



## Effect of Employees' Entrepreneurial Orientations on Knowledge Management in Small and Medium Enterprises in Iran

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### ABSTRACT

The present study aims to fill the gap and investigate the effects of entrepreneurial orientations (innovativeness, risk-taking and proactiveness) on knowledge management (knowledge creation, knowledge transfer, knowledge storage and knowledge application) in small and medium enterprises (SMEs). Descriptive and correlation (regression) methods were applied in the study. Target population of the research consisted of 15000 employees in 765 industrial production units of Toos Industrial Town which were active in the production of food, textile, chemic, cellulose, metallic and non-metallic mineral, electricity and electronics. The sample size is 375 and random stratified sampling method applied to collect data. The research tool was a standard questionnaire. Regression and correlation methods and SPSS software were used to assess the collected data. The findings revealed that there is a significant relationship between the entrepreneurial orientations and knowledge management. The results of regression analysis also showed that the factors of innovativeness, proactiveness and risk-taking have significant effects on the knowledge management changes; they also allocate more than 27 percent of knowledge management variance.

**KEYWORDS:** Entrepreneurship, Entrepreneurial orientations, Knowledge management, Knowledge management process, Small and medium enterprises (SMEs), Iran.

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### 1. INTRODUCTION

Knowledge is regarded as the main and invaluable asset in new ultra competitive environments in developed countries, since knowledge is the only factor which can evoke change and innovation in organizations. Today, applying knowledge is one of the fundamental challenges of developing countries.

A knowledge-oriented business is one of the essential goals of the fourth development plan of Iran. This cannot be reached without considering knowledge application in enhancing the capacity of different industries' production. The most important proceeding in the fourth development plan is undeniably knowledge management. Satisfying the three criteria of International Bank of Reconstruction and Development (IBRD), which are economic liberalization, government modernization and knowledge-oriented economics, is not possible without conducting many researches and projects. Achieving this goal, management researchers try to present applicable and efficacious resolutions to make the organizations capable of applying knowledge management.

Thus, looking for a proper framework to develop knowledge management by theoretical literature can be considerably advantageous, since it can shed light on the application of knowledge management and propose some principles to structuralize a system.

Different studies suggest that applying knowledge management can bring about some innovations in processes, practices, products and services. Entrepreneurial orientations act as a catalyst in making creativity and innovation in organizations (Gupta & Moesel, 2007). In other words, organizations require people with the ability of risk taking and creative thinking to make effectual knowledge management.

The present knowledge-oriented study has assessed people's entrepreneurial orientations which improve knowledge management processes and competitive advantages such as capturing and creating knowledge; therefore, this study has investigated the relationship between people's entrepreneurial orientations and knowledge management processes in small and medium enterprises.

Theoretical principles of the research, review of literature and research conceptual framework is respectively discussed in the second, third and fourth part of the article. Then, in the fifth, sixth and seventh parts, research methodology, analysis, conclusion and suggestions have been bringing up. Finally, research limitations and suggestions for future studies will be mentioned in the eighth and ninth sections.

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### 1.1. Knowledge Management

Understanding the task of knowledge management is dependent on defining it and its inseparable parts. Stonier states that data are a series of disconnected facts and observations. These facts may be converted to information by analyzing, cross-referring, selecting, sorting, summarizing or in some way organizing the data. Information can be worked up into a coherent body of knowledge. Knowledge consists of an organized body of information, such information patterns forming the basis of the kinds of insights and judgments which we call wisdom (Zins, 2007).

Tian & et al. (2009, cited in Tuomi, 1999) believe that data are raw facts, information is data endowed with relevance and purpose, and knowledge is valuable information. In other words, information is meaningless, but it becomes knowledge when it is interpreted and judged; therefore, it is assumed that we first need to have data before information is created, and only when we have information, knowledge can emerge.

