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Research Article

STUDYING THE STRATEGIESFORPROMOTING PRODUCT INNOVATION IN A MANUFACTURING ENTERPRISE (CASE STUDY: MELLI AGROCHEMICAL COMPANY)

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ABSTRACT
Innovation has been introduced as an important factor for the nations Competitiveness, as well as one the of basic factors of international Competitiveness of them and the pivot around which output growth turns, the key motive for improving productivity of human resources, the basic source of social efflorescence and a key factor for industry dynamism in the terms of composition of organization and a vital element for improving productivity and as an important factor for economic success. This research tried to study the product innovation strategies in Melli Agrochemical Company. The research method was considered as descriptive survey. The statistical population of study consists of all staff of Melli Agrochemical Company and the researcher studied all 53 persons of statistical population but only 48 questionnaires were returned to the researcher. The data collecting instrument was a researcher- made questionnaire which its validity was established by Consulting supervisors and advisor, and its reliability by calculating Cronbach's alpha and achieving the desired level equaling 0.821. Statistical analysis of data with SPSS & LISREL showed that there is a significant and positive correlation between quality management activities, organizational learning ability, IT tools, process innovation and the product innovation, thus improving each of them can be a way to promote product innovation.

Keywords*: Innovation, Product Innovation, Process Innovation*

INTRODUCTION
Development of science and technology, globalization and growing competition strategies, impact business performance and the business environments are getting increasingly dynamic, complex and unpredictable. Due to these changes many enterprises are looking for new ways to conduct their own businesses to create more value. Change is not necessarily harmful, but it can create opportunities that enterprises should seek to exploit. What is important is the amount of innovation that an enterprise achieves compared to its competitor. Of course, achieving effective innovation is a complex problem. The ability of small and medium enterprises to meet the needs of customers depends mainly on their capacity to innovate and deliver new products with competitive pricing. Innovation is a key driver of sustainable competitive advantage and a challenge for small and medium enterprises (O'Regan *et al.*, 2006).
Innovation fostered from putting new and innovative ideas into practice by creativity. In fact, innovation is changing creativity and new ideas into action and result. Most of the innovations are obtained by deliberate and targeted searching for new opportunities and the process begins with conducting an analysis of opportunities (Kuratko and Hodgetts, 2001). According to Zott, (2003) definitions of innovation focus mainly on providing or creating new products and processes . Linder *et al.*, (2003) to define innovation, say "The implementation of new ideas that lead to value creation." From the perspective of the person engaged in the business, this means that innovation is the creation of a new product or process in order to increase competitiveness and overall profitability based on customer needs and requirements. The role and importance of innovation as a driver of competitiveness, profitability and productivity is well documented in the literature. Essentially innovation, from managerial point of view, is a process that begins from idea and ends in delivering a new product or service. Understanding the

process of innovation helps to focus on studying innovation in small and medium enterprises. Innovation Process in small and medium firms may include 2 types of fundamental or gradual change. In the incremental innovation, continuous changes are brought up that are visible in small enterprises in the form of continuous improvement. Some small and medium enterprises conceive that the cumulative benefits of gradual changes over time are more than the benefits that can be derived from fundamental changes (Humphreys *et al.,* 2005). And, in general, firms tend to pursue incremental innovation instead of fundamental one (Nijssen *et al.*, 2005)

Research History

The most general definition of creativity is creating something new. Some researchers have defined it according to individual characteristics. Gestalt psychologists and, more recently, cognitive psychologists have focused their research on the process of thinking. Some experts explain creativity regarding the product e.g.: Creativity deemed to shape and present an idea or a product that is both new and appropriate (correct, useful and valuable) (Soltani Tirani, 1999). Now, we peruse the definition of innovation from multiple perspectives. Dracker (1985) interprets innovation as a purposeful and organized search for changes (systematic innovation). Kantar (1995) believes that innovation is the process of collecting any new and useful idea to solve problems. In general, the formation of an idea, acceptance and implementation of new ideas in processes, includes products and services. Innovation is the process of taking innovative ideas and altering it into products, services and new methods of operation. According to Robbins (1998), innovation is an idea or a new theory applied in order to provide a product, process or a type of service. In short, innovation is a process of discovery, innovation and product development and the process of organizational change, disseminating and updating these processes (Shah and Kavoosi, 2009).

