

## **Factors and Benefits of Knowledge Management Practices by SMEs in Irbed District of Jordan: An Empirical Study**

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### **Abstract**

*This study focused on the factors and benefits of practicing KM by small and medium enterprises (SMEs). A random sample used which consist of (200) small and medium enterprises in Irbed District of Jordan. The study covered 11 factors which are significant for the benefits of practicing of KM in SMEs. An instrument survey set was designed by researchers. The instrument was checked and evaluated. The study data were analyzed by using SPSS software on the base of each factor and benefits of practicing KM by SMEs. The study results shows that all involved factors are significant.*

**Keywords:** Knowledge Management, Small and Medium Management

### ***1.Introduction***

Business enterprises today are mostly practicing knowledge management as an essential input of all business activities to ensure a high standards of business performance and accomplishments (Moffett et. Al, 2002). Knowledge management is rapidly become an integral business activity for business enterprises as they realise the competitiveness around decision makers knowledge (Grover and Davenport, 2002).

In the main time of business operations shows that KM played a significance role for both Small and Medium Enterprises (SMEs). Business growth and the practicing of KM are correlated to each other. Higher the growth of the firm, higher the practicing of KM will be (Salojarvi et al, 2005). Improved financial performance and innovation of a firm also has a positive connection with the practicing of KM (Wong, 2005).

Studies results shows that SMEs still lack in the practicing of KM. There are various reasons for this. Those reasons include lack of financial and non-financial resources, less top management promise, no KM related organizational infrastructure (Chief Knowledge Officer or Chief Information Officer) and misunderstanding about KM benefits and its implementation etc. Less work has been done about practicing of KM in SMEs due to the misunderstanding that KM can be similarly practiced in SMEs as it can be practiced in large organizations (Desouza & Awazu, 2006).

SMEs play a fundamental role in the growth of economy of any country. Hence those programs should be practiced which can help SMEs in better performing their operations and improving financial results. One of these programs is the practicing of KM as SMEs benefit from its practices (Wong & Espinwall, 2005).

The study aim to help SMEs of practicing KM. This study focused on 11 factors which are important for the practicing of KM in SMEs. Study also produced a prioritized list of Factors (CSFs), based on their significance for practicing KM. Beside of this, benefits which SMEs are getting and can get by practicing KM were also analyzed.

## **2. Study Literature Review and Related Studies**

### **2.1. Study Literature Review**

SMEs were defined differently from country to another. But still there are three basic criteria for the classification of SMEs on which almost all countries and organizations agree. Those include number of employees, annual sales turnover and total assets. Some countries use one of these criteria, some use two and even some uses all three to categorize SMEs. Focus of this study was Jordanian based SMEs therefore; Jordanian SMEs are categorized into small and medium enterprises on the basis of invested capital number of employees. These SMEs are operating in trade sector, manufacturing sector, and service sector.

For practicing KM in SMEs, there are certain factors or areas which are vital for its practices. These factors are known as CSFs. They are also known as Key Success Factors (KSFs) or Key Result Areas (KRAs) (business dictionary). In general, areas, matters or actions which are useful in the successful practice of a plan, process, project or business are known as CSFs. When it comes to the practices of KM, those 'activities and practices' which are helpful in the practices of KM are known as CSFs (Wong, 2005).

The mean importance of KM was by no means questioned because it's an established reality now. Infact, it was mentioned in a study that measuring of KM is considered to be difficult but at the same time it is a key area for the success of an organization (Shepard, 2000). KM is not only essential for large organizations but has almost same significance for SMEs. One of the reasons for the success of SMEs is managing their knowledge (Brush, 1992).

Based on the above discussion, practicing of KM lack in SMEs and one of the most important reason is not having enough financial resource (OECD, 2002); (Jun & Cai, 2003). Another reason for not practicing KM is that most SMEs are family owned businesses. This attribute of SME is an important obstruction in the process of knowledge sharing which is an important component of KM practices. Owners of the SMEs do not share their knowledge with the employees having fear that when employee will leave, he/she will also take the shared knowledge with him/her. Moment at which that employee will join another organization, that knowledge will be transferred to the organization which is being joined and in this way their competitor will benefit. Higher employee turnover in SMEs also supports this phenomenon. This is the reason why SME owners believe knowledge sharing as a threat to their business.

