

The Role of KM Tactical Factors in Supply Chain Management for Gaining Competitive Advantage

Rooghayeh Sadat Koochakzadeh^{#1}, Sara Behzadi^{*2}

¹Master of Public Administration, University of Sistan and Baluchistan, a member of the Pay am E Noor University of Fars, Iran

²Master of public Administration, University of pay am E noor,, a member of the Pay am E Noor University of Fars, Iran

Abstract- Supply chain management (SCM) has assumed a leading operations strategy position in both manufacturing and service industries, and over the past 10 years companies have seriously implemented supply chain management strategies in their organizations. knowledge management (KM) is a major enabler of supply chain management, and is a critical element in information intensive and multi-cultured enterprise environments. The present study aimed to investigate the role of KM tactical factors in gaining competitive advantage in organizations. For this purpose, four tactical factors of KM (knowledge acquisition, knowledge sharing, learning from KM process, and knowledge application) and five indicators of gaining competitive advantage (timely supply of products) were studied and the relationships between them were analyzed. The statistical findings confirmed the effect of KM tactical factors on gaining competitive advantage. In addition, the results indicated that KM process should be scientifically implemented by using experts to gain competitive advantage. Creating the necessary infrastructures and appropriate acculturation seem essential.

Keywords: KM, Supply Chain Management, advantage, information technology

1. Introduction

The experts of management sciences named the 1980s as quality movement decade (emphasizing that all employees should use their intellectual power better to achieve a better quality), the 190s as the re-engineering decade (using technology to improve business processes and reduce costs), and the 2000s as KM decade [1].

As the above-mentioned history indicated, KM is one of the new subjects in the area of management with a

history of 20 years. Nonaka introduced organization with a new idea in an article entitled “The Knowledge Creating Company” in 1991. Based on the speed of technologies and arrival of new products, he considered an organization successful when it continuously produces new knowledge, shares it extensively in the organization, and replaces it rapidly in new technologies and products.

Today, knowledge is the most important sustainable competitive advantage in organization. Resource-based approach has become the knowledge-based approach [2-5]. Knowledge is currently the most significant variable for the all-round development of organizations and firms. Knowledge refers to a set of human skills and capabilities associated with the awareness of better production methods. Such a perception on knowledge is highly universal in current organizations. For this reason, organizations seek to exploit their knowledge resources and their surrounding environment timely and appropriately. Such an approach developed the concept of KM and attracted the attention of many managers and scholars. Thus, using KM by individuals, organizations, and societies seem critical for increasing the efficiency and effectiveness. In other words, it is completely necessary that knowledge acquisition methods from internal and external resources of organizations and knowledge storage, sharing, and application are promoted.

2. Problem statement

Competition and creation of methods for gaining competitive advantage have been considered by

organizations and manufacturers of products and services since a long time ago, so that different factors caused gaining competitive advantage since the era of slavery.

Today, knowledge has the main role in creating, developing, and retaining sustainable competitive advantage in developed and developing countries. In Iran, the fourth and fifth social, economic, and political plans have paid a specific attention to the growth of knowledge-based organizations, so that the fourth development plan was named “knowledge-based economic development with an emphasis on global interaction”. However, the reality is something else. Few studies can be found to address knowledge development in Iranian organizations. It can be said that localized studies are required to develop knowledge-based organizations and policy-making in this area, deal with the problems of economic, social, and political systems, and provide some solutions for gaining competitive advantage at the present era. Modern organizations should consider the competition and victory in the competition field beyond borders.

Today, it is believed that knowledge (especially information-based knowledge) can be a powerful and strategic weapon in organizations. Knowledge is an organizational strategic asset enabling the organization to gain significant competitive advantage.

As mentioned, no special attention was paid to knowledge orientation in Iran and no considerable effect was made in this critical area. Thus, based on the significance of KM and its significant effect on gaining competitive advantage, this study attempted to investigate and compare this issue scientifically in the cement factories of Darab and Estahban.

The main research question is as follows:

“Is there a relationship between KM tactical factors and gaining competitive advantage?”

3. Review of literature

In this section, the literature related to KM, competitive advantage, and their relation to each other are reviewed:

3.1. The definition of KM

KM has various definitions based on different attitudes. KM is an organizational communications strategy for improving the effectiveness of organization and retaining the competitive advantage [3]. Researchers studied KM both in profit and non-profit sectors. Here are some definitions of different approaches:

3.2. General definition

KM is a multi-disciplinary approach to achieve the organizational goals by creating the best way to use knowledge which includes planning, studying, and implementing the technical and social processes to improve knowledge application in favor of all individuals [4].

KM is an organizational process of asset production and this asset is mental or based on knowledge [5].

3.3. The definition of information technology approach

KM is a method providing an integrated approach for identifying, gaining, recovering, sharing, and valuating the information assets in an organization. Such information assets may include data, documents, policies, methods, as well as internal and non-accessible experiences.

3.4. The definition of the APQC (American Productivity and Quality Center)

KM is a systematic approach which includes the process of identifying, gaining, transferring, and using information and knowledge. The individuals and organizations implement this strategy to create innovation and competition and promote efficiency [6].

KM tests the mechanisms facilitating the critical processes of organization, evaluation of performance of applied solutions (achieving one or several organizational goals). KM is not the creation of a KM system but refers to strengthening

competitiveness in organizations through creating the potential value of knowledge to capital [7, 8].

