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A Comparative Study of Knowledge Intensive SMEs with in three Business Sectors of North India

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ABSTRACT:

Purpose: To provide executives and scholars with understanding of the various Knowledge Management practices and processes adopted by the SMEs in North India.

Design/methodology/approach: The study is based on primary data collection. Total 300SMEs of three sectors i.e. Software, Pharmaceutical and Textiles from North India with successful Knowledge Management initiatives have been considered for the study. Descriptive statistics and Spearman Rank Order Correlation were used to analyze Knowledge Management practices adopted by these SMEs.

Findings: In software SMEs knowledge sharing was the common process done followed by knowledge reuse process. The practices were also adopted for knowledge storing and transfer process. However, the knowledge capturing process from outside the organization was the least common process. In Pharmaceutical SMEs, knowledge capturing was the major process done. The second process followed by them was knowledge transfer followed by knowledge storing. In textiles SMEs, knowledge sharing was common process due to its informal culture followed by knowledge capturing from within and outside the organization. The practices were also adopted for knowledge transfer but the storage of knowledge and reuse were not regular process in Textiles SMEs.

Originality/value: This research originally examines the knowledge management practicesadopted by software, textiles and pharmaceutical SMEs in North India. Little prior research has carried out to design the research instrument. Thispaper will have significant value for organizations trying to redesign teams to enhance knowledge management.

Research limitations: Study was restricted only to SMEs of three industries of North India

Keywords: Knowledge, Knowledge Management, Knowledge Management practices, Knowledge Management processes, Small and Medium Enterprises (SMEs)

INTRODUCTION

Knowledge is the state of awareness, understanding and amassed thoughts gained through experience and education. It is present in ideas, judgments, intuitions, competencies and skills of the individual. It is the clear and lucid information which originates and is applied in the mind of knower through a successful evaluation of his own history, insights, perceptions and interpretation and generates the capacity to take effective action and generate new ideas. From epistemology and psychology concept, knowledge is the individual's beliefs for solving problems and an apprehension of necessary and universal principles. From the management perspective, knowledge is contextualized in hierarchy that begins with data, rise through information to knowledge and wisdom (Rowley, 2008). Knowledge is the deep understanding of what the data and information means and also how it can be used to do something. Knowledge is a human and highly personal asset that represents the pooled expertise and efforts of networks and alliances (Cranfield& Taylor, 2008).

In the business organization, knowledge is embedded in an organization's routines and standard operating procedures, in products and processes, in technologies and equipments, in layout and structures, in culture and in norms about how things are generally done. The knowledge is the cutting edge and the richest resource for the organization success. It is the irreplaceable capital of the organization. It has been suggested as one of key assets and the need to appreciate and advance knowledge is the determining force for growth and survival for the organizations and causing them to move on and succeed (Grant, 2011: Mishra, 2010: Seba, 2010; Saremi,2009; Ling, 2009; Moria, 2009;Alex, 2008; Pathirage, 2007; Duncan, 2007; King and Zeithaml, 2003; Stacey,2001).Knowledge is the basis for problem solving and decision making (Goh et al, 2010).

The right, focused, current and complete knowledge in the desired context leads to innovative and agile organizations. The timely access to knowledge, making efficient use of this knowledge, and creating new ideas from existing stock of knowledge is the most effective approach to building a solid and enduring competitive foundation for business organizations. Knowledge is the strongest competitive advantage in a rapidly changing market where the development of innovative solutions is required to attract and retain customers and overtake the competition. The knowledge creation, sharing, leveraging and retention are the source of economic growth, business transformation, organization success

and provide the strategic competence (Landaeta, 2008; Wickramasinghe, 2007; Jones, 2007; Jennex, 2007; Jewels, 2006; Popadiuk, 2006; Liebowitz, 2002, Carlson, 2001).

