How organizational resources affect strategic change and performance in turbulent environments: Theory and evidence. *Organization Science*, *12*(5), 632-657.

Mohanty, R., & Yadav, O. (2000). Understanding the fundamentals for managing change. *Measuring Business Excellence*, *4*(4).

Mills, J. H., Dye, K., & Mills, A. J. (2009). *Understanding organizational change*. N. Y., NY: Routledge.

Papadakis, V., Lioukas, S., & Chambers, D. (1998). Strategic decision-making processes: the role of management and context. *Strategic Management Journal*, *19*(2), 115-147.

Robbins, S. (2001). *Organizational behavior* (1st ed.). Upper Saddle River, NJ: Prentice Hall.

Weiner, B. (2009). A theory of organizational readiness for change. *Implementation Science*, *4*(1), 44-67.