KM focuses on aggregation and coordination between the knowledge of individuals including the application of the current knowledge in organizations and produce new knowledge appropriately. Implementing the two above-mentioned dimensions is called the knowledge-based theory of organizations. The factors to gain sustainable competitive advantage are identified and related to the static and dynamic natures of knowledge [9, 10]. The above-mentioned definition refers to two points. One is the effect of KM on gaining sustainable competitive advantage and the other one is the activities which should be made in the KM process. These activities mainly focus on knowledge production, acquisition, storage, retrieval, sharing, and application. In general, KM is a new –emerging discipline which supports organizations in the new business environment [11-17].

4. KM models

Identifying the KM models is highly important for the managers intending to apply KM in their organizations. Experts provided different models for knowledge management. For example, [11] stated four steps for the required basic performances to implement KM. The model presented by [12] included four knowledge-producing activities which are essential for knowledge-based organizations. In [13] introduced three steps of meaning creation, knowledge creation, and decision-making. The [14] designed a model including seven steps processes which can have significant effect on knowledge creation, determination, explanation, collection, organization, and sharing. A summary of reviewing the above-mentioned models was indicated in Table 1.

Table 1. Different definitions of KM process

row	Author name	steps
1	Wig (1993)	<ol style="list-style-type: none"> 1. Knowledge creation 2. Knowledge sharing 3. Knowledge application 4. Knowledge transfer
2	Leonard and Barton (1995)	<ol style="list-style-type: none"> 1. Solving the problem creatively and collectively 2. Entering and acquiring technical knowledge from outside the organization 3. Testing and sampling 4. Applying and developing new methods and tools
3	Chui (1996)	<ol style="list-style-type: none"> 1. Meaning creation (Information Interpretation) 2. Knowledge creation (Information Conversion) 3. Decision Making (Information Processing)
4	Nonaka and Takeuchi (1996)	<ol style="list-style-type: none"> 1. Socialization 2. Internalization 3. Composition 4. Externalization
5	Alavi (1997)	<ol style="list-style-type: none"> 1. Acquisition (knowledge creation and content expansion) 2. Knowledge indication 3. Knowledge filtration 4. Knowledge linking 5. Knowledge sharing 6. Knowledge application

6	Bukowitz and Williams (1999)	<ol style="list-style-type: none"> 1. Knowledge acquisition 2. Knowledge application 3. Learning 4. Knowledge sharing 5. Knowledge assessment 6. Knowledge creation and stabilization 7. Optimum use of knowledge
7	Ping (2002)	<ol style="list-style-type: none"> 1. Creating knowledge resources 2. KMactivities 3. Increasing knowledge resources
8	Frank and Gardoni (2005)	<ol style="list-style-type: none"> 1. knowledge identification 2. knowledge acquisition 3. KM 4. Knowledge combination 5. Knowledge sharing 6. Knowledge development 7. Knowledge application 8. Knowledge retention 9. Knowledge assessment

5. APQC model

As previously mentioned, the APQC designed a seven-step management process by [18] for KM and since the basis of KM in this study was this model.

Bukowitz and Williams divided KM process into strategic and tactical parts. According to these two researchers, tactical aspects include the required knowledge (information) acquisition for activities, knowledge application for creating value, learning from KM process, and knowledge sharing among the individuals. In the strategic steps of KM process, the used resources are created and stabilized to determine the strategy and goals of organization. The APQC presented the processes mentioned by Bukowitz and William in its framework and the factors which can help or avoid those processes called enablers around knowledge management process. These enablers include strategy and leadership, culture, management, and technology. Each of these enablers should be designed and managed by others and support the process of KM.

As mentioned, the model presented by the APQC divided the KM process into seven steps. Here are these steps in detail.

1. Knowledge acquisition: Most experts believe that knowledge acquisition is possible only

through the internal resources of organization (library, documents, databases, etc.) while the consultation companies and joint cooperation of organization are significant factors in knowledge acquisition. Attracting the experts outside the organization and outsourcing are among the methods of knowledge acquisition. In general, this step is conducted through the attraction of experts outside the organization, interaction learning, buying information and coded knowledge (book, magazine, database, etc.) and buying technology.

2. Knowledge application: It can be said that using the knowledge inside organizations is the most significant part of developing knowledge and KM process to promote competitive advantage. In most organizations, a lot of costs is spent on knowledge sharing, acquisition, and storage while less attention is paid to the principled and correct application of knowledge in line with organizational strategies. It seems that the main reason of this problem is the difficulty in applying the current knowledge in its appropriate place. Knowledge application should be regarded in implementing and improving the organizational tasks and evolutions.

3. Learning (from knowledge process): The members of organization learn from their past work experiences and whatever happens during their activities. Organization creates learning processes and supports the learning and experience acquisition

of its members and provides them with enough opportunity. This type of learning includes the continuous perception of environment (like the changes of market, technology process) and the appropriate reaction to changes (like new strategies or advanced business processes). It should be noted that this step required an effective information and communication infrastructure.

4. Knowledge sharing: Performing this step provides high levels of quality, usefulness, and effectiveness. Knowledge processes are transferred to all levels of organization. Each organizational unit separately determines the extent to which knowledge sharing makes profits to the organization and also determines that feedback loops are promoted qualitatively. In other words, the culture of knowledge is power becomes the culture of knowledge sharing is power in this step. The three dimensions affecting this step include the individuals, process, and technology having the following features:

- individuals: Individuals: Individuals and experts on the one hand and documented knowledge on the other hand have found a high integration and coordination with each other.