Knowledge can be classified into two types of tacit and explicit knowledge. According to Nonaka and Konno (1998), tacit knowledge is personal and in individual's mind, so it is hard to formalize and the result of this knowledge can appear in each person's habits, views and actions. They believe that tacit knowledge can be converted into the explicit knowledge and it is presented variously as the two types of knowledge which one form the cognitive knowledge, views and mental models, and the other composes the skills and technical knowledge, but explicit knowledge can be easily transferred, processed and stored in databases and computers. It can be showed by vocabularies, numbers, data, formulas, specifications, instructions and so on. This kind of knowledge can be simply encoded and transferred systematically and formally between the individuals (Matin & Kashani, 2012).

An important and difficult stage in organizational knowledge is conversion of the explicit knowledge to the tacit one (Lindner and Wald, 2010). The knowledge management will be put into effect in an organization if these two types of knowledge can be transformed into each other and create competitive advantage for the organizations. This is the tacit knowledge which is the biggest challenge for knowledge management and its management can level the ground for individual and group learning, innovations and achievement to the competitive advantage in the organizations (Metaxiotis & et al., 2005). Alavi and leidner (2001) stated that different approaches toward knowledge lead to several inferences. If we consider knowledge as a goal, knowledge management will have to concentrate on knowledge framework and its storage and if we regard it as a process, it will have to stress on the knowledge trend and processes of creating, sharing and transferring knowledge. Also, if we consider knowledge as the superiority, knowledge management will focus on developing capabilities, understanding strategic advantages, and creating intellectual capital.

Knowledge management framework consists of practices such as recognizing, gaining, creating, storing, sharing, and applying knowledge by people and groups in an organization (Sun, 2010). In this respect, Wen (2009) defines knowledge management as a procedure for creating, gaining, sharing and applying knowledge to improve organizational performance.

All the researchers are agreed on the definition stated by Davenport and Prusak (1998): knowledge management means utilization and development of knowledge assets of an organization to achieve its goals. A managed knowledge involves two types of the purpose, explicit, and the subjective, implicit knowledge (Theriou & Chatzoglou, 2008). The management of this knowledge consists of all processes about identifying, sharing and producing the knowledge. This requires a system for production and maintenance of knowledge repositories and promotion and facilitation of knowledge sharing and organizational learning. Organizations which are successful in knowledge management consider knowledge as an organizational capital and develop the organizational values and rules to support knowledge production and sharing (Metaxiotis & et al, 2005).

### 1.2. Knowledge Management Process

Knowledge management process consists of capturing, creating, transferring, storing and applying knowledge. These are the essentials of the knowledge management.

Gandhi (2004) states that knowledge management is not a linear and static process, but it is a dynamic, cyclical process which requires employees to continuously engage with information, acquire new knowledge, apply it to improve decisions, create new information and knowledge in the process and apply that new knowledge to new situations.

There is no agreement on defining the knowledge management. There are many researchers who have proposed different kinds of knowledge management processes such as Probst and et al. (2000), Heisig (2001), Gold and et al. (2001), Bhatt (2001), Alavi and Lindner (2001), Lee and Choi (2003), Lawson (2003) and

Nielsen (2006), Considering different researches apropos of knowledge management, review of literature and consulting the expert and specialist, four stages have applied in this research which are as follows:

#### **1.2.1 Knowledge Creation**

Knowledge creation is one of the significant issues of the knowledge management. It is the main key to innovation in any organizations. According to Sandhawalia and Dalcher (2011), "knowledge creation is enabled by the processes and practices of interaction, feedback, innovation, brainstorming, and benchmarking." King and et al. (2008) argues that "knowledge creation involves developing new knowledge or replacing the existing knowledge with new content."

#### **1.2.2 Knowledge Storage**

We have to store the acquired knowledge as a capital for the organization; therefore, making an active organizational memory is needed to transfer required information to the receiver at a right time. Organizational memory includes knowledge stored in the minds of organizational participants, that held in electronic repositories, which has acquired and retained by groups or teams and is embedded in the business's processes, products or services and its relationships with customers, partners and suppliers(King& et al, 2008).

