



The Effect of Knowledge Management on Organizational Entrepreneurship among Agricultural Extension Experts in Kermanshah Province, Iran

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Abstract

In today's turbulent business environment, organizations face the need to rapidly respond to demands, explore new opportunities, apply evolving technologies, and create novel competitive advantages. Knowledge management (KM) and organizational entrepreneurship (OE) are two strategic tools through which companies can concurrently improve their competitive advantage while seeking new potential opportunities. Since KM and OE practically help to improve organizational performance through their own resources, they not only seem to be interrelated but they also influence each other. In this regard, the aim of the current study was to investigate the effect of KM on the OE among agricultural extension experts in Kermanshah Province, Iran. The population of this study consisted of all agricultural extension experts in Jihad-e-Agriculture management and centers of agricultural services in Kermanshah Province (N=536). Using Bartlett's et al. (2001) sampling table, 155 extension experts were selected as the sample using the proportionate stratified sampling method (n=155). The main instrument used in this study was a questionnaire whose validity was confirmed by a panel of experts, and its reliability was established by a Cronbach's Alpha coefficient ($\alpha > 0.70$). The results of multiple regression analysis revealed that KM components (knowledge creation, knowledge acquisition, knowledge organizing, knowledge storage, knowledge dissemination and knowledge application) had significant and positive effect on OE among agricultural extension experts in Kermanshah Province.

Keywords:

agricultural development, knowledge management, organizational entrepreneurship, Kermanshah Province

INTRODUCTION

Entrepreneurship research has progressively moved from the study of individual traits to the features of the entrepreneurial organization (Morris & Kuratko, 2002; Zahra, 1999). As the twenty-first century unfolds, entrepreneurial actions are viewed as critical pathways to competitive advantage and improved performance in organizations of all types, sizes, and ages (Brown et al., 2001; Covin et al., 2000; Kuratko et al., 2001). Entrepreneurship is the mindset and process to create and develop economic activity by blending risk-taking, creativity and/or innovation with sound management, within a new or an existing organization (Commission of the European Communities, 2003). Organizational entrepreneurship is considered as a strong means for revitalizing current organizations and as a tool for developing and improving the businesses, increasing profits and income, as well as proactively developing new products, services and processes (Yeazdanshenas, 2014).

Evidence suggests that organizations which learn how to facilitate entrepreneurship in its various forms are more competitive and perform better than those that do not (Zahra & Covin, 1995). Some even believe that the lack of attention focused on implementing entrepreneurial actions successfully in the fast-paced and complex economy will result in failure (Zahra, 1999). With an increasingly diverse constituency, new technologies, and changes in traditional funding sources, the agricultural extension system, like other established systems, is exploring entrepreneurship theory and practice (Fox, 2005).

As society changes, new technologies evolve, and competition increases, the process for carrying out the extension mission is being challenged (King and Boehlje, 2000). A variety of forces have put extreme pressure on all educational institutions to become more dynamic, particularly the agricultural extension system (King, 1999). These pressures include rapid development in the availability of information, expectations of faster response time to problems, greater demand for stakeholder involvement in decision making processes, and a changing funding portfolio (King & Boehlje, 2000; Miller, 2005).

In a rapidly changing world, organizations need to continually identify new opportunities beyond existing ones if they are to survive (Hamel et al., 1989; Mintzberg, 1994).

King and Boehlje (2000) predicted that extension would continue to have difficulty coping with the transition to a marketplace environment. Extension personnel must create a shared vision, be proactive in dealing with the future, support change, champion the holistic view of extension, and create an environment for innovation (Buchanan, 1993). Encouraging innovative activity involves assessing current strategies and continuously implementing an entrepreneurial process and principles (Fox, 2005).

In current unstable and complex conditions, the organizational innovation is one of the most important sources of sustainable competitive advantage (Brockman & Morgan, 2003). Innovation, the process of collecting, sharing, and applying knowledge, has become the implicit and objective (Hung et al., 2010), and that is why in an innovative organization, your knowledge is of great relevance for the use of resources (Brockman and Morgan, 2003). The emergence of knowledge-based economies has accorded importance to effective management of knowledge. The effective management of knowledge has been described as a critical ingredient for organization seeking to ensure sustainable strategic competitive advantage (Omotayo, 2015). The management of knowledge has generated considerable interest in business and management circles due to its capability to deliver to organizations, strategic results relating to profitability, competitiveness, and capacity enhancement (Jeon et al., 2011). Thus, companies and organizations that have high levels of KM are able to react to changes rapidly and provide new ideas and enhance innovation in products and services (Scarborough, 2003). In fact, effective KM facilitates relation between knowledge and innovation process and improves innovation by improving views and new abilities (Lakshman, 2009). As mentioned earlier, building ideas and innovation are fundamental things to count factors entrepreneurship processes (Barringer & Ireland, 2010). Therefore, it was concluded that KM has critical role

in supporting and creating OE (Naderi et al., 2016).