Types of Innovation

There are four main types of innovation:

Product Innovation: it leads tonew or improved products or services.

Process Innovation: it results in improved processes in an organization. This innovation emphasizes on improving the effectiveness and efficiency.

Marketing innovation: it is related marketing function, advertising, pricing and distribution and other functions of a product other than product development.

Management Innovation: it improves organization management methods.

Joseph Schumpeter in his research on innovation has mentioned four types of innovations including:

Introduction of new products or modify existing product quality

Creating a new market

New sources of raw materials and other inputs

Changes in industrial organization (Shah and Kavoosi, 2009)

Organizational Innovation

Today, organizations which have the ability to cope with changes are successful and can survive in the competitive world and they constantly apply new Thoughts and ideas (Mir *et al.,* 2011).

Daft (1998) believes that organizational innovation is to accept a belief or behavior that is new for the industry, market or public environment of the organization (Shah and Kavoosi, 2009). It can be said that the components of organizational innovation includes administrative, product and process innovation. In The following we deal with descriptions of each one.

Product innovation: product innovation provides a tool which refers to the development and delivery of new and improved products and services. In fact, it could be put like this: by product innovation we mean to what extent an organization leads in the delivery of new services, funding for research and development and so on (Mir *et al.,* 2011).Process innovation: process innovation provides a tool in order to maintain and improve quality and save costs and it includes the adoption of new or improved methods of production, distribution or service delivery. Indeed, by process innovation we mean to what extent the new technologies are applied by an organization and it puts new ways of doing business to test (Mir *et al.*, 2011).

Administrative innovation: it refers to new procedures, policies and organizational forms. It is about the degree to which the new managerial systems and … are used in administering. (Mir *et al.*, 2011)

Innovation Culture and its Dimensions

In the innovation culture, innovation refers to a complex process that aims to create, move, change and respond to new ideas. Successful organizations have the ability to institutionalize innovation in organizational culture and process of management because culture enters an organization through socialization processes and socialization, policies, programs and practices. As regards Innovation culture, administrative area includes the organization's ability to create ideas that can create value added. This category also provides the ability to instantly adjust systems and processes to changes in the competition environment. (Khosravian *et al.*, 2009)

Study Method

This study attempts to answer the following questions:

1- Is there a significant relation between lack of transparency in goals and organizational structure and formation of innovation in Melli Agrochemical Company**?**

2- Is there a significant relation between Weak organizational learning and formation of innovation in Melli Agrochemical Company**?**