KNOWLEDGE MANAGEMENT (KM)

Knowledge Management is a business intelligence-enabling tool. It refers to a range of strategies, practices, techniques, deliberate ongoing, systematic, methodological, formal and informal process (Joram, 2010; Ooi, 2009; Gupta, 2008; Pillania, 2008; Deng, 2008;Boh, 2007; Bozbura, 2007; Youndt, 2005; Bhirud, 2005; Waltz, 2003; Harrod, 2000) used by organizations to identify, create, represent, process, analyze, store and distribute knowledge for learning across the organization (Evangelista, 2010, Zollo, 2007) with proper utilization of technologies. Knowledge Management is the renaissance of thinking, creating, sharing, leveraging and applying the knowledge, expertise and intellectual capital to retain knowledge before employees leave the organization (Bennet, 2008). It is the cultural aspect of transforming individual-held tacit knowledge to organizational-shared explicit knowledge through technology platform (Wadhwa, 2005) to keep the knowledge pool vibrant.

The major processes involved in Knowledge Management are knowledge creation; knowledge discovery; knowledge processing; knowledge assessment; knowledge transfer; knowledge sharing; knowledge analysis; knowledge update; knowledge mobilization; knowledge evaluation; knowledge integration; knowledge maintenance; knowledge codification; knowledge retention and knowledge reuse (Levy, 2011; Muhammad, 2011; Ling, 2010; Supyucnyong, 2009; Theriou, 2009; Nick, 2009; Serenko, 2009;Denizhan, 2009; Asare, 2008; Rowley, 2008; Mathew, 2008; Gupta, 2008; Ledebur, 2007; Cloonan, 2007; Li, 2007; Neumann, 2007; Zhang, 2007; Fletcher, 2007; Wadhwa, 2006; Holden, 2005; Fernandez, 2004; Barth, 2003; Kim, 2003, Choi, 2003; Desouza, 2003; Wenger,2002;Meixell, 2002; Kucza, 2001; Krogh, 2000; Argote, 2000).

LITERATURE REVIEW

The reasons of adoption of Knowledge Management Practices within organizations are the need for making available, increased knowledge content for the development and provision of products and services; continual learning; achieving better quality products in shorter development cycles; leveraging the knowledge of subject matter experts across the organization; managing the distribution of knowledge in different business environments

and enabling people to reuse knowledge and best practices. Knowledge Management Practices help in turning personal knowledge into organizational knowledge; create new capabilities; enable superior performance and enhance customer value (Harlow, 2008:Enz. 2008; Boh. 2007; Bozbura. 2007; Iandoli, 2007; Kohli. 2007; Rashed, 2005; Lee. 2005; Kalling, 2003).The benefits that small or medium enterprise (SMEs) can derive from sharing knowledge have long been recognized and were well documented. This can be further substantiated through the various studies mentioned below:

Abbas (2011)through theregression analysis on 500 SMEs form Pakistan depicted that knowledge management awareness; human capital, external capital, social capital, and organizational capital havepositive relation with the sustainable growth of the firm in case of SMEs.

Harsh(2010) proposed the three dimensions model for the Knowledge Management that knowledge dissemination about availability of recent technologies, literature on modern machinery, contact details of suppliers of raw materials and buyers among SMEs was extremely essential to enhance their performance, growth and competitive advantage.

Iftikhar and Ahmed (2010) focused on the status of Knowledge Management in SMEs in developing countries and examined the factors that influenced the adoption of Knowledge Management for SMEs in developing countries. The paper further suggested that Knowledge Management Practices can create profitable prospects for SMEs in developing countries.

Rohana (2009) emphasized that in the wake of knowledge-based economy, tacit knowledge sharing was the best tool for SMEs in enhancing competencies and organizational performance. With the impact of globalization, SMEs has to find their own resources that suit to their environment and their capabilities. It illustrated that sharing of the knowledge would help SMEs to be creative, innovative and enhanced the performance. Further, the sharing and focusing on the tacit knowledge lead SMEs for a better performance and helps in producing new products and services.

Emmanouil (2009) proposed a research agenda for the relation of Knowledge Management and SMEs. The research evaluated that the effective implementation of a Knowledge Management strategy was considered as a 'must' and as a precondition of success for contemporary enterprises, in era of knowledge economy.