In this regard, Drucker (1995) anticipated a new kind of organization—to an age when people would generate value with their minds more than with their muscle—since at least 1959, when in *Landmarks of Tomorrow*, he first described the rise of “knowledge work.” Three decades later, Drucker became convinced that knowledge was a more crucial economic resource than land, labor, or financial assets, leading to what he called a “post-capitalist society.” And, shortly thereafter (and not long before he died in 2005), Drucker declared that increasing the productivity of knowledge workers was “the most important contribution management needs to make in the 21st century.” (Drucker, 1995). Accordingly, having natural resources is not as important as knowledge, even organization based on knowledge gain abilities that can with little force produces huge power (Alvani et al., 2007). It can, then, be concluded that current speed of changes cause recognize and prediction of changes not evenly, and similarity, past experiences cannot guarantee future success such that we can tell that this current era is the era of lack of continuity and prediction. The Ruling paradigm based on modern societies change, guidance organization toward creating and innovation, and we can find this important in its entrepreneurship; therefore, each organization that can accommodate with global changes can survive in this turbulent environment and move towards the coast of surviving and progress (Nahid, 2009).

In fact, today's organizations are active in an environment that is characterized by the most rapid and complex changes. No Matter how complex the issues are; they need more time to solve them to accommodate a faster rate of change, the more things change and innovative solutions need to solve them. Thus, assuming the existence of stable, traditional organizations that have no longer able to meet the needs of today's business world. Therefore, the future of high speed in response to changes in organizations that have the flexibility to implement changes will have on innovation and continuous improvement in its institutional and organiza-

tional learning capability is an integral part of it. Formation of these developments in the context of OE is possible (Naderi et al., 2016). In the entrepreneurial organization, personnel try to gain senior management supports and use of resources to innovation in new product development is driven organization and process improvement, innovation, entrepreneurship and the output of the key organizations in its quest for success in the competition such that the physical resources are not important, but the human resources are very critical for today's organizations (Civi, 2000). Therefore, today we need investment in the human capital and provide the bed to breed creativity, innovation and entrepreneurship factors, use their brain effectively and knowledge as key factor to development in the era of ICT (Bollinger & Smith, 2001).

We find that KM and OE have an important role to play in the changing world and create good opportunities for organizations that understand this subject (Khanbabae & Lajevardi, 2007). So that although entrepreneurship have familiar with KM issues, but the review of existing literature in this area suggests that few studies have explored the effect of KM on OE among agricultural organizations. The agricultural extension is one of the most important institutions involved in knowledge creation, storage, and change is, in fact, one of the main elements of the agricultural knowledge and information system (Pezeshkirad et al., 2011). In addition, since Kermanshah Province, with convenient features to develop the agricultural sector (in terms of capacity area) can be seen as an important agricultural hub for the development of Iran's economy has the important role in the future (Pourjavid et al., 2011). Accordingly, human resources development among agricultural extension experts in Kermanshah Province has a critical role in the development of agriculture in this province as an agricultural hub in the country. Accordingly, the aim of this study was to investigate the effect of KM on OE among agricultural extension experts in Kermanshah Province, Iran. Findings can guide extension organizations in making decisions and developing behaviors that enhance extension activities, increase non-

appropriated funding, and better leverage national, provincial, and local funding to continue fulfilling the mission of the extension organization in Iran.

Experimental studies and hypothesis

KM and OE are considered to be among the most popular common strategies for organizational growth and survival in the present competitive environment (Al-Swidi & Mahmood, 2012). The strategic relevance of KM and OE serves to attract the growing attention of a number of academic and practitioners over the last few decades (Aliyu et al., 2015). Empirically, many studies supported the significant impact of KM (Nonaka, 1994; Liebowitz, 1999; Mary, 2004; Krueger, 2007; Madhoushi et al., 2010; Nazem et al. 2010; Madhoushi & Sadati, 2011; Abdeali & Moslemi, 2013; Hadizadeh, 2013; Aliyu et al. 2015; Salih et al. 2015; Ladib, 2015; Naderi et al., 2016) on the organizational entrepreneurship.