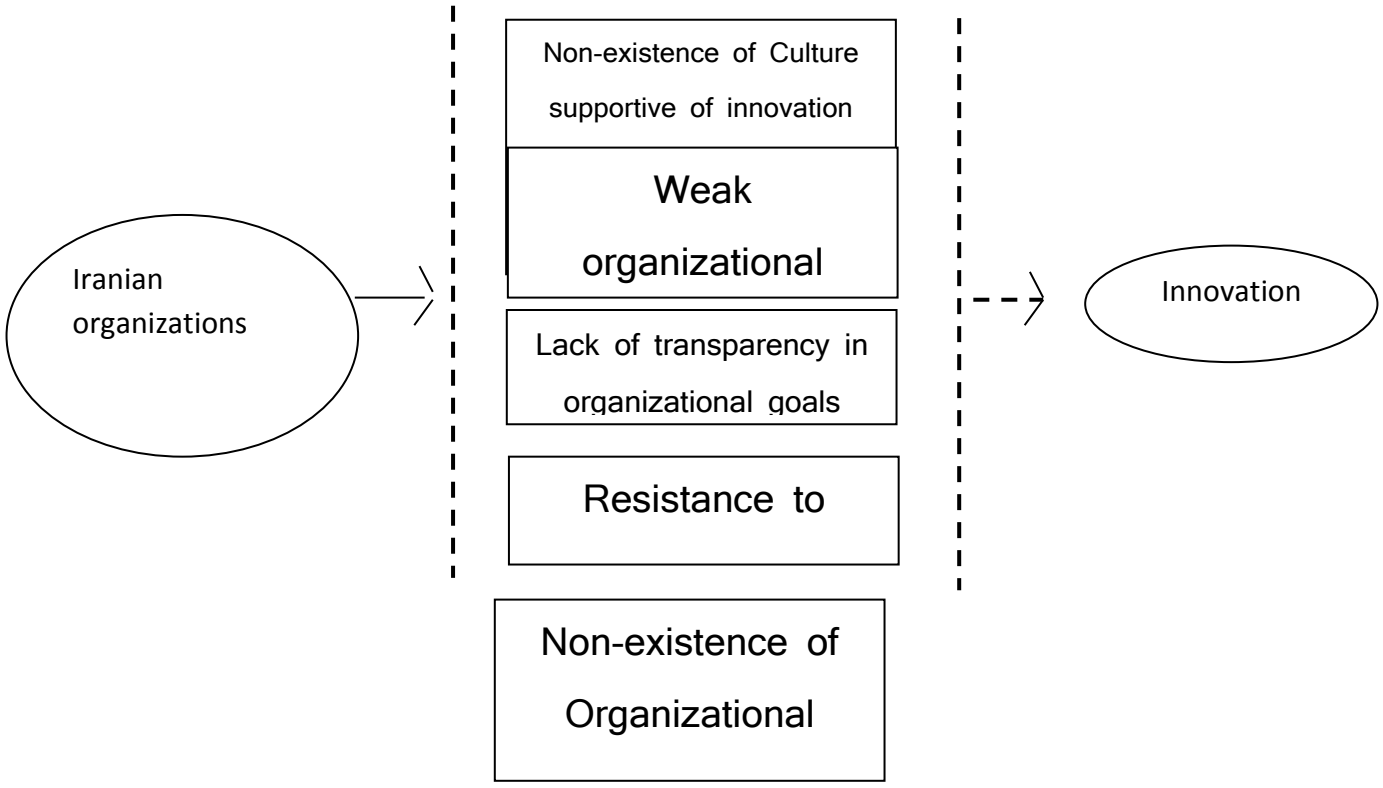
3- Is there a significant relation between Resistance to Change and formation of innovation in Melli Agrochemical Company**?**

4- Is there a significant relation between non-existence of Organizational compassion and formation of innovation in Melli Agrochemical Company**?**

5- Is there a significant relation between non-existence of Culture supportive of innovation and formation of innovation in Melli Agrochemical Company**?**

In order to answer each question a theory is proposed that examines its accuracy.

Research Variables in the Form of a Conceptual Model



METHODS AND MATERIALS

Research Methodology

The method of this research is survey-empirical whose approach is causal. The statistical population of the present study consists of managers and employees (63 people) of Melli Agrochemical Company which and it has been analyzed thoroughly. For data collecting, we have applied the library methods consisting of taking notes from books and scientific journals, including written materials or electronic resources and Field methods including questionnaire with 20 items (questions) based on the Likert scale. It should be noted that the reliability of the questionnaire was tested by Cronbach's alpha and due to it achieving 0.855; the reliability of the questionnaire was assured. SPSS statistical software facilities have been used for data analysis and regression-based analyses and parametric and its non parametric statistical hypothesis tests were exploited.

The Theoretical and Operational Definitions of the Research

Creativity: Cohen (1985) says creativity is making something out of nothing. Other authors also agree that new production process is “creativity".

Innovation: it is the successful implementation of creative ideas within the organization; In fact, creativity is a necessary condition for innovation but not a sufficient condition (Liao and Wu, 2010).

Melli Agrochemical Company**:** In 1986, it was constructed in Alborz industrial city of Qazvin, in an area of 17 hectares having multiple Production Hall in order to produce various products and specialized warehouses for reserving pesticides with adequate ventilation and temperature control, which has total area of 10,000 square meters with direct investment of Bank Melli Iran.

The activity sphere of this Company is producing pesticides using for herbs, livestock and household by utilizing the most advanced knowledge in the world has been capable of delivering its products having a quality in accordance with international standards. (Official website of Melli Agrochemical Company**)**

RESULTS AND DISCUSSION

Research Findings

The first hypothesis: There is a significant relation between lack of transparency in goals and organizational structure and formation of innovation in Melli Agrochemical Company**.**

In order to examine the existence or non-existence of a relation between lack of transparency in goals and organizational structure and formation of innovation in Melli Agrochemical Company**,** *chi-square test* for *independence* was carried out with the help of SPSS software facilities that according to statistic value equaling 36.35and critical value equaling 31.99993, the null hypothesis suggesting independence of two traits was rejected and dependence of two traits was established. After obtaining dependency of traits, to identify the type and severity of their dependence, the correlation coefficient was calculated between related items that in this case, correlation coefficient being -0.483, (Which is significant at the error level of %1 according to the data conditions, as well) shows a relatively strong inverse correlation between lack of transparency in goals and organizational structure and formation of innovation in Melli Agrochemical Company**.**

Studying the Coefficients of the regression equation shows that Partial correlation coefficient of dependent variable, which is formation of innovation in Melli Agrochemical Company**,** and independent variable, which is lack of transparency in goals and organizational structure, equals -0.325. On the other hand constant value in the regression equation was calculated -1.356.

