

Analyzing the Creativity and Innovation Position in Tabriz X[†] Company Organizational Structure

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Abstract. This research is following identification of the creativity and innovation position in organizational structure of Tabriz X industrial Co. and also determination of the Creativity and innovation preventer 's structural elements order of importance in this company. In order to analyze the problem and respond to the research questions in Stephen Robbins (1990, 2007) theory frame, "the triple dimensions of organizational structure", four main theories were codified. " field study" and " Descriptive- Navigate" techniques were used in conducting this research; so that after operational definition of index making and variables, the necessary information for measuring the research independent variables and their effects on dependent variables was collected by enquiries and then was organized and summarized by descriptive statistics and in order to analyze the analytical data for testing the theories in inferential statistics frame, " the ratio test" has been used. According to the results obtained from the research, it was clear that the Bureaucratic organizational structure of Tabriz X Industrial Co. is a creativity and innovation preventer in the company and in terms of Bureaucratic structural facts, elements such as centralization, formalization and complexity (specialization) affect the creativity and innovation reduction in the company. At the end of the article, based on the obtained results and findings, some practical suggestions have been presented to change Tabriz X industrial Co. structure and to increase the creativity and innovation position in it.

Key words: Creativity and Innovation, Organizational Change, Organizational Structure, Bureaucratic Structure, Organic Structure.

1. Introduction

Everything is changing and transforming in our time. In no times the waves of changes never had been such roaring like that the human life never have been unstable and under successive transformation like that. Today's world is changing in different aspects of society, economics, politics, culture and techniques. Organizations are the society subsystems that are working under this condition of fundamental and deep transformations and have to make changes in their own structural and content dimensions (Strategy, Technology, Measure, and Culture). In today's changing and turbulent world, the necessity of facing and keeping up with environmental changes is creating an appropriate condition for developing thoughts and novel equiseta responds. Fresh thoughts and new opinions are like a spirit in the body of organization that saves it from perdition. In order to develop and even to keep existing condition and to survive, the process of renewing and freshness should be maintained and encouraged. Studies which have been done by various authors show that one of the most important facilitator and preventer facts of creativity and innovation capacity in organizations is the structure of these organizations. They believe that organizations and companies whose management attitude and way of thinking is traditional and their structures are Bureaucratic have been unsuccessful and most of them have been under crisis Esp. since 1980; so to more and better respond to environmental changes, they have to change their structure and make creativity,

[†] In order to keep the organization privacy and because of the studied organization officials disagreement, it is avoided to mention the name of the company.

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innovation, Dynamics and development in the organization. These big companies are such as Philips, United Electronic Equipment; Lock-Hid Co, Apple Computer Co., White Westinghouse Co., General Motors' Co. and tens of other companies (Daft, 2007). The writer hopes that the research could present suggestions and practical approach to make changes in traditional structures to organize these structures in order to increase creativity and innovation by considering the creativity and innovation status in one of the country's fundamental and national supreme industrial units which has Bureaucratic structure and put a small step toward the country's industrial development.

2. Creativity and Innovation meaning and definition

Means developing new thoughts and ideas which have social benefits (Sharit and Salvendy, 1982) [2]. In other words, creativity is the use of mental ability for developing a new thought or concept. In "Herbert Fox" opinion, creative process is any kind of thinking process that solves the problem in a useful and innovative way. However "innovation" or invention is defined as a practical way of developing new ideas. Innovation, in Stephen Robbins (2007) opinion, is the process of applying creative idea and changing it to product, services and new ways of operations. Koontz (2004) believes that innovation can be a new product, a new service, or a new solution for doing something (job). In another view, innovation is the use of new knowledge in producing a new product or a new service that a customer asks for. In management point of view, creativity alone is not enough; for developing change and development in organizations, a new thought should be practiced and should have the necessary effectiveness.

2.1. Characteristics of creative people

Dubrin divides the characteristics of creative people into 3 basic groups as following:

- A. Knowledge
- B. Intellectual and mental abilities
- C. Personality and individual characteristics (Dubrin, 2006)

Despite a number of characteristics which have been considered to creative people, many other studies in this regard shows that the ability to develop a new idea and innovation, is relatively common among all human beings, and the analysis of all mental tests which have done since now refers that creativity capacity have been divided normally, but the studies show that our creativity level of effectiveness is more relevant to our efforts to use our minds than to our internal capacity (Osborn, 1993). Thus, if there is no creativity and innovation in an organization, that's not because of the fact that its staff has no intelligence and we should not completely explore the reason in the organization personality and mental construction, so indeed, we should explore it in its management practices and training divisions.