#### **1.2.3 Knowledge Transfer**

Knowledge transfer is defined as transferring right knowledge at right time to right receiver (Amalia &Nugroho, 2011). The captured and created knowledge must be available to employees for access. Organizations are then able to share this knowledge by employing communication networks that exist or create new ones. Facilitating this knowledge sharing, IT is used by group collaboration system. These systems can be emails, video conferencing (Sobahle, 2005).

#### **1.2.4 Knowledge Application**

Knowledge application is consisting of all practices which show that the organization is applying its knowledge (Bhatt, 2001). Mills and Smith (2011) believe that knowledge application means making knowledge more active and relevant for the firm in creating values. This applied knowledge can emerge as innovations, inventions and products of the organization.

### **1.3. Entrepreneurship and Entrepreneurial Orientations**

From the beginning of 80's decade, entrepreneurship in small and medium enterprises was of great interest all over the world (Klofsten, 2000). So, today everybody is aware of its importance in the economic development of the society (Anderson, 2011). Entrepreneurs have always had a significant role in society's improvement. They are at the top of different businesses and seek to find new opportunities. The most important tool which leads them to success is creativity. They show feedback to change and facing change is something natural for them. They seek and welcome change (Aghajani & Ganjehkhor, 2011). Entrepreneurship is about novel ideas of trading which can cause some changes in the market. It is discovering, evaluating and exploiting of opportunities in the market. In entrepreneurial marketing, Miller (1983) suggested that taking risky ventures into account and being pioneering in discovering proactive innovations are important qualities.

Many studies have conducted apropos of entrepreneurial orientations (Hitt & et al., 2001; Lumpkin & Dess, 1996; Barringer & Bluedorn, 1999; Miller, 1983; Covin & Slevin, 1991). Entrepreneurial orientations are of great importance in modern organizations and societies. As a matter of fact, through developing entrepreneurial orientations people can engage knowledge-based activities more than before (Hunt & Arnett, 2006). Gupta and Moesel (2007) defined entrepreneurial orientations as tendencies and behaviors that help organizations to distinguish new changes in their application of fresh resources and opportunities. Ying li (2012, p. 372) states that entrepreneurial orientations are an indicative of a series of processes, approaches, styles, methods and decision makings which support entrepreneurial opportunities. Regarding the researches which have done about entrepreneurship and entrepreneurial orientations, the most essential variables which exist in making entrepreneurship are as follows: innovativeness, risk-taking and proactiveness (Barringer & Bluedorn, 1999; Gupta & Moesel, 2007; Ying Li, 2012). Entrepreneurial orientations have the capability of being innovative, risk-taking, self-controlled in proportion to the actions and proactive in proportion to competitors to capture new opportunities of market (Hui Li &et al., 2008). Based on literature review of the research, three orientations of innovativeness, risk-taking and proactiveness have noted in this article.

Innovativeness as one of the entrepreneurial orientations can demonstrate the organizations' tendencies to support fresh ideas and encourage creative processes in the direction of products development and new services (Gupta & Moesel, 2007). The first people who paid much attention to the concept of innovation were Schumpeter (1934) and Lumpkin and Dess (1996). According to Covin & Miles (1999), innovation is the only dimension which is used and should be noted in all organizations. Even if there is no other orientation in

an entrepreneurial organization, the existence of innovation is undeniably needed to prove it as an entrepreneurial organization (Gurbuz & Aykol, 2009).

Risk-taking is also one of the worthy factors of entrepreneurial orientations. Various studies suggest that entrepreneurs have more risk-taking in proportion to other people in the society. In fact, risk means the probability of happening something at a definite time (lumpkin & Erdogan, 1999). Kropp & et al. (2008) have defined risk-taking as being intended to do ambiguous practices such as investing in unknown and new markets, the conflict between transactions and their uncertain results, and getting heavy loans.

Proactiveness was not noted as much as other dimensions of entrepreneurial orientations (Gurbuz & Aykol, 2009). It refers to a predictive overview which tends to take big steps on the path of exceeding other competitors and gaining new opportunities and attending in new-emerged markets. From one perspective, proactiveness can cause and distribute new opportunities in market (such as introducing new products before other competitors in a part of the market) and from other perspective, it can execute and exploit those opportunities to enhance information and meeting customers' needs (Nikoumaram & Heidarzadeh, 2007).