- Process: This step can determine the extent to which knowledge plays a role in organizational capabilities. Knowledge processes are so mature that supplying the required knowledge for each activity can be quantitatively guaranteed. Knowledge processes are continuously improved. In this regard, the used content and technology are promoted. In this step, knowledge processes continuously help the innovation and gaining of competitive advantage in organization.

- Technology: As mentioned, technologies are repeatedly updated in this step.

5. Knowledge evaluation: In this step, a framework is created to evaluate the status of knowledge assets, the weaknesses, and strengths of KM and the effects of using them in organizations. For this purpose, both quantitative tools and criteria (e.g. studying the production and sale indicators, etc.) and qualitative tools (e.g. studying the culture promotion of members, learning, etc.) are used.

The basic questions in this step are:

- Does knowledge application create a favorable value added?

- How is knowledge asset retained for creating value added?

- Does knowledge application create new opportunities and advantages for the organization?

6. Knowledge creation and stabilization: In this step, the organization obtains the ability to create, produce and stabilize knowledge. The main challenge of this step is to allocate reasons for new knowledge production. Information technology plays a basic role for knowledge stabilization. Specialized database and smart data mining tools are the significant technologies of this step.

7. The optimal application of knowledge: In this step, knowledge is considered as a strategic asset of gaining competitive advantage. Organizations exploit the available knowledge based on a planned method. This step attempt to identify and retain the strategic and critical knowledge of organization and the individuals having a significant and specialized knowledge.

6. Competitive advantage

The first studies on competition deals with the development of sustainable competitive advantage. [19] referred to a significant aspect of sustainable competitive advantage (SCA) that was specializing them, and having superiority in competition. Coyne attempted to present a definition by suggesting that a difference should be considered between the products of the organization and the products of competitors to gain sustainable competitive advantage. Such a difference is due to the resources available to the organization and other competitors have no access to them. in addition to this difference, the type of the product produced by the organization should be considered as the success key of that organization in the market. This success key can predict the performance of others by putting the resources together and the gaps in that industry. These advantages are established until the competitors cannot approach this gap or do nothing to approach it [20]. Based on the definitions in dictionary and based on the studies by Barney, the following definition can be provided:

“sustainable competitive advantage is a long term profit that is obtained due to the application of a unique strategy that is not simultaneously used or limited by any of the other competitors”.

7. Another definition states that:

“when a company competes with another company in a market and gains more profits, it has competitive advantage. The companies with products, prices, and marketing efficiency each other are considered as a part of the labor market”[21].

8. Competitive advantage with resource-based approach

Resource-based approach was first emanated from the studies by [22, 23] claiming that organizational heterogeneity is a significant resource of competitive advantage. Chamberlin stated that the competitive advantage of an organization is the assets and abilities of managers to work with each other. In addition, he believed that the heterogeneity indicators cause a partial competition in organizations and this issue lets them enjoy the multilateral competition. This multilateral competition enables the organization to gain competitive advantage and results in an appropriate financial performance at a certain period of time.

Most people doing research on KMs elected a resource-based approach for organizations. In such an approach, resources are a key factor determining the competitive advantage. Resource-based approach introduces the competencies and resources of organization as the main resources of competitive advantage. Based on this approach, there is a difference between resources and capabilities. The resources of organization including capital equipment, skills, inventions, and money consist the main factors of creating and retaining competitive advantage. Organizational capability refers to the capacity of an organization in gaining and applying these resources for performing some tasks and activities to gain competitive advantage. The relationship between these two factors is as follows: while the resources are the main origins of these organizational capabilities, the capabilities are also the main origins of competitive advantage [21].

The emergence of the concepts such as distinctive competency, special competency, and competition based on capabilities attracted the attention from outside the organization to inside the organization. According to Hamel and Prahalad, special competency is an ability extending a network in the businesses of a competency and connecting them to a whole set. One of the significant points of resource-based theory is that the organizations of an industry mainly work with similar resources but combine them differently (converting the resources to special combinations) because history, processes, work experience, managerial decisions, steps of organizational life cycle, social and cultural complexity of organizations, skills of employees, and the transfer of knowledge they have gained over time differ from each other [1].

Knowledge and competency are the most vital resources of organization and economy. In the recent decade, more emphasis was put on the significance of tacit knowledge in the competitiveness of organizations and its role in the innovation of technology and organizational learning [19]. They believed that tacit knowledge is the most organizational resource leading to competitive advantage. According to them, tacit knowledge is often individual and has a specific area and spreading it to other people is difficult while other organizations can hardly copy it due to its unique features.

Maier studied the role of KM (regardless of being implicit or explicit) as an internal and strategic resource for gaining competitive advantage, so that KM activities support organizational competency and finally lead to the development of competitive advantage. Competitive environment and internal environment are the factors affecting organizational competency [11].

In general, the resource-based theory emphasizes the key success factors of organizations to gain specific advantage through a set of routines and significant skills, knowledge, and unique experience. Such an approach is popular among strategic theorists as a framework for analyzing the strategy development. The significant point on gaining competitive advantage is that the sustainability of competitive advantage depends on the difficulty of imitation by

competitors [1]. Obviously, there are currently many organizations which consider KM as a significant tool for gaining competitive advantage. In addition, the main cause of success in an organization in the long term is achieving and retaining the sustainable competitive advantage.