2.2. The characteristics of creative and innovative organizational environment (work place)

All the characteristics of creative and innovative environment (work place) are as following:

- Having organic and Nonbureaucratic organizational structure; organic organizational structures have following characteristics:
 - No concentration on decisions authorities
 - Low recognition and flexibility in performing orders, rules and circulars
 - Low complexity; which means not stressing too much on labor division, reducing hierarchy and reducing organizational units' geographical dispersion (Robbins, 2007).
- Clarity of organization strategy, purposes and mission to all staff;
- Same perspective and outlook in all organization staff;
- Encouraging the staff to individual, group and organizational learning; (Goh, 1998).
- Having the knowledge and stressing on quality orientation and customer orientation principles; (Brown & Harvey, 2005).
- Appropriate organic and organizational space (atmosphere) and culture. Organic organizational culture and space has these characteristics:
 - Having a critical spirit and conflict tolerance
 - Appropriate managers supports of staff;
 - Having risk taking spirit in staff;

- Controlling individuals performances and the result of their activity instead of individual themselves;
- Using democratic leadership style;
- High sense of corporate identity among staff;
- Fair reward system
- Informal communication patterns
- Stressing on switching power strategy, staff partnership, (enriching) empowering human resources.
- (having) a creative and effective management and leadership in the organization;
- Executing appropriate programs for training and increasing creativity in staff;
- Appropriate and effective organizational technology (continues improvement/recovering the job procedures in order to provide better goods and services);
- Reasonable and scholarly approach towards organizational problems;
- Developing psychological security, confidence and trust in staff.

3. Organizational structure and its role on developing and increasing creativity and innovation

Many researches which have been conducted by various authors show that, one of the most important organizational elements in facilitating and increasing the innovation and creativity abilities in organizations is the appropriate structure with the targets. In their views, appropriate organizational structure is a default for organization success and development and its loss may cause organization failure. Weak and inappropriate structure can deviate the organization from its strategic goals, create conflict among staff, prevent effective and efficient decisions, increase office expenses and develops personnel problems. Rapid and dramatic changes in recent decades and today's complicated problems regarding the organization and management, has made this reality tangible that traditional organization designs, do not meet today's needs and there should be great changes in these structures; as in traditional structures creativity and innovation is limited because of specialization and exact definition of tasks and this limitation reduces the staff abilities and potentials (Ripley & Ripley, 1992). Many community scholars, know (called) Bureaucratic structures as a treat to freedom, creativity intellectual independence, in their opinion, pyramidal traditional structures, ruins creativity and innovation by making fear and stress (Johnson, 1997). Gareth Morgan, one of the scholars, also believes that product oriented pyramidal structures, are human capacity limiters in organizations. In his opinion, in these kinds of organizations, both organizations and staff are affected, so that the staffs are prevented from mental and individual growth chances and organizations loose most of their staff creativity (Morgan, 1997). Also, In Hughes (2003) opinion, hierarchy and Bureaucratic structures move slowly and instead of growing innovative people, it grows mechanical and passive individuals and instead of risk taking, strengthens conservative and escaping from danger behavior /spirit in managers and staff (Hughes, 2003). "Organizational structure" is a product of organizing process and is presented informally in the organizational graph. Organizational structure is the body and formal and informal system of communication, authority and responsibility which is developed within an organization. In Stephen Robbins (1990) opinion, each organizational structure is consists of 3 parts that whole types of (Mechanical) Bureaucratic organizational structures and non Bureaucratic (organic) organizational structures are created from the combination of these 3 components(Robbins, 2007). Here we shortly explain the three components of organizational structures and their relationships with creativity and innovation:

A. Centralization: in some organizations, senior managers take all the decisions and the junior managers just perform the senior manager's instructions. These kinds of organizations are called centralized.

In its contrast, there are organizations in which the decisions are taken by staff and junior managers who are involved directly in administration. These kinds of organizations are called" none centralized" (Robbins, 1990). In extreme organizational centralization, by considering the fact that junior staff, organizational hierarchy, have limited parts of authorities, the cannot implement their ideas and suggestions easily so the level of creativity and innovation reduces. (Montana & Charnov, 2000).

B. Formalization: the Second organizational pillar is called formalization. Formalization is regulations, methods and written documents that by their virtue the tasks, instructions, and orders that

organizations staff should follow and performed is clarified. In high formalization, as the job operator has least authorities on his job, its time and way of its performance, he cannot represent his new thoughts and ideas and thus the creativity and innovation puts on low level.