### **2.2. Related Studies Discussion**

Davenport et al. (1998) conducted an exploratory study on 31 KM projects in 24 companies, one of the aims being to determine the factors associated with their effectiveness. Before doing so, they evaluated the performance of the projects using indicators analogous to those for assessing the success of other business change initiatives. As a result, 18 projects were classified as successful, from which eight common success factors were identified. They were linking KM to economic performance or industry value, a clear purpose and language, a standard and flexible knowledge structure, multiple channels for knowledge transfer, a knowledge-friendly culture, a technical and organizational infrastructure, change in motivational practices, and senior management support. It was further stated that while the last four factors were the hardest to develop, they were also the ones that mattered most. However, since this was an exploratory study, it was agreed by Davenport et al. (1998) that linking the identified factors to the success of KM should be viewed as hypothesized, not proven.

Chourides et al. (2003) identified various critical factors for successful KM implementation in five organizational functional areas: strategy, human resource management (HRM), IT, quality and marketing. Their work was built upon an earlier questionnaire survey of the financial time's stock exchange (FTSE) 100 companies as well as a review of existing literature to identify key practices and factors for adopting KM. Subsequently, they conducted a longitudinal study in eight case organizations, which were at various stages of implementing KM programmers to further compare and assess their critical factors. In particular, interviews with key staff of these organizations were conducted for this purpose.

The way in which their critical factors are presented are like “a list of things to do” rather than a set of CSFs as suggested by other authors such as Skyrme and Amidon (1997) and Davenport et al. (1998). The author feels that some of the factors are too specific which might be hard to generalize across organizations. For example, they suggested monitoring the “KM people portfolio matrix” as a critical factor for KM in the HRM area. This matrix is merely one of the many techniques that can be utilized to facilitate the conduct of a people audit. Arguably, organizations can also employ other alternatives to monitor their people in order to be successful in KM.

Liebowitz (1999) proposed six key ingredients in order to make KM successful in organizations. He suggested the need for a KM strategy with support from senior leadership, a chief knowledge officer (CKO) or equivalent and a KM infrastructure, knowledge ontology and repositories, KM systems and tools, incentives to encourage knowledge sharing and a supportive culture. Specifically, important lessons learnt from firms who were early adopters of KM were used to support his propositions. In the first ingredient, he advocated the creation of a centre of expertise for every knowledge discipline or subject matter, as a KM strategy which could be undertaken by organizations. The resource requirement for such an activity could be tremendous and this reflects a focus towards those organizations that have the necessary expertise, human and financial resources.

Hasanali (2002), the success of a KM effort depends on many factors. He highlighted five categories of factors namely leadership, culture, structure, roles and responsibilities, IT infrastructures, and measurement. Likewise, the APQC (1999) included strategy and leadership, culture, technology and measurement in their framework as enablers which can support the operation of KM. Although these factors are eminently sensible, it is believed that the success of KM is dependent on more aspects. A comprehensive set of factors is needed to give a more complete view of those that are necessary. Table I provides a comparative summary of some of the main issues of these studies.

“Delphi” study was used to assess their appropriateness. Some critical factors can be extracted from the work of those who have explored KM in general or have addressed a particular factor in detail. Since this study is targeted at SMEs, a review of the SME literature was also vital for identifying attributes that can impinge on KM adoption. An in depth literature review indicated that numerous factors had been identified as important for accomplishing KM. Although different researchers have used different terminologies to indicate these factors, they can be represented by generic themes. In addition, they have also been mentioned in the literature with a mixed extent of emphasis and coverage. Based on the review, the authors hypothesized and proposed 11 CSFs to form the basis for KM adoption in the SME sector: leadership and support; culture; information technology; strategy and purpose; measurement; organizational infrastructure; processes and activities; motivational aids; resources; training and education; and human resource management. The list below presents the factors together with their sources:

*Organization Leadership support:* Without the commitment and support from leadership in an organization, not only KM but even any other course of action can't be followed or practiced. Hence, Leadership plays a major role in the practices of KM. This factor was considered as CSF by different authors. Like organization leadership and support (Wong, 2005), knowledge leadership (Skyrme & Amidon, 1997), senior management support (Davenport et al, 1998), leadership (Holsapple & Joshi, 2000); (Hasanali, 2002); (APQC, 1999) and senior leadership support (Liebowitz, 1999).