Madhoushi and Sadati (2011) in a sectional study to examine the impact of KM on OE in small and medium-scaled businesses engaged found a significant relationship between the knowledge acquisition, knowledge sharing and knowledge application and OE. The results of their study showed that employing knowledge sharing and knowledge application has a directly significant effect on OE. Mary (2004) in a study entitled "leadership is based on the relationship between KM and organizational culture", the results showed that organizations that have strong KM and organizational culture are strong in acquisition of knowledge and information and in the analysis of complex situations. In support of this claim, Smith et al. (2006) also believes that the environment has a significant impact on human attitudes toward themselves and others, this type of management dealing with personals, it causes emergence of entrepreneurial behavior as a vital facilitator. Liebowitz (1999), in a seminal study, found a significant relationship between knowledge strategy and entrepreneurship. He believes that one of the key factors for successful KM program is designed to have a clear strategy. In this context, Nazem et al. (2010), in a study, confirmed the

relationship between KM components and entrepreneurship. Also, Ansari and Tabrizi (2012) in a study confirm the impact of KM on OE in Malaysian companies.

Abdeali and Moslemi (2013), in a study, showed that there is a significant relationship between knowledge management and organizational entrepreneurship, and also, there is a significant and strong relationship between the components of knowledge management (except the knowledge application), which includes the processing capabilities (knowledge acquisition, knowledge conversion, and knowledge retention) and infrastructure capabilities (cultural, structural, and Technology). Based on the results, it was found that, no significant relationship exists between the use of knowledge as an independent variable and organizational entrepreneurship as a dependent variable in the Alfa Sam Company of Isfahan. Aliyu et al. (2015), in a study, showed that knowledge management has a significant and positive relationship with entrepreneurial orientation, and organizational culture is found to partially mediate the relationship between knowledge management, entrepreneurial orientation and business performance. Salih et al. (2015), in a study, argued that there is an indirect effect of knowledge management practices in terms of knowledge creation and knowledge sharing on the characteristics of entrepreneurial organization in the presence of only the entrepreneur style. Ladib (2015) in a study confirms the effects of capacity knowledge management on entrepreneurial orientation in the best Tunisian Companies. Naderi et al. (2016) in a study entitled "the role of knowledge management (KM) in organizational entrepreneurship (OE) among agriculture extension workers at Kermanshah Township" showed that the KM components (knowledge creation, knowledge acquisition, knowledge organizing, knowledge storage, knowledge dissemination and knowledge application) were the main predictors of OE among agriculture extension workers. Accordingly, the research hypotheses are formed as follows:

H1: Knowledge creation has positive and significant effect on OE among agricultural extension

experts in Kermanshah Province

H2: knowledge acquisition has positive and significant effect on OE among agricultural extension experts in Kermanshah Province.

H3: knowledge organizing has positive and significant effect on OE among agricultural extension experts in Kermanshah Province.

H4: knowledge storage has positive and significant effect on OE among agricultural extension experts in Kermanshah Province.

H5: knowledge dissemination has positive and significant effect on OE among agricultural extension experts in Kermanshah Province.

H6: knowledge application has positive and significant effect on OE among agricultural extension experts in Kermanshah Province.

MATERIALS AND METHODS

Design of the study

This study was quantitative in nature and applied in purpose, which was carried out using descriptive- correlational research design.

The sample

The statistical population of this study consisted of all agricultural extension experts in Jihad-e-Agriculture Management and Centers of Agricultural Services in Kermanshah Province (N=536). Using [Bartlett's et al. \(2001\)](#) sampling table, 155 of them were selected as the sample using the proportionate stratified sampling method (n=155).

Instruments

The main instrument employed in this research study was a standardized questionnaire, which consisted of three parts: (a) personal and professional characteristics of the agricultural extension experts; (b) knowledge management; and (c) organizational entrepreneurship. In the second and third parts of the questionnaire, the researchers adapted [Lawson's \(2003\)](#) and [Fox's \(2005\)](#) scales, respectively. The 24 items about KM comprised items addressing the knowledge creation (4 items), knowledge acquisition (4 items), knowledge organizing (4 items), knowledge storage (4 items), knowledge dissemination (4 items) and knowledge application (4 items)

([Lawson, 2003](#)). The 25 items about OE comprised items addressing the entrepreneurial orientation (7 items), and entrepreneurial management (18 items) ([Fox, 2005](#)). The each statement in the questionnaire was rated by respondents using a five-point Likert scale (from 1=entirely agree, to 7=entirely disagree). The validity of the questionnaire was confirmed by a panel of experts (Faculty members in the Department of Agricultural Extension and Education and Entrepreneurship at Razi University, Kermanshah Province, Iran) and its reliability was established by a Cronbach's Alpha coefficient ($\alpha > 0.70$).