- C. Complexity: Complexity constitutes the range of separation within an organization. In other words complexity describes the amount of specialization (horizontal separation) the number of organizational hierarchy levels (vertical separation) and the range in which the organizational units are desperate geographically (spatial separation (Robbins, 2007).

Emphasis on dividing organizational tasks to detailed parts and smaller roles because that the variety and new units and various tasks be created in the organization and any one become responsible for his own limited task and the staff face some communicative and mental problems. Since, task specialization cause the behaviors to be mechanical and creates the problems such as dissatisfaction, ambiguity and inconsistency to staff and alienates the staff from the organization purposes and missions, in these situation the staff can not represent new ideas and suggestions for various organizational divisions and thus the level of creativity and innovation reduces significantly. Generally, if the organization three pillar, centralization, complexity and formalization are in high levels the structure of that organization is of mechanical (Bureaucratic and vertical) type and if the mentioned elements are in low level in the organization, the structure is of organic(non hierarchy and horizontal).

3.1. The research theoretical context (reframe) and analytical model

In this research “Stephen Robbins” triple dimensions of organizational structure assumption (centralization, formalization, complexity) is selected as the theoretical context (reframe). This research is done to consider the following assumptions:

- Formalization and emphasis on following the rules and absolute adherence of obligations is a preventer in Tabriz X Co;
- Emphasis on dividing the task to the simplest part and activity limitations is a preventer in Tabriz X Co;
- Emphasis on the structure senior managers external monitoring on junior staff and supervisors is a preventer in Tabriz X Co.;
- Providing no appropriate condition for junior staff and supervisors in decision making is a preventer in Tabriz X Co.;

4. Method of research, society and statistical sample

This research is based on purpose of practical researches and in terms of nature and the method of “squarely” and “Descriptive – navigate” study. Tabriz X Co. is selected as the spatial domain and the society of the research is all the Tabriz X Co. junior managers, super visors and staff involved in production line in different ways. All the involved personnel in Tabriz X Co. production line are about 1300. The method of sampling in the research is simple random sampling and in order to determine the statistical sample measure, the Cochran formula is used. The necessity and importance of doing this.

5. Research Tools

In this research, the data is collected squarely and through enquiries. The enquiry of the research contains 25 closed questions which are designed according to “Likert” five degree range in ordinal scale (rating) and is used for theoretical tests. So that after index making of research theories dependent variables, the effect of each factors and created indexes on creativity and innovation is considered descriptively and by poll taking from Tabriz X Co. staff in each question.

In adjusted/ regulated enquiry for research theoretical tests, the 25 closed questions were used as follows:

- Questions 1 to 7 for first theory test;
- Questions 8 to 12 for second theory test;
- Questions 13 to 18 for third theory test;
- Questions 19 to 25 for fourth theory test.

In order to collect and analyze 297 complete and perfect enquiries, around 350 enquiries were distributed among subjects so that at last 300 complete and perfect enquiries were analyzed.

5.1. Validity and Reliability study of research measurement tools

As the measurement tool of this research is of the ascertained type, before using them in the main step of collecting data it is necessary to scientifically gain relative confidence from their validity and reliability. In order to determining the research enquiry questions validity the “face validity” and “content validity” have been used. For this purpose, an inquiry is designed and all the questions for measuring the research dependent and independent variables are incorporated there. Then 20 inquiries are distributed among experts (experienced university and senior experts) and they were asked to represent their opinion on the amount of each indicators evaluativeness for determined variables in terms of lyric grading from complete appropriate items to inappropriate items. The analysis of the inquires showed that generally, the inquiry questions were appropriate and more than appropriate. So with regard to the relation of inquiry questions with theoretical principles, and as each variables has complete definition and its dimensions are clarified and the necessary consultation with experts have been done the validity of the research inquiry have been confirmed in its face and content. Also, in order to determining the weaknesses and strengthens of research inquiry and modifying inappropriate questions and for calculating the inquiry reliability the re-test method and Pierson Correlation factor and determination factor were used. The obtained grades for Correlation factor and determination factor as $r_{xy} = 0.93$, $r_{2xy} = 0.87$. Represent validity and precision of research measurement tool.

6. Result and Analyzing data

In this research, for analyzing descriptive statistics (tables of distribution frequency, average ...) and for analyzing collected data and inferential statistics assumption test, and for assumption tests in the context of inferential statistics” ratio test” were used. Also with regard to confidence interval estimation for the society real ratio, it was clarified (specified) that between 65.5 percent and 90.75 percent of staff in statistical society confirm the first assumption with 99 percent of confidence.