#### **1.4 Past Researches**

Although there is a rich literature in the knowledge management, few researches have conducted in which the relationship between entrepreneurial orientations and knowledge management has investigated, especially inside the country. The current study aimed to remove this scientific gap by reviewing and assessing the recent studies about this issue.

Ma'atoofi and Tajeddini (2010) have done a research entitled "The Effect of Entrepreneurship Orientation on Learning Orientation and Innovation: A Study of Small-Sized Business Firms in Iran". They have assessed 82 small companies in Tehran and concluded that there is a significant and positive relationship between entrepreneurial tendencies and learning tendency (such as responsibility, shared vision, and bias). It also has shown that there is a significant relationship between learning tendency and innovation.

Gupta and Moesel (2007) have conducted a study under the title of "The impact of entrepreneurial orientation on knowledge management in strategic alliances: Evidence from high technology SMEs". They have investigated the impact of entrepreneurial orientations on a firm's knowledge management practices in its supply chain alliances. They have collected needed data from top executives of small and medium-sized high technology firms located in the US. Their findings revealed that entrepreneurial orientations (risk-taking, innovativeness and proactiveness) are positively related to knowledge creation and acquisition in key customer alliances.

Hui Li and et al. (2008) have examined the relationship among entrepreneurial orientation, knowledge creation process, and firm performance. According to their hypotheses they have concluded that; there is a significant relationship between entrepreneurial orientation and firm performance, there is a significant relationship between entrepreneurial orientation and knowledge creation process and there is a significant relationship between knowledge creation process and firm performance.

Yuan Li and et al. (2009) have conducted a research under the title of "How entrepreneurial orientation moderates the effects of knowledge management on innovation" in China. They have concluded that there is a significant relationship between knowledge share inside a firm and innovativeness as a result of knowledge application. Their findings have also provided support for the significant impact of knowledge share inside a firm on knowledge application. Also, there is a significant relationship between knowledge share and entrepreneurial innovation variable.

Lee and Sukoco (2007) have done a study entitled "The effects of entrepreneurial orientation and knowledge management capability on organizational effectiveness in Taiwan: the moderating role of social capital". They have found in their study that entrepreneurial orientation has a positive influence on the capability of organization to manage their knowledge, on new product or process innovation, on the upgrading of their competence as well as on organizational effectiveness. Furthermore, knowledge management capabilities have a significant impact on innovation and organizational effectiveness. They have concluded that social capital moderates the effect on entrepreneurial orientation and knowledge management capabilities on the dependent variables.

Pérez-Luño and et al. (2011) have analyzed two modes of innovation that differ in their scope of newness – innovation generation and adoption. They have investigated the effect of entrepreneurial orientation on innovation and adoption and found that proactivity and risk-taking influence innovations generated.

## **2. Research Conceptual Framework**

Each researcher needs a conceptual framework for his/her study to be able to investigate the research's hypotheses, probable relationship between variables, and operational and conceptual definitions. In this study,

the most important factors of entrepreneurial orientation (innovativeness, risk-taking and proactiveness) and knowledge management processes (Knowledge creation, Knowledge transfer, Knowledge storage and Knowledge Application) evaluated; therefore, based on literature review, the following hypotheses are proposed:

H<sub>1</sub>: There is a significant relationship between entrepreneurial orientations and knowledge management processes.

H<sub>1a</sub>: There is a relationship between risk-taking and knowledge creation.

H<sub>1b</sub>: There is a relationship between risk-taking and knowledge transfer.

H<sub>1c</sub>: There is a relationship between risk-taking and knowledge storage.

H<sub>1d</sub>: There is a relationship between risk-taking and knowledge application.

H<sub>1e</sub>: There is a relationship between innovativeness and knowledge creation.

H<sub>1f</sub>: There is a relationship between innovativeness and knowledge transfer.