Data analysis

Data was analyzed by SPSSwin23 software in two parts of descriptive (frequency, percentage, mean, minimum, maximum and standard deviation) and inferential (correlation analysis and multiple regression) statistics.

RESULTS

The mean age of the agricultural extension experts in this study was 36.17 years (SD=10.77) and their work experience mean was 15.11 years (SD= 9.68). The majority of the agricultural extension experts were male (68.4%) and 48 of them (31.6%) were female. The majority of respondents were married (61.8%) and 58 of them (38.2%) were single. The educational level of the majority of the agricultural extension experts were B.Sc. (89.6%), and 14 were M.Sc. (10.4%). The majority of respondents had graduated with an agricultural major (73.8%) and 38 of them (26.2%) had graduated from other majors.

A Pearson correlation coefficient was used to examine the relationship between KM components and OE among agricultural extension experts in Kermanshah Province (Table 1).

The results in Table 1 reveal that KM components, namely knowledge creation, knowledge acquisition, knowledge organizing, knowledge storage, knowledge dissemination and knowledge application have positive and significant correlation with OE among agricultural extension experts in Kermanshah Province. In other words, it can be stated that the increase or decrease in

Table 1
Mean, SD and Correlation Matrix of Constructs

Constructs	Mean	SD	1	2	3	4	5	6	7
1- OE	4.08	1.04							
2- Knowledge Creation	4.04	1.25	0.81**						
3- Knowledge Acquisition	3.70	1.53	0.77**	0.65**					
4- Knowledge Organizing	4.11	1.36	0.68**	0.54**	0.66**				
5- Knowledge Storage	3.90	1.49	0.78**	0.69**	0.61**	0.34**			
6- Knowledge Dissemination	3.80	1.39	0.85**	0.74**	0.69**	0.56**	0.62**		
7- Knowledge Application	4.40	1.28	0.60**	0.37**	0.29**	0.43**	0.35**	0.47**	

** p<0.01

the amount of KM components among agricultural extension experts in Kermanshah Province the amount of OE among them also increase or decrease.

The multiple linear regression method was used to model the linear relationship between a dependent variable and some independent variables (Dong et al., 2008). In an ideal model, independent variables should not be related among themselves, commonly known as the problem of multicollinearity, as indicated by their respective values of variance inflation factor (VIF), being above 10 (Hasheminasab et al., 2014). VIF and tolerance index showed that there was no multicollinearity among variables and the coefficients determined by this model probably are the best values (see Table 3).

The residual from the regression model were plotted to demonstrate assumption violations (Hasheminasab et al., 2014). Normal plot and normal distribution histogram of the standardized residuals are shown in Figures 1 and 2. The normal plot of the residuals in Figure 1 had a straight-line appearance. Also histogram with normal overlay of the distribution of the

residuals showed that the measurement errors in the dependent variable (OE) were normally distributed (Figure 2). These results indicated goodness of the model for predicting OE using selected variables.

As a second step, determination coefficient (R^2) was used to determining the effects of KM components as independent variables on OE as dependent variable by fitting a linear equation to the observed data (Table 2).

The statistical model developed by enter multiple regression explained 92% ($R^2 = 0.92$) of the total variation within the OE while the remaining 8% probably be due to residual effects. Analysis of variance (ANOVA) for this model was shown in Table 2. When all measured variables were present in the prediction model by enter multiple regression, ANOVA showed that the model was high significant ($F= 296.35^{**}$, $P<0.01$).

t-test and standardized coefficients (β) calculated for all variables separately (Table 3). The results in Table 3 revealed that all KM components significantly contributed to the model at the 1% of probability; so, it can be said that all KM