9. The methods of creating competitive advantage

Competitive advantage can be evaluated in an industry having five competitive factors of the arrival of new investors, substitution threat, bargaining power of customers, bargaining power of suppliers, and competition between the current competitors. These five factors determine the severity of competition in the industry and profitability. For example, if an organization has a super status in an industry, while having none of the competitive advantage, that organization cannot be considered as the owner of competitive advantage.

Creating and continuing competitive advantage is one of the most important factors of success in an organization. Competitive advantage of an organization may be studied in terms of many dimensions such as innovation, success in the market, customer acquisition at a high level, and the performance which cannot be copied by other competitors. The organization which gains more economic profit than other organizations in the market has competitive advantage. Many simulations like efficiency, competitive development, service, and personality products, based on customer orientation and the limitations caused by announcing final prices can cause the competitive advantage of organizations in the market [3].

As the definition of competitive advantage stated, authors mentioned different factors for evaluating competitive advantage. The most famous factors are the five factors mentioned by [6].

In the present study, these five factors were used for evaluating competitive advantage including:

1. Product timely supply
2. Product innovation
3. Product final price reduction
4. Product market share increase

5. Product quality increase

10. KM and competitive advantage

During the last 50 years, the world of business changed from the superiority of richer organizations to the superiority of organizations with more knowledge. Thus, the organizations which were poor in terms of financial capital but strong in terms of mental capital were promoted. In addition, the dependence of production changed from capital to individuals. Knowledge is replaced by capital and this is the factor of organization survival and success. Economists consider this evolution related to the changes in economic infrastructures in the world. According to economists, worker-based economy changed to knowledge-based economy. Thus, knowledge acquisition acts as the factor of economic growth and development in the information market and the development of these critical factors became possible through rapid developments in the field of communications and technology. KM is a method for affecting the production and innovation and may affect economy in terms of demand and supply. The role of supply is to reduce prices and the role of demand is to value consumers through increasing the quality of products. KM affects the smallest activities to the biggest decisions of the organization. Some factors such as increasing the global competition and new economy growth made the growth of business more difficult than the reduction of production, increase of mediators, and reduction of time. Obviously, most organizations know knowledge as the most significant factor of gaining competitive advantage. Currently, the advocates of KM believe that in the modern chaotic and changing environment, KM can help organizations in gaining and retaining sustainable competitive advantage. According to [7], knowledge and knowledgeable employees are the most valuable assets of organizations in the 21st century. Changing the streams in today's business environment (where market is increasingly competitive and innovation rate is increasing), pushes the organizations toward understanding the point that knowledge is their key asset.

Davenport in the introduction of his book "KM" stated: "The axial message of this book is that sustainable competitive advantage in an organization

is due to something it collectively knows. Knowing the point that how the organization uses what it knows in an effective way and how to be prepared to gain and use the new knowledge [8]. Knowledge is at the center of competitiveness. Obviously, competitive advantage is increasingly due to knowledge in most organizations in the current competitive situations since copying something owned by organizations is difficult and the others need to pass the similar learning process [23]. In addition, knowledge is changing the world by which organizations compete

with each other [22]. Organizations considered their success depending on new innovations in the past and asked the question that “How does innovation cause development, progress, and efficiency in organizations?”. Today, by creating competitive advantage, organizations are faced with the question that “How does the use of innovation in knowledge retain competitive advantage in the new professional work in the long term?”

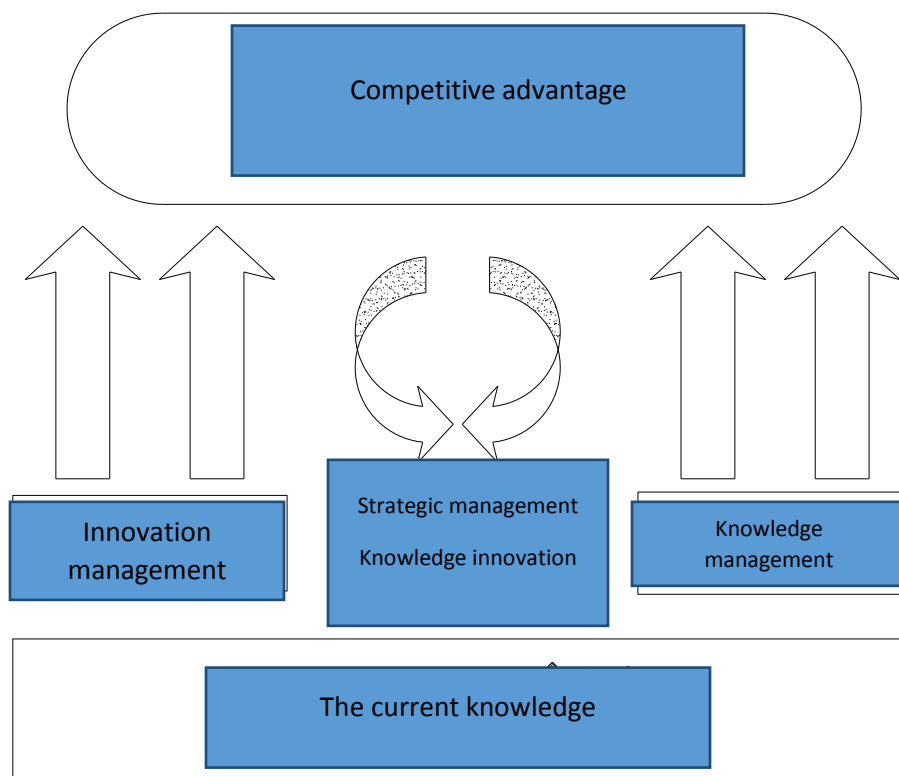


Figure 1. The relationship between KM and innovation management with competitive advantage