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T Statistic**	**Significance Level**
	B	Standard error			
(constant)	-1.356	0.455		-0.526	0.518
UNC	-0.325	0.112	0.510	3.42	0.000

Model	Sum of Squares	Degree of Freedom	Average of Squares	F Statistic	Significance Level
Regression	10255.233	1	10255.233		
Residual	10894.326	73	149.237	68.718	0.000
Total	21149.559	74			

Model	Correlation Coefficient	Coefficient of Determination	Adjusted Correlation Coefficient	Estimation of a Standard Deviation
1	-0.483	0.233	0.217	11.2532

Predictors :(constant), UNC

The second hypothesis: There is a significant relation between Weak organizational learning and formation of innovation in Melli Agrochemical Company**.** In order to examine the existence or non-existence of a relation between Weak organizational learning and formation of innovation in Melli Agrochemical Company**,** *chi-square test* for *independence* was carried out with the help of SPSS software facilities that According to statistic value equaling 40.25 and critical value equaling 31.99993 at the level of 1%,the null hypothesis suggesting independence of two traits was rejected and dependence of two traits was established. After obtaining dependency of traits, to identify the type and severity of their dependence, the correlation coefficient was calculated between related items that in this case, correlation coefficient being -0.695, (Which is significant at the error level of %1 according to the data conditions, as well) shows a relatively strong inverse correlation between Weak organizational learning and formation of innovation in Melli Agrochemical Company**.**

Studying the Coefficients of the regression equation shows that Partial correlation coefficient of dependent variable, which is formation of innovation in Melli Agrochemical Company**,** and independent variable, which is Weak organizational learning, equals -0.369. On the other hand constant value in the regression equation was calculated 1.256.

Model	Unstandardized Coefficients		Standardized Coefficients	T Statistic	Significance Level
	B	Standard error	Beta		
(constant)	1.256	0.415		-0.526	0.518
WOL	-0.369	0.114	0.475	3.42	0.000

Model	Sum of Squares	Degree of Freedom	Average of Squares	F Statistic	Significance Level
Regression	11255.114	1	11255.114		
Residual	15834.221	73	216.907	51.889	0.000
Total	21149.559	74			

Model	Correlation Coefficient	Coefficient of Determination	Adjusted Correlation Coefficient	Estimation of a Standard Deviation
1	-0.695	0.483	-0.587	10.2411

Predictors :(constant), WOL

The third hypothesis: There is a significant relation between Resistance to Change and formation of innovation in Melli Agrochemical Company**.**

In order to examine the existence or non-existence of a relation between Resistance to Change and formation of innovation in Melli Agrochemical Company**,** *chi-square test* for *independence* was carried out with the help of SPSS software facilities that According to statistic value equaling16.38 and critical value equaling 31.99993, the null hypothesis suggesting independence of two traits was not rejected and independence of two traits was established. This implies that there is no significant relation between Resistance to Change and formation of innovation in Melli Agrochemical Company**.**

The fourth hypothesis: There is a significant relation between non-existence of Organizational compassion and formation of innovation in Melli Agrochemical Company**.**

In order to examine the existence or non-existence of a relation between Organizational compassion and formation of innovation in Melli Agrochemical Company**,** *chi-square test* for *independence* was carried out with the help of SPSS software facilities that According to statistic value equaling 19.52 and critical value equaling 31.99993, the null hypothesis suggesting independence of two traits was not rejected and independence of two traits was established. This implies that there is no significant relation between Organizational compassion and formation of innovation in Melli Agrochemical Company**.**