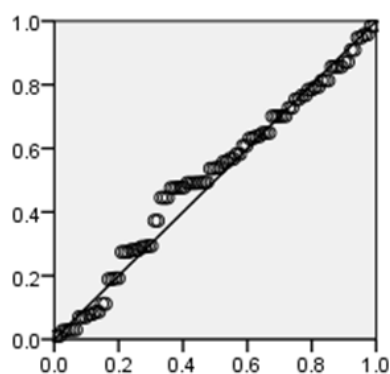


Figure 1. Normal plot of the standardized residual

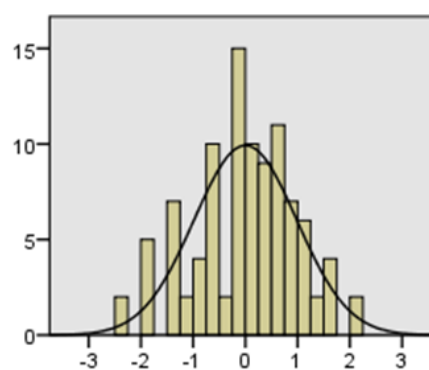


Figure 2. Normal distribution histogram of the standardized residual

Table 2
Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error	F	p-value
1	0.96	0.92	0.920	0.30	296.35	0.000

Table 3
Coefficients of Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-value	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Constant	.403	.102	-	3.94**	.000	-	-
Knowledge Creation (X ₁)	.114	.032	.137	3.51**	.001	.63	2.91
Knowledge Acquisition (X ₂)	.088	.027	.129	3.30**	.001	.63	2.94
Knowledge Organizing (X ₃)	.137	.026	.177	5.25**	.000	.77	2.19
Knowledge Storage (X ₄)	.215	.024	.307	8.86**	.000	.74	2.32
Knowledge Disseminating (X ₅)	.211	.030	.280	7.12**	.000	.62	2.97
Knowledge Application (X ₆)	.157	.022	.193	7.00**	.000	.91	1.46

** p<0.01

components were important to be presented in modeling of OE. Therefore, all hypotheses (H1-H6) were confirmed. Accordingly, the predicting model equation for OE is formulated by using KM components as follow:

$$OE = 0.403 + 0.0114X_1 + 0.088X_2 + 0.137X_3 + 0.215X_4 + 0.211X_5 + 0.157X_6$$

Furthermore, to determine the relative importance of independent variables, standardized coefficients (beta) were considered. This statistics shows the effect of each independent variable separately from the effects of other independent variables on the dependent variable (Shiri et al., 2013). Accordingly, the most influential independent variable on the dependent variable (OE), was the knowledge storage variable with $\beta = 0.307$. This means that a unit change of standard deviation of the knowledge storage variable, explains 0.307 of unit change in standard deviation of the OE. Other important variables influenced the dependent variable were: the knowledge dissemination with $\beta = 0.280$, the knowledge application with $\beta = 0.193$, knowledge organizing with $\beta = 0.177$, knowledge creation with $\beta = 0.137$, and the knowledge acquisition with $\beta = -0.129$.

DISCUSSION

This study aimed to contribute to agricultural extension organizational development as well as to the literature on organizational entrepreneurship. It explored the effect of knowledge management components on the organizational entrepreneurship among agricultural extension experts in Kermanshah Province. Because a positive relationship was found, it can be contended that the knowledge management framework can be used to address factors that stimulate or inhibit entrepreneurship in agricultural extension organization. The findings of this study are consistent with those of the previous studies that established a significant and positive effect of knowledge management components on the organizational entrepreneurship (Madhoushi et al., 2010; Madhoushi & Sadati, 2011; Salih et al. 2015; Ladib, 2015; Naderi et al., 2016). In sum, knowledge management creates a culture within which the value of knowledge and application thereof is identified and communicated. Such a culture encourages knowledge-based processes and programs, such as entrepreneurship. A knowledge management culture also creates behavioral change toward creation, sharing, knowledge acquisition and storage of knowledge, e.g., through perform-

ance measurement. Knowledge management creates a culture conducive to entrepreneurship in organizations.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study revealed that the KM components (knowledge storage, knowledge disseminating, knowledge application, knowledge organizing, knowledge acquisition, and knowledge creation) play an important role in promoting and developing OE among the agricultural extension experts. Accordingly, experts can use these findings to improve and promote OE among agricultural extension organization and other organizations. In other words, improvement and promotion of the main factors that create knowledge management can lead to the promotion of organizational entrepreneurship in the organization, and then, promote the potential for innovation and development in the organization, and provide a competitive advantage for the organization.

It is recommended that agricultural extension organizations increase and support practices and processes, encouraging and fostering knowledge management through increased dialogues and informal meetings among employees, as well as the revitalization of horizontal cooperation among departments through the promotion of a culture of cooperation and teamwork, and the adoption of challenging and competitive goals that are incentive driven. In addition, revitalization of knowledge management can be achieved by holding team, department level and cross departmental workshops to promote and foster knowledge creation, knowledge acquisition, knowledge organizing, knowledge storage, knowledge dissemination, and knowledge application.

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