*Organization Culture:* Culture plays a vital role in any organization. In an organizational culture where people are afraid of sharing their knowledge should first be changed. Different studies emphasized on the importance of culture. Culture itself consists of many components and here we are discussing about CSFs for the practices of KM, therefore emphasis should be on ‘knowledge friendly culture’. Culture was suggested as a CSF by many authors like culture by (Wong, 2005); (Hasanali, 2002); (APQC, 1999), supportive culture (Liebowitz, 1999), knowledge friendly culture (Davenport et al, 1998) and knowledge creating and sharing culture (Skyrme & Amidon, 1997), (Skyrme and Amidon, 1997; Davenport et al., 1998; Liebowitz, 1999; McDermott and O'Dell, 2001)..

*Information Technology:* Without suitable Information Technology (IT) tools, KM can't be practiced because IT is a foremost enabler for KM practices.

Different authors have analyzed the significance of IT as key KM enabler and considered it as a very important CSF for KM implementation. Like IT by (Wong, 2005), technological infrastructure (Skryme & Amidon, 1997); (Davenport et al, 1998), knowledge Ontologies and repositories (Liebowitz, 1999), IT infrastructure (Hasanali, 2002) and technology (APQC, 1999),(Alavi and Leidner, 2001).

*Strategy and Purposes:* Strategy should be developed about the practicing of KM. Without proper strategy, any plan will fail. This factor was suggested by many authors with different names like strategy and purpose (Wong, 2005), strong link to business imperative, vision and architecture (Skryme & Amidon, 1997), clear purpose and language (Davenport et al, 1998), KM strategy (Liebowitz, 1999) and strategy (APQC, 1999), Zack, 1999).

*Measurements:* Measurement acts like a data collection system that gives useful information about a particular situation or activity. An initiative like KM will suffer the risk of becoming just another management fad, if it is left unmeasured. Sayings like “you cannot manage what you cannot measure” and “what is measured is what gets done” certainly hold true for KM. According to Arora (2002) and Ahmed et al. (1999), measuring KM is necessary in order to ensure that its envisioned objectives are being attained. Measurement enables organizations to track the progress of KM and to determine its benefits and effectiveness. Essentially, it provides a basis for organizations to evaluate, compare, control and improve upon the performance of KM (Holsapple and Joshi, 2000; Davenport et al., 1998; Hasanali, 2002; APQC, 1999; Ahmed et al., 1999).

*Organizational infrastructure:* Many organizations especially large ones have KM infrastructure in the form of KM department, Chief Knowledge Officer (CKO) or Chief Information Officer (CIO). Such infrastructure is important for the practices of KM. This factor was also previously discussed by authors as CSF. Like organizational infrastructure (Wong, 2005); (Davenport et al, 1998), CKO or equivalent and KM infrastructure (Liebowitz, 1999) and structure, roles and responsibilities (Hasanali, 2002;Herschel and Nemati, 2000).

*Processes and Activities:* All processes and activities should be systematic. Process and activities should be coupled with KM. Without proper linkage between ‘process and activities’ and KM, there will be no use of practicing KM. Factor was suggested as CSF by many authors like process and activities (Wong, 2005), systematic organization knowledge processes (Skryme & Amidon, 1997), multiple channels for knowledge transfer (Davenport et al, 1998) and control and co-ordination (Holsapple & Joshi, 2000). Processes and activities (Davenport et al., 1998; Bhatt, 2000).

*Motivational Aids:* To encourage knowledge creation and sharing behavior, rewards are important (both intrinsic and extrinsic). This factor was suggested as CSF by authors as motivational aids by (Wong, 2005), change in motivational process (Davenport et al, 1998) and incentives to encourage knowledge sharing (Liebowitz, 1999.; Yahya and Goh, 2002;Hauschild et al., 2001).

*Organization Resources:* Resources are mandatory to practice of KM. If organizations lack financial resources then practices of KM will be almost impossible. Different authors combined financial and non-financial resources under ‘resources’. All resources are essential but financial resources are more important because all other resources are dependent on financial resources. Hence this study will analyze separately ‘financial’ and ‘non-financial’ resources. ‘Resources’ was suggested as CSF by (Holsapple and Joshi, 2000; Davenport and Volpel, 2001; Wong and Aspinwall, 2004).