Figure 1 shows how innovation can be used in knowledge in a specialized and targeted way. This figure shows the combination of innovation management and KM for creating sustainable competitive advantage [13]. In fact, innovation emanates from new knowledge because innovation in knowledge causes innovation in production:

Creating new KM → innovation in production
→ gaining competitive advantage

It is currently assumed that there is a strong relationship between KM and creating sustainable

competitive advantage and it is the hidden nature of organizational knowledge turning it into a unique resource.

KM has two components of KM and increasing the ability to create new knowledge. Knowledge creation confirming the second component of KM creates and supports learning mechanisms, knowledge acquisition, sharing, application (tactical factors of KM) and creates innovation and competitive advantage[5]. Thus, this study investigated the relationship between the tactical factors of KM and gaining competitive advantage.

11. The resource-based approach of KM and competitive advantage

The concept of KM is a strong competitive weapon in management strategies. The special resources of KM are divided into two groups of social resources and technical resources.

The researchers of KM with a resource-based perspective found that different resources of KM are the potential resources of gaining competitive advantage. In this regard, [9] stated the relationship between the enablers of KM (culture, structure, individuals, and technology) and organizational performance. Graver, Davenport, Ekonoye, and Karsten defined strategy, structure, culture, and technology as the primary resources of business development and competition development.

We classified the significant resources of KM as follows:

1. The technical resources of KM which form the combination of information technology infrastructures and capabilities of KM.
2. Social resources which form the combination of structural, cultural, and human resources as well as KM capabilities.

Technical resources of KM: Information technology is the technical resource indicating which information and communication technology, as infrastructure, can share knowledge or use as database [14].

Social resources of KM: Social resources include the potential and available resources involving then relationships between individuals or the relationships within a social unit. Li and Chui explained the significant dimensions of KM as follows:

1. Structural resources of KM such as encouraging the employees to use KM
2. Cultural resources of KM such as an appropriate culture encouraging human to create and share knowledge in an organization
3. Human resources of KM such as the awareness of employees on discipline and the relationship between one discipline and another one

The organizations having strong social resources of KM can:

1. Integrate KM and design of activities to each other in an effective way
2. Use and develop innovation in a reliable way to meet the business needs of organization sooner than the competitors
3. Predict the business needs of organization in future and appropriate innovation before other competitors [20].

The ability of social resources of KM in fulfilling different activities with the successful implementation of KM is a significant factor in the success of organizations. Structural, cultural, and human resources of KM are promoted over time during the organizational performance. In addition, human is in the heart of creating organizational knowledge; organization creates awareness and competition especially the capabilities of KM which are hidden in human by personal acceptance and its required capabilities. Obviously, gaining and imitating the social resources of KM is difficult. For this reason, it is used as a significant resource in gaining competitive advantage.

In fact, the abundant organizations due to competition are largely related to the social resources of KM. In the resource-based perspective of KM, there is the idea that organizations can distinguish themselves from others using the resources of KM. The technical and social resources of KM are the special resources of organization increasing the ability of organization for competition at a high broad level by integrating with other capabilities of KM.

In order to know whether superiority can be retained over time, first a relationship should be established between the resource of KM and competitive advantage. If there is a positive relationship between KM and competitive advantage, this competitive advantage will be sustainable because KM cannot be imitated easily. However, only the practical research can answer this question in a certain way. The present study followed the same issue.

12. The presentation of conceptual model (regarding the relationship between KM and competitive advantage)

Based on the research objectives and studies conducted in this area, it can be said that implementing the KM process by enablers (culture, strategy, individuals, and structure) and the presence of positive intervening variables such as education,

teamwork, relationships, and personality of employees and managers will lead to gaining competitive advantage. The positive presence of intervening variables means that horizontal and all-round relationships, extroverted and collectivist personality of employees and managers as well as the participatory culture among them are significant factors for the success of KM and gaining competitive advantage (Figure 2).