6.1. The results from No.1 assumption test

Since calculated test statistical quantity ($Z^* = 4.970$) is bigger than the Z of the table in error making level $\alpha = 0.01$ ($Z(0.01) = 2.326$), with regard to decision rule H_0 assumption is rejected and H_1 (ascertained claim) is confirmed. So with 99% of confidence we can say that centralization emphasis on following the rules and absolute adherence of obligations, , is a creativity and innovation preventer in Tabriz X Co., and thus the research first assumption is confirmed. Also with regard to confidence interval estimation for the society real ratio, it was clarified (specified) that between 65.25 percent and 90.75 percent of staff in statistical society confirm the first assumption with 99 percent of confidence.

6.2. The results from No.2 assumption test

Since calculated test statistical quantity ($Z^* = 4.290$) is bigger than the Z of the table in error making level $\alpha = 0.01$ ($Z(0.01) = 2.326$), with regard to decision rule H_0 assumption is rejected and H_1 (ascertained claim) is confirmed. So with 99% of confidence we can say that the emphasis on labor (work, job) division to simple parts and activities limitation, is creativity and innovation preventer in Tabriz X Co., and thus the research second assumption is confirmed. Also with regard to confidence interval estimation for the society real ratio, it was clarified (specified) that between 61.76 percent and 88.33 percent of staff in statistical society confirm the second assumption with 99 percent of confidence.

6.3. The results from No.3 assumption test

Since calculated test statistical quantity ($Z^* = 5.630$) is bigger than the Z of the table in error making level $\alpha = 0.01$ ($Z(0.01) = 2.326$), with regard to decision rule H_0 assumption is rejected and H_1 (ascertained claim) is confirmed. So with 99 percent of confidence we can say that emphasis on the structure senior managers external monitoring on staff and junior supervisors, in Tabriz X Co., is creativity and innovation preventer, and thus the research third assumption is confirmed. Also with regard to confidence interval estimation for the society real ratio, it was clarified (specified) that between 65.25 percent and 90.75 percent of staff in statistical society confirm the third assumption with 99 percent of confidence.

6.4. The results from No.4 assumption test

Since calculated test statistical quantity ($Z^* = 5.001$) is bigger than the Z of the table in error making level $\alpha = 0.01$ ($Z(0.01) = 2.326$), with regard to decision rule H_0 assumption is rejected and H_1 (ascertained claim)

is confirmed. So with 99 percent of confidence we can say that (the) lack of supervisors and junior participation in decision making in Tabriz X Co, is creativity and innovation preventer, and thus the research fourth assumption is confirmed. Also with regard to confidence interval estimation for the society real ratio, it was clarified (specified) that between 67.68 percent and 92.31 percent of staff in statistical society confirm the fourth assumption with 99 percent of confidence.

7. Discussion and Conclusion

So, as the results of the research assumption test presented, it is conclude that the factors of creativity and innovation preventer in organizational structure of Tabriz X Co, is based on the Table 1 order.

Table 1: The order of independent variables effect on research dependent variables, according to the company's staff polls (opinions) Tabriz X Co

Row	The research assumptions independent variables	Average rating
1	Lack of providing appropriate condition for staff and junior participation in decision making.	3.91
2	Formalization and emphasis on following the rules and absolute adherence of regulations.	3.63
3	Emphasis on senior external managers monitoring on junior supervisors.	3.52
4	Emphasis on labor division to the simplest part and activities limitation.	3.16

As this research assumption, is designed based on organizational structure elements, which means the first assumption is related to formalization element, the second assumption is related to complexity element (specialization) and the third and fourth assumptions are related to centralization elements, we can conclude that Tabriz X Co. traditional structure elements are creativity and innovation preventers as the order presented in Table 2.

Table 2: The order of creativity and innovation preventer structural elements in Tabriz X Co.

Row	Tabriz X Co. traditional structure elements	Average rating
1	centralization	3.76
2	formalization	3.63
3	Complexity(specialization)	3.16

So, as according to the obtained results, each of the triple elements of Tabriz X industrial Co. traditional structure (Bureaucratic) is preventer of creativity and innovation, we can generally conclude that the traditional (Bureaucratic) Tabriz X industrial Co. organizational structure is creativity and innovation preventer. So we can say that creativity and innovation do not have so acceptable status (position) in Tabriz X Co organizational structure.

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