H<sub>1g</sub>: There is a relationship between innovativeness and knowledge storage.

H<sub>1h</sub>: There is a relationship between innovativeness and knowledge application.

H<sub>1i</sub>: There is a relationship between proactiveness and knowledge creation.

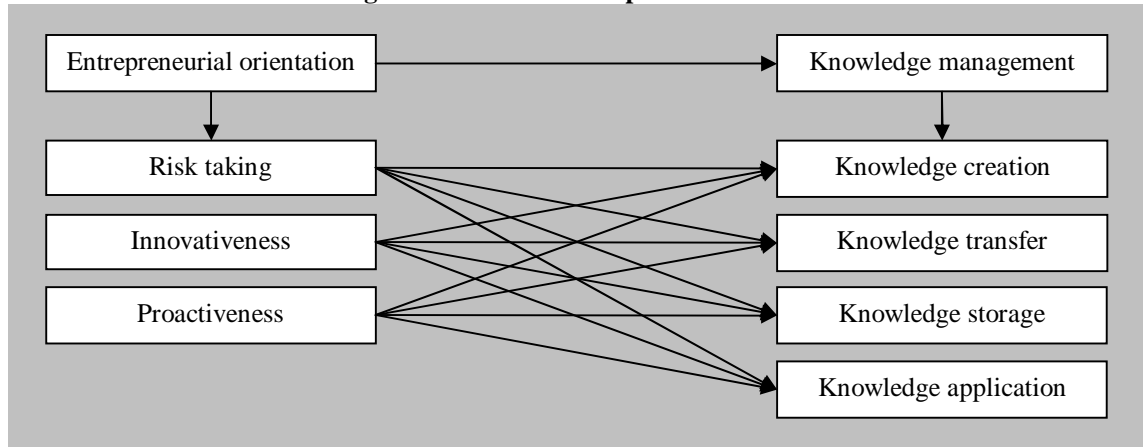
H<sub>1j</sub>: There is a relationship between proactiveness and knowledge transfer.

H<sub>1k</sub>: There is a relationship between proactiveness and knowledge storage.

H<sub>1l</sub>: There is a relationship between proactiveness and knowledge application.

H<sub>2</sub>: There is significant relationship between risk-taking, innovativeness, proactiveness and knowledge management changes.

**Figure 1. Research conceptual framework**



### 3. MATERIALS AND METHOD

Owing to the fact that this research intends to assess the relationship between entrepreneurial orientations and knowledge management, it is an applied, descriptive, correlation survey. It is also a cross-sectional study, since the needed data have assembled during a specific time from a specified target population.

#### 3.1. Research Population

Target population of this research includes 15000 employees of small and medium enterprises in Toos Industrial Town Companies. This town consists of 765 industrial production units which are producing food, textile, chemic, cellulose, metallic and non-metallic mineral, electricity and electronics.

#### 3.2. Sampling

Random stratified sampling method applied in this study and 375 employees were considered as the statistical sample based on Morgan Table. Two standard 5-point Likert questionnaires adopted and distributed between seven fields of different industries in the town. 324 questionnaires were returned among which 314 ones were statistically investigated.

#### 3.3. Measures and Statistical Methods

The first questionnaire included 12 questions for entrepreneurial orientations derived from Ma'atoofi and Tajeddini (2010), Gurbuz and Aykol (2009), Casillas and Moreno (2010), Li and et al. (2008), Naldi and et al. (2007). The second measurement tool was a knowledge management questionnaire consisting of 16

questions selected from Gold and et al. (2001), Lee and Choi (2003), and Lawson (2003). Descriptive (to describe demographic variables) and inferential statistics (such as Pearson correlation test, Regression method and Friedman test) were applied to analyze data by SPSS software.

**3.4. Validity and Reliability**

Face validity was used to validate the research tool. So, the questionnaires, as a pretest, were distributed between 5 professors and specialists. Then, they were amended based on their reforms. After that, a sample size of 30 people was chosen and the questionnaires were given to them. There are also some techniques to evaluate a research reliability, one of which is internal consistency. It can be calculated by Cronbach’s alpha coefficient. It is common approach in most of the researches and should be at least 0.7. The reliability of each variable in this research has calculated and shown in table 1.