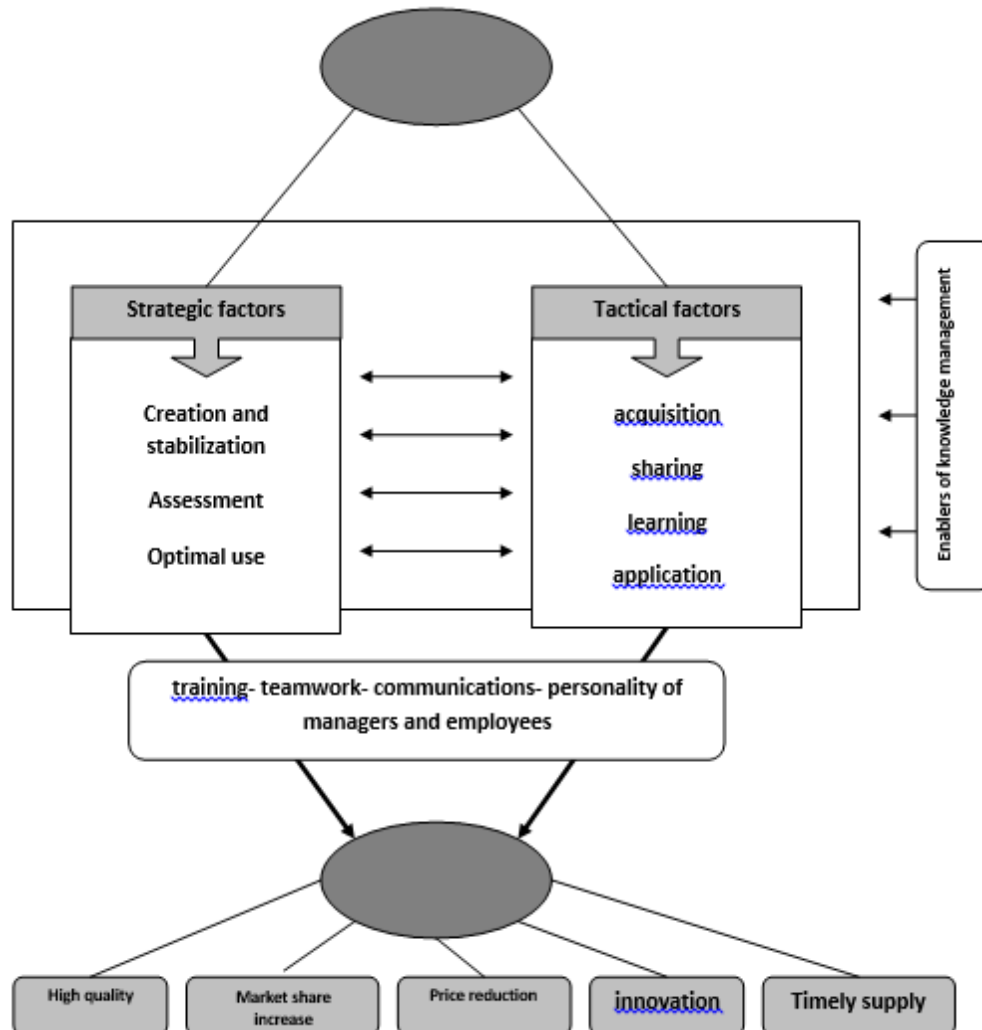


Figure 2. The relationship between KM and gaining competitive advantage Research propositions

13. Research objectives

The present study aimed to introduce KM, identify the theoretical framework of the study, compare the Tactical factors and indicators of gaining competitive advantage in the studied organizations, and measure the relationship between KM tactical factors and indicators of gaining competitive advantage.

14. Research questions

Based on the above-mentioned issues, this study aimed to answer the following questions:

- Is there a difference between KM tactical factors in two cement factories of Darab and Estahban?
- Is there a difference between the two cement factories of Darab and Estahban in terms of gaining competitive advantage?
- Is there a relationship between KM tactical factors and gaining competitive advantage in Darab cement factory?
- Is there a relationship between KM tactical factors and gaining competitive advantage in Estahban cement factory?

15. Research type

The present study was an applied-descriptive research (of correlational type) and was a field research since it tested the hypotheses in real life conditions in the studied factories.

Research method

The main method of this study was survey and the data were collected through a questionnaire. The statistical population included all managers, assistant managers, and experts of Darab and Estahban cement factories. The reasons for selecting these organizations as the spatial scope of the study were equal products and their competition.

The distributed questionnaire included two parts. The first part evaluated four tactical factors of KM and the second part evaluated five indicators of gaining competitive advantage.

The respondents were asked to specify the match rate of their organization to each raised question on the Likert scale (from 5=completely agree to -5=completely disagree).

99% of the questionnaires were successfully selected and their answers were analyzed. Two methods of descriptive and inferential statistics were used for data analysis. The mean of answers related to each step was calculated to specify KM tactical factors. These factors were ranked from the highest to lowest mean and the mean indicators of gaining competitive advantage were calculated in the same way.

In order to measure the validity and reliability of the raised questions for each tactical factor of KM and indicators of gaining competitive advantage, the internal consistency method and Cronbach's alpha coefficient were used. The reliability and validity of all factors and indicators were confirmed.

16. Data analysis

Table 3 shows the mean score of KM tactical factors in Darab and Estahban cement factories. As can be observed, the mean value of KM tactical factors in Darab cement factory (at 0.50 significance level) was higher than Estahban cement factory.

Table 4 shows the mean score of the indicators of gaining competitive advantage in the two studied factories. The indicators of gaining competitive advantage in both factories are at the same level.

Table 5 shows the correlation between KM tactical factors and indicators of gaining competitive advantage in Darab cement factory. Based on the obtained values, there is a significant and direct relationship between all KM tactical factors and indicators of gaining competitive advantage.

Based on Table 6, the factors with correlation coefficient of higher than 0.225 have significant and direct relationship. One star next to the values indicates the relatively strong relationship and two stars indicate very strong relationship (Tables 3 and 4).

Table 7 shows the predictability of KM tactical factors for gaining competitive advantage in

Darabcement factory. Based on the values and coefficient of determination, it can be said that the factors of learning from KM process, knowledge sharing, and knowledge application have predictability for gaining competitive advantage.

Table 8 shows the predictability of KM tactical factors and indicators of gaining competitive advantage in Estahban cement factory. In this factory, only the factors of knowledge sharing has predictability for gaining competitive advantage.