*Training and Education:* Human Resource Management and Development involves training and education, thus another important factor for the practices as KM practice requires proper training and education to employees. Training and education is not only important to low level employees but is required for top management as well. If top management does not know anything about KM and its benefits then how they will pursue its practices. As a result, training and education is treated as a CSF for the practicing of KM. This factor was suggested as CSF by (Wong, 2005) as ‘training and education’ (Horak, 2001; Yahya and Goh, 2002; Mentzas, 2001).

*Human resource Management:* Knowledgeable people who also know the importance of sharing knowledge are important for KM practices. At the end of the day, it is upon employees who know how to get benefit from implementation of KM? This factor was also suggested by (Wong, 2005), as ‘Human Resource Management’ (HRM). HRM is not only limited to hiring and retaining of employees.

In fact, it involves activities like human resource planning, industrial relations, setting safety and health standards etc. Some of these are not important to practicing of KM, therefore; scope of this factor was limited to only 'hiring and retention of employees' in this study. This also has an impact on the culture of an organization. As culture is dependent on humans so such people should be hired who are knowledgeable and like to share their knowledge. This will help in the promotion of knowledge sharing culture.

### 3. Study Methodology

This study was conducted in Jordan. For the complete results, 200 SMEs were approached. Simple random technique was used for selecting SMEs. SMEs which were contacted include garment companies, distributors, stationary, restaurants, internet cafes, celebration halls, cosmetics, plastic, furniture and food manufacturers. Personally administered questionnaire method was used as survey instrument because data was collected from Irbed district of Jordan. Questionnaire was intended for the top management of SMEs. Questions were measured on the basis of 5-likert scale (Gotzamani & Tsiotras, 2001).

Respondents were asked to rank all 11 factors from 1-11. One as most important and twelve was least important. Weighted average method was used to rank the factors. T-test variance was used for measuring significance of each factor.

Respondents were also asked to provide feedback on choosing the benefits from practicing KM were asked as well from respondents. These factors were prioritized on the basis of frequency. Frequency means, the number of respondents chose that option.

### 4. Study Results Discussion

Table 1 shows the type of SMEs based on type of sector, and Table 2 categorization of SMEs based on investment capital of SMEs and table 3 categorization of SMEs based on number of employees provides a summary of how SMEs in Irbed District are categorized.

**Table 1: Type of SMEs Sector**

Enterprise Size	Trade Sector	%	Manufacturing Sector	%	Service Sector	%	Total
Small	35	35	22	22	43	43	100
Medium	28	28	44	44	38	38	100
Total	63	63	66	66	81	81	200

**Table 2: Investment Capital on Thousand JD of SMEs:**

Bus. Enterprise Size	Trade Sector	No.	%	Manufacturing Sector	No.	%	Service Sector	No.	%	
Small	Less than 100.000	35	35	Less than 100.000	22	22	Less than 100.000	43	43	100
Medium	100.000-500.000	28	28	100.000-500.000	44	44	100.000-500.000	38	38	100
Total		63	63		66	66		81	81	200

**Table 3: Number of Employees of SMEs:**

Enterprise Size	Trade Sector			Industrial Sector			Service Sector		
No. of Employees	Below 5	5- 10	11 and Above	Below 5	5-10	11-and Above	Below 5	5-10	11- and Above
Small	23	12	-	10	24	2	22	7	-
Medium	5	16	8	4	18	14	12	15	8
Total	28	28	8	14	42	16	34	22	8

SMEs in Irbed District are categorized into small and medium levels. SMEs are operating in manufacturing, service and trade sectors. Criteria used by government of Jordan to categorize SMEs are investment capital and number of employees.

**4.1. Significance of Knowledge Management Factors**

Table 4, gives a list of factors according to the significance each factor of KM in SMEs (trading, services and manufacturing sector). Weighted mean shows that how high every factor was ranked from 1-11. Lower the weighted mean is, higher the significance will be.