**Table 1. Cronbach’s alpha coefficient of research variables**

Variables	Cronbach’s alpha	No. of questions	Sample size
Knowledge creation	%77	4	314
Knowledge transfer	%75	4	314
Knowledge storage	%79	4	314
Knowledge application	%81	4	314
Innovativeness	%91	4	314
Risk-taking	%89	4	314

**4. Data Analysis**

Table 2. presents the demographic profile of respondents in the research sample.

**Table 2. Demographic profile of respondents**

Demographics	Sex		Education				Age					Work Experience			
	M	F	Dip.	Adv. Dip.	Bsc.	MA	20-30	31-40	41-50	51-60	1-5	6-10	11-15	16-20	20<
Frequency (%)	77	23	24	29	39	8	18	29	39	14	29	34	15	9	13

Pearson correlation coefficient used to analyze the collected research data. The correlation matrix for constructs of entrepreneurial orientation and knowledge management processes has shown in table 3.

**4.1. Hypothesis Testing**

H<sub>1</sub>: There is a relationship between entrepreneurial orientations and knowledge management processes.

**Table 3. Correlation matrix for relationship between entrepreneurial orientation and knowledge management processes**

variable	innovativeness	Proactiveness	Knowledge storage	Knowledge transfer	Knowledge creation	Knowledge application	Risk taking
Innovativeness	1						
Proactiveness	0.299**	1					
Knowledge storage	0.398**	0.527**	1				
Knowledge transfer	0.590**	0.319**	0.593**	1			
Knowledge creation	0.340**	0.432**	0.659**	0.697**	1		
Knowledge application	0.339**	0.429**	0.563**	0.660**	0.723**	1	
Risk taking	0.424**	0.11**	0.278**	0.186**	0.16**	0.139*	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

According to table 3., there is a significant and positive correlation between entrepreneurial orientations and knowledge management. This correlation shows that a change in entrepreneurial orientation components will also change the knowledge management processes at the same direction in a way that whenever a variable increases, the other will rise too, and whenever it decreases, the other one will decrease too. Findings

support this idea that the highest correlations belong to two variables of innovativeness and knowledge transfer, and the least ones are between the two variables of risk-taking and knowledge application. H<sub>2</sub>: knowledge management changes.

**Table 4. Stepwise regression analysis for variables predicting the knowledge management**

Entered variables in each section	R	R <sup>2</sup>	F	df1	df2	B	T	Sig.
<b>Innovativeness</b>	0.43	0.18	216.78	1	313	0.451	11.25	0.000
<b>Innovativeness and proactiveness</b>	0.49	0.24	129.54	2	312	0.359	8.54	0.000
<b>Innovativeness, proactiveness and risk-taking</b>	0.52	0.276	78.519	3	311	0.278	7.24	0.000

Table 4. shows the F test and the sequence of variables entrance into the model estimation. As it can be observed the significance level of the relationships are all 0.001. According to the results, Innovativeness is the first variable entered to the analysis due to its zero correlation. Regarding the adjusted R<sup>2</sup>, it can be said that innovativeness can explain 18% of knowledge management variance. The second variable entered to the analysis is proactiveness which along with innovativeness could explain 24% of knowledge management in the second step. Finally, risk taking with innovativeness and proactiveness could all explain 27% of knowledge management variance in the model estimation.

#### 4. Conclusion and Recommendations

This article extended the theoretical literature in this field, since it is the first research which has examined the effect of employees’ entrepreneurial orientations on knowledge management in small and medium enterprises and has attempted to fill the scientific gap in this field. Second, owing to the fact that there is no single and unit definition for entrepreneurial orientation and knowledge management, the present study has tried to propose and design a new model by studying literature review and consulting with experts and specialists in this area. Third, this research has proved that there is a significant relationship between entrepreneurial orientations and knowledge management; therefore, managers can improve their employees’ knowledge-based activities through engaging them with entrepreneurial orientations (Hunt & Arnett, 2006).