Table 3. The mean score of KM tactical factors in Darab and Estahban cement factories

The studied factor	Statistical population	Mean score of factor	Standard deviation	T value	Degree of freedom	Significance level
Knowledge acquisition	Darab cement factory	27/36	4/309	2/552	99	0/004
	Estahban cement factory	24/17	6/485			
Knowledge sharing	Darab cement factory	19/04	2/502	1/997	99	0/049
	Estahban cement factory	18/00	2/708			
learning	Darab cement factory	26/95	4/002	3/026	99	0/003
	Estahban cement factory	24/09	5/472			
Knowledge application	Darab cement factory	23/69	4/337	2/669	99	0/009
	Estahban cement factory	21/37	4/373			

Table 4. The mean score of indicators of gaining competitive advantage in Darab and Estahban cement factories

The studied factor	Statistical population	Mean score of factor	Standard deviation	T value	Degree of freedom	Significance level
Timely supply	Darab cement factory	15/62	2/468	1/248	99	0/315
	Estahban cement factory	14/96	2/859			
innovation	Darab cement factory	15/82	2/237			

	Estahban cement factory	15/48	2/934	0/660	99	0/511
Final price reduction	Darab cement factory	16/16	2/448	1/054	99	0/294
	Estahban cement factory	15/57	3/250			
Market share increase	Darab cement factory	15/69	2/645	0/670	99	0/504
	Estahban cement factory	15/30	3/154			
High quality	Darab cement factory	16/36	2/643	0/822	99	0/413
	Estahban cement factory	15/96	2/716			

Table 5. The Pearsons correlation coefficient value between KM tactical factors and indicators of gaining competitive advantage in Darab cement factory

KM tactical factors	Indicators of gaining competitive advantage	Knowledge acquisition	Knowledge sharing	learning	Knowledge application
Product timelinessupply		R= 0/278 *	R=0/278 *	R=0/337*	R=0/266
		Sig=0/04	Sig=0/04	Sig=0/012	Sig=0/05
		N=55	N=55	N=55	N=55
Product innovation		R=0/222	R=0/273*	R=371**	R=0/219
		Sig=0/103	Sig=0/044	Sig=0/005	Sig=0/108
		N=55	N=55	N=55	N=55
Product final price reduction		R=0/082	R=0/326*	R=0/373**	R=0/232
		Sig=0/552	Sig=0/015	Sig=0/005	Sig=0/089
		N=55	N=55	N=55	N=55
Product market share increase		R=0/215	R=0/254	R=0/448**	R=0/234
		Sig=0/115	Sig=0/062	Sig=0/001	Sig=0/086
		N=55	N=55	N=55	N=55

Products high quality	R=0/229	R=0/240	R=0/350**	R=0/359**
	Sig=0/092	Sig=0/078	Sig=0/009	Sig=0/007
	N=55	N=55	N=55	N=55

Table 6. The Pearsons correlation coefficient value between KM tactical factors and indicators of gaining competitive advantage in Estahban cement factory

KM tactical factorsIndicators of gaining competitive advantage	Knowledge acquisition	Knowledge sharing	learning	Knowledge application
Product timely supply	R=0/324 * Sig=0/028 N=46	R=0/382 ** Sig=0/009 N=46	R=0/227 Sig=0/128 N=46	R=0/401* Sig=0/006 N=46
Product innovation	R=0/229 Sig=0/126 N=46	R= 0/509 Sig=0/00 N=46	R= 0/264 Sig=0/077 N=46	R= 0/211 Sig=0/159 N=46
Product final price reduction	R=0/106 Sig=0/482 N=46	R=0/381** Sig=0/009 N=46	R=0/182 Sig=0/226 N=46	R=0/02 Sig=0/897 N=46
Product market share increase	R=0/147 Sig=0/329 N=46	R=0/507** Sig=0/000 N=46	R=0/258 Sig=0/083 N=46	R=0/112 Sig=0/457 N=46
Products high quality	R=0/105 Sig=0/487 N=46	R=0/314* Sig=0/033 N=46	R=0/102 Sig=0/500 N=46	R=0/004 Sig=0/978 N=46

Table 7. The regression value between KM tactical factors and SCM indicators of gaining competitive advantage in Darabcement factory

Variable name	R	R^2	Standard error(s.d)	Bcoefficient	Beta	T value	F	Significance level
learning	0/426	0/182	0/331	1/148	0/426	3/433	11/784	0/001
Knowledge sharing	0/314	0/099	0/557	1/34	0/314	2/407	5/793	0/02
Knowledge application	0/294	0/087	0/323	0/725	0/294	2/243	5/030	0/029
Knowledge acquisition	0/231	0/054	0/331	0/573	0/231	1/732	2/999	0/089

KM requires an appropriate pattern for implementation in order to become competitive advantages. Since enablers and infrastructures are significant factors in implementing KM, these factors should be regarded before implementing the process. Organizational culture is one of the most significant enablers of KM. As an organization wants to develop learning culture, first the employees should learn the necessary skills. Creating a culture based on learning is necessary among the employees of organization.

When managers and employees reach a shared understanding on the concept of KM, it is an appropriate time for implementing the KM process. The process which helps the organization to achieve the continuous improvement of processes, products, and gaining competitive advantage.