**Table 4: Mean Importance of Factors and T-Test Analysis**

Significance Of Factors For SMEs					
No.	Factors	Mean	SD	t-value	Sig.
1	Organization Leadership Support	3.01	10.12	0.091	0.000
2	Organization Culture	3.49	10.01	0.124	0.001
3	Organization Resources	3.75	09.67	0.149	0.001
4	Information Technology	4.05	08.45	0.164	0.011
5	Human Resources Management	4.09	08.22	0.175	0.013
6	Strategy and Purposes	4.15	08.01	0.184	0.016
7	Motivational Aids	4.19	07.89	0.186	0.023
8	Process and activities	4.45	07.34	0.192	0.025
9	Training and Education	4.56	06.67	0.201	0.029
10	Organizational Infrastructure	4.66	06.12	0.214	0.031
11	Measurements	4.75	05.89	0.219	0.039

$\alpha \leq 0.05$

Based on table 4, the results shows a significant relationship of each factor involved of practicing KM by SMEs and significant results of all factors are below  $\alpha \leq 0.05$ . Organization leadership support is enormously important for the practicing of KM, hence making it as one of the most important CSF. The organization leadership supports is the highest ranked factors with weighted mean of 3.01 and a significant of 0.000  $\alpha \leq 0.05$ . Organization culture is an important criterion for the practicing of KM, thus a CSF for practicing of KM with weighted mean of 3.49 and a significant of 0.001  $\alpha \leq 0.05$ . Organization resources is another important factor as nothing can be implemented without organization resources thus securing position among top 3 factors with a weighed mean of 3.75  $\alpha \leq 0.05$ . Other important factors include informational technology with weighted mean of 4.05 and a significant of 0.011  $\alpha \leq 0.05$ . Human resources management with weighted mean 4.09 and a significant of 0.013  $\alpha \leq 0.05$ , because human resource management creates awareness among all levels of employees about the importance of KM. Strategy and purposes also another important factor with a weighted mean of 4.15 and a significant of 0.016  $\alpha \leq 0.05$ . Motivational aids also considered as an important factor with a weighted mean of 4.19 and a significant of 0.023  $\alpha \leq 0.05$ . Other factors like systematic KM processes and activities with weighted mean 4.45 and a significant of 0.025  $\alpha \leq 0.05$ . Knowledgeable employees by training and education with a weighted mean of 4.56 and a significant of 0.029  $\alpha \leq 0.05$ . Organizational structure was considered as an important factor while practicing KM and the reason might be that SMEs lack KM related infrastructure with a weighted mean of 4.66 and a significant of 0.031  $\alpha \leq 0.05$ . These are the persons who know the importance of measuring KM with weighted mean 4.75. and a significant of 0.039  $\alpha \leq 0.05$ .

Respondents of the SMEs showed that the top most benefit which SMEs are getting from the practices of KM. a high standards of organization performance (i.e., frequency = 32). Building up employees skills and creativeness (frequency = 26) was another important benefit for SMEs to practice KM. A better organizational formulation (frequency = 24), Cost reduction and time saving (frequency = 21), Work simplicity and innovation opportunity (frequency = 16), Uncertainties and risks declining (frequency = 14), Visible use of organization resources (frequency = 12), Better understanding among employees (frequency = 11), Speed up daily job process and activities (frequency = 9), Effective and efficient decisions making (frequency = 8), A high standards of business outputs quality (frequency = 7) Providing target customers of high quality products and services (frequency = 6), It provide business enterprises an opportunities for product innovations (frequency = 4). Table 5, provides a prioritized list of these benefits (according to the significance each benefit has) and the number of SMEs selected that option (frequency).

**Table 5: Benefits of practicing KM by SMEs**

Frequency	Benefits
32	A high standards of organization performance
26	Building up employees skills and creativeness
24	A better organizational formulation
21	Cost reduction and time saving
16	Work simplicity and innovation opportunity
14	Uncertainties and risks declining
12	Visible use of organization resources
11	Better understanding among employees
10	Building up a positive culture and values
9	Speed up job process and activities
8	Effective and efficient decisions making
7	A high standards of business outputs quality
6	Providing target customers of high quality products and services
4	It provide business enterprises an opportunities for product innovations

## 5. Conclusion

The study analyzed statistically the significance of 11 factors which are involved in the practicing of KM by SMEs in Irbed district of Jordan and the results shows that the 11 factors are very important to SMEs management for maintaining business success and progress on the light of business and market trends. Factors were as organization leadership support, organization Culture, organization Resources, information technology, human resources management, strategy and purposes, motivational aids, process and activities, organizational infrastructure, training and education, organizational infrastructure and measurements. The study also specify a prioritized list on the basis of the role of each factor practiced by SMEs. In addition to that ,the study emphasized a number of benefits due to which SMEs have practicing KM.

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