The fifth hypothesis: There is a significant relation between non-existence of Culture supportive of innovation and formation of innovation in Melli Agrochemical Company**.** In order to examine the existence or non-existence of a relation between Culture supportive of innovation and formation of innovation in Melli Agrochemical Company**,** *chi-square test* for *independence* was carried out with the help of SPSS software facilities that According to statistic value equaling 34.88 and critical value equaling 31.99993 at the level of 1%, the null hypothesis suggesting independence of two traits was rejected and dependence of two characteristics was established. After obtaining dependency of traits, to identify the type and severity of their dependence, the correlation coefficient was calculated between related items that in this case, correlation coefficient being -0.551, (Which is significant at the error level of %1 according to the data conditions, as well) shows a relatively strong inverse correlation between Culture supportive of innovation and formation of innovation in Melli Agrochemical Company**.**

Studying the Coefficients of the regression equation shows that Partial correlation coefficient of dependent variable, which is formation of innovation in Melli Agrochemical Company, and independent variable, which is non-existence of Culture supportive of innovation, equals -0.444. On the other hand constant value in the regression equation was calculated 1.014.

Model	Unstandardized Coefficients		Standardized Coefficients	T Statistic	Significance Level
	B	Standard Error	Beta		
(constant)	1.014	0.411		-0.426	0.000
UCSI	-0.444	0.118	0.521	3.42	0.000

Model	Sum of Squares	Degree of Freedom	Average of Squares	F Statistic	Significance Level
Regression	10255.233	1	10.255.233		
Residual	10894.326	73	149.237	61.441	0.000
Total	21149.559	74			

Model	Correlation Coefficient	Coefficient of Determination	Adjusted Correlation Coefficient	Estimation of a Standard Deviation
1	-0.551	0.304	-0.411	10.2141

Predictors :(constant), UCSI

Discussion and Conclusion

Innovation is a crucial and essential factor for enterprises to create value and sustainable competitive advantage (Linder *et al.*, 2003). Organizations, with more innovation, are more successful in responding to the changing environment and developing new capabilities that allow them to acquire better performance (Montes *et al.*, 2004). Mullen and Yals suggest that lasting organizational learning improve efficiency and effectiveness of innovations (Liao and Wu, 2010).

The main challenge in the field of innovation is how it can be created and improved.

With the first, second and fifth hypotheses of the study being accepted, it seems that lack of transparency in goals and organizational structure, Weak organizational learning, Non-existence of Culture supportive of innovation should be interpreted as the most serious Obstacles to the development of innovation in in Melli Agrochemical Company **(**As a telling example of the Iranian organizations, taking into account all its peculiarities)

Uncertainty of senior managers about implementation of long-term plans after leaving the management system is one of the factors contributing the lack of transparency in targets. So this requires acoherent system for all organizations that work independently or as part of a holding.

Innovation occurred in an organization at senior managers and executive managers will. If they look for for innovation and creativity, it will promote cultural and in the organization and creative people will be identified and undergo continuing education.

Problems must be shared with stakeholders in the organization, including all managers and employees, and their ideas and solutions must be reviewed, synthesized, summarized and exploited coherently.

As regards organizational learning, various units must be asked to report to their managers and supervisors on their monthly performance, including actions taken; mistakes made (due to lack of experience or expertise) tasks have not done as planned and finally, the monthly performance should be constantly compared and used to provide continuous improvement. Employees must be systematically epidemically cultured in order to learn from past mistakes and during their service in order to eliminate their professional weaknesses, after they were identified by managers and supervisors, in training inside and outside the organization.

When with a proper administrative mandate, all the listed items are implemented by a comprehensive plan in the organization, it can be said that an organization promotes creativity and innovation.

In this regard, the following proposals can be formulated to overcome the obstacles:

1- A study or studies should be carried out on the subject of the factors affecting the transparency in organizational objectives and structure in Iranian organizations (for example the organization studied in this research) in order to be able to use the results to improve clarity in organizational objectives and

structure that naturally can be considered a step towards removing one of the barriers to the formation of organizational innovation.

2- A study or studies should be carried out with a focus on organizational learning and improvement strategies in Iranian organizations so that their findings as a lever to overcome barriers to the formation of organizational innovation.

3- A study or studies should be carried out to achieve effective strategies to change organizational culture to an organizational culture supportive of innovation. And its results should be carefully considered and discussed by experts in this area.

4- Organizations should have a research and development unit which is independently responsible for studying corporate behavior in order to push people towards innovation.

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