In the first hypothesis, the effect of risk-taking on knowledge creation assessed. The obtained results showed that there is a significant and positive relationship between risk-taking and knowledge creation. Findings of this part of the research are similar to Gupta’s (2007) and Hui Li’s (2008) results. In the second, third and fourth hypotheses, the relationships between risk-taking and knowledge transfer, risk-taking and knowledge storage, and risk-taking and knowledge application were respectively examined. The results have supported this hypothesis that there is a significant and positive relationship between risk-taking and knowledge transfer, storage and application. Findings of this part are in the same direction with the findings of Gupta and Moesel (2007), Yuan Li and et al. (2009), Lee and Sukoco (2007).

In hypotheses 5, 6, 7 and 8, the relationship between innovativeness and knowledge creation, innovativeness and knowledge transfer, innovativeness and knowledge storage, and innovativeness and knowledge application assessed. Results of Pearson correlation coefficient have demonstrated that there is a significant and positive relationship between innovativeness and all principles of knowledge management. Results of the research by Gupta and Moesel (2007) have indicated that there is significant and positive relationship between innovativeness and knowledge creation. Findings of Yuan Li and et al. (2009) have shown that there is a significant relationship between innovativeness and knowledge transfer in China. Hui li and et al. (2008) have concluded that knowledge creation act as a mediator between entrepreneurial orientations (such as innovativeness), and there is also a positive relationship between innovativeness and knowledge creation. Lee and Sukoco (2007) have demonstrated in their research that entrepreneurial orientations are positively effective in an organization’s capability to control and manage its organizational knowledge in production and innovation.

Hypotheses 9, 10, 11 and 12 tested the relationships between proactiveness and knowledge creation, knowledge transfer, knowledge storage and knowledge application. According to the Pearson correlation coefficient, there is a significant and positive relationship between proactiveness and all factors of knowledge management processes. The findings of the research conducted by Yuan Li and et al. (2009) showed that there is a positive relationship between proactiveness and sharing internal knowledge (knowledge transfer) in the passing economic situation of China. The results of the study done by Gupta and Moesel (2007) indicate that proactiveness is positively effective in knowledge creation.

The second main hypothesis of the research investigated the probable changes of knowledge management which are the consequence of some changes in the variables of entrepreneurial orientations such as risk-taking, innovativeness, and proactiveness. The results of stepwise regression indicated that the variables of risk-taking, innovativeness and proactiveness can predict knowledge management changes. Therefore, the second main hypothesis was also supported which is along with Gupta and Moesel (2007), Hui Li and et al. (2008) and Yuan Li and et al. (2009).

Based on the findings in this research, the organizations ought to:

- ✓ Give freedom to employees to make some decisions on their job when it is needed.
- ✓ Welcome changes in the organizations and pay more attention to the innovative and risky decisions and give them priority over the old and conservative approaches.
- ✓ Pay more attention to the innovativeness in determining an organization's purposes and reward those who are contributing to this process and giving fresh and innovative ideas.
- ✓ Support innovative employees and apply a system of participative decision making.
- ✓ Adopt innovative practices and procedures before competitors and stabilize their position in the market by adopting competitive strategies and policies.
- ✓ Apply information technology to introduce new products and continuous training for employees and marketers to meet customers' satisfaction.

## 5. Recommendations for the Future Research

It is suggested to replicate this study with the same variables all over the country in different industrial towns for more generalization. The current study has just used three variables of innovativeness, risk-taking and proactiveness for entrepreneurial orientations. It is proposed to other researchers to investigate the effect of other variables such as independence and motivation. This study assessed the effect of entrepreneurial orientation on knowledge management processes. It is suggested to apply some other variables such as organizational culture, organizational structure and technology which belong to knowledge infrastructure capabilities. The research population of this research is small and medium firms. It is recommended to do similar studies in large enterprises with more employees and financial power.

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