In order to implement the KM process for knowledge acquisition, the presence of the teams for effective discussion is necessary among employees. Another significant factor for improving knowledge acquisition is the feedback presented by the internal and external customers. This feedback is highly useful for fulfilling the daily tasks. Such effective interactions among employees facilitate the knowledge sharing and acquisition. Knowledge sharing is so significant that today's motto of knowledge is power has become the motto of knowledge sharing is power. Knowledge sharing creates the organizational knowledge. Creating the knowledge databases and access to the Internet and

Intranet are among the significant resources of knowledge sharing. An organization is knowledge-based when its employees can easily transfer their knowledge to knowledge databases. Such employees considerably help the knowledge creation and share after completing and reviewing the projects.

In order to learn from KM process, organizations should support the learning and experience acquisition of their members and provide them with enough opportunity to continuously show appropriate reaction than changes. The employees whose services are finished are the significant resources of knowledge that managers should store the knowledge of such employees before leaving the organization and then use as the significant organizational resources for gaining competitive advantage.

Knowledge application is the most significant step of KM process for gaining competitive advantage. knowledge application in the production process improves the organizational evolutions and finally gaining competitive advantage.

17. Conclusion

This text looks at the value of knowledge management in supply chain management and how supply chain partners can use IT to improve organizational performance. As mentioned, the present study aimed to investigate the relationship between Tactical factors and indicators of gaining

competitive advantage. This study indicated a positive correlation between KM and SCM gaining competitive advantage and as the mean score of tactical factors in an organization is higher, these factors will have more predictability for the indicators of gaining competitive advantage. One of the significant points that should be regarded in implementing KM as a resources of competitive advantage is that creating an appropriate culture and providing the infrastructures such as information technology. It can be said that if all infrastructures and enablers of KM are provided but there is no culture, implementing the KM will fail. The culture of accepting the change and tendency of employees to the use of technologies should be created before implementing this process and the advantages of knowledge sharing should be shown to them. In addition, the employees should be rewarded after cooperating in KM process. Perhaps, it can be said that the most important result of this study is that KM should be localized for Iranian organizations and implement based on their culture and structure. The exhibition of the KM processes within the SC context may help practitioners and managers interested in implementing KM initiatives to replicate the methodologies in order to increase the possibilities of a successful KM adoption.

References

- [1] April, M. "Guidelines for Developing a K-Strategy", KM, 6, 209-225,2002.
- [2] Barney, J. "Firm Resources and Sustained Competitive Advantage", Management, 17,99-120,1991.
- [3] Besanko, D, Dranove, D, Shanley, M. "Economics of Strategy" John Wiley, New York, 387-389,2000.
- [4] Bukowitz W.R and Willians R.L. "The KM Field Book", person Education limited, London,1999.
- [5] Call, D. "KM not Rocket Science",KM, 1 , 19-30,2006.
- [6] Comb, T. "Assessing Customer Relationship Management Strategies for Creating Competitive Advantage in Electronic Business", KM, 4, 1-7,2004.
- [7] Coyen, K. "Sustainable Competitive Advantage: what it isn't", Business Horizons, 39,,54-64,1999.
- [8] Davenport and Prusak. "Working Knowledge", Boston: Harvard Business school press,1998.
- [9] DeNisi, A, Michael, A, Hitt, S. "The Knowledge-Based Approach to Sustainable Competitive Advantage", Managing Knowledge, 4, 110-134,2005.
- [10] Diakoulakis, Georgopoulos, Koulouriotis and Emiris. "Towards a Holistic KM Model", KM, 8, 22-36,2004.
- [11] Drew.H and Roger.D. "Learning in Partnership: What Constitutes Learning in the Context of South-North Partnership?",2002, <http://www.bond.org.uk>
- [12] Ghalbi, A. K.. "Systemic KM: Developing a Model for Management Organizational Asstes for Strategic and Sustainable Compitive Advantage", KM practice, 4, 1-22,2004.
- [13] Goh, A. "Enhancing Organizational Performance Through knowledge Innovation: A Proposed Strategic Management Framework", KM, 4,,1-12,2004.
- [14] Gold, A.H, Malhotra, A, segars, A.H. "KM Informational Capability as Knowledge Integration", Organization Science, 7, 375-385,2001.
- [15] Hiscock, G. "Developing KM Awareness in public Relation Students", public relations review, 30, 107-115,2004.
- [16] Hoffman, N. "Sustainable Compitive Advantage, Concept: Past, Present , and Future", Marketing Science Review,,40,,103-122,2005.
- [17] Hunt, S.and Robert, M. "The Resource – Advantage Theory of Competition: Dynamic , Path Dependencies, and Evolutionary Dimensions", marketing,60, 107-114,1996.
- [18] Jang. B , Hong. H, Bock. F and Kim. B. "KM and Process Innovation: The Knowledge Transformation Path in Samsung SDI", KM, 6 , 97-24,2002.
- [19] Lam, A. "Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework", Organization Studies, 21, 97-113,2000.
- [20] Lee, H and Chol, B. "KM Enablers, Processes, and organizational performance: An Integrative View and Empirical Examination", management information systems, 20, 179-228,2003.
- [21] Lee. G and Kim. H. "A Stage Model of Organizational KnowledgeManagement: A Latent Content Analysis", Export Systems with Applications,,20, 1-20,2001.
- [22] Massingham, W.Z. "Linking Business Level Strategy With Activities and Knowledge Resources", Knowledge manegment, 8, 62-79,2004.
- [23] Parikh, M. "KM Framework for High-Tech Research and Development", Engineering management, 13, 12-28,2001.