Zanjani (2009) concluded in their descriptive study that knowledge was the main resource in the SMEs. Knowledge Management was important for SMEs to lead their efforts towards competitiveness. SMEs need to develop their understanding of Knowledge Management as akey business driver rather than as a resource-intensive additional initiative.

Kureshi (2009) illustrated through the field survey on 107 SMEs in northern industrial belt of Pakistan that SMEs were resource constrained by their very nature and Knowledge Management can become a distinct source of competitive advantage among them. Knowledge Management Practices in SMEs lead to better decision making, faster response time, increased profit and improved productivity.

Cantner. (2009) emphasized that an innovation strategy targeted at consumers and continuous R&D activities were positively related to Knowledge Management usage by innovative firms. The results of the matching procedure adopted by them revealed that firms which apply Knowledge Management perform better in terms of higher-than-average shares of turnover with innovative products as compared to their twins with similar characteristics not applying Knowledge Management.

Chen (2009) confirmed with the regression analysis technique that Knowledge Management capacity played a pivotal role in supporting and fostering innovation. The findings provided evidence that Knowledge Management capacity played a mediating role between strategic human resource Practices and innovation performance.

Kagiri(2008) showed through empirical study that Knowledge Management strategy and organizational competence were very dependent on each other and a successful Knowledge Management strategy was to a great extent dependent on the presence of organizational competence and vice versa.

Balestrin (2008) in qualitative research discussed that small businesses have limited resources in terms of finance and human resources, so there has been considerable interest in linking them through a variety of networks and associations to share knowledge and encourage innovation (Butler, 2007; Mohannak, 2007; Timonen&Ylitalo, 2007). They offered a more comprehensive approach towards the creation of organizational knowledge, by shifting from an endogenous process of the individual firm to a multidirectional exogenous process within networks.

Chadha (2007) suggested in their empirical study on Pharmaceutical industry that there was

an urgent need for investment in Knowledge Management Practices by SMEs to improve their efficiency and competitive power.

Bogner and Bansal (2007) used regression analysis to analyzed the data from 30,022 patent records from 42 firms and found that firms benefit from generating and building on knowledge. They confirmed that knowledge positively effects overall firm performance and knowledge creation, knowledge transfer, firm level learning, and other similar approaches were at the heart of gaining sustained competitive advantage.

Maguire (2007) through the joint methodology of questionnaire survey and semi-structured interviews from the SMEs of UK recommended that in the next few years commerce based on knowledge will overtake that based on tangible products. This may entail the setting up of a successful learning organization underpinned by an effective, shared corporate knowledge base. SMEs need to make operational, tactical, and strategic decisions.

RESEARCH METHODOLOGY

Universe of the Study

The present study sampled the three states of North India i.e. Punjab, Haryana and Himachal Pradesh. These states were characterized by high per capita income, considerable contribution to GDP and large number of SMEs. The major contributing industries in these states were Textiles, Software and Pharmaceutical industry. These industries were selected on the basis of production, size, growth rate and exports from the state. There were also major hubs of these industries in the selected states.

In Punjab, the prominent industry is the Textiles industry. This industry of Punjab produces around 70% of the best quality cotton in India. Textiles industry in the Punjab is worth $2.34 billion. Ludhiana, the Manchester of India, produces 95% of the country's woolen knitwear and 85% of the country's sewing machines. Ludhiana has about 10,000 industrial units of Textiles industry, comprising of exporters, brand producers and nearly 99% of units in Textiles industry in Ludhiana are small scale.

The major industry in Himachal Pradesh is Pharmaceutical industry. Baddi in district Solon of Himachal Pradesh is emerging as the Pharmaceutical hub of India. More than half of India's Pharmaceutical production and formulations originate from Himachal Pradesh. From last few years around 300 medium and large-scale units have come up in and around Baddi. It has attracted 75% of the Rs 23,000 crores invested in H.P in the last few years.

Pharmaceutical industry is contributing 15.6% to the total exports from the state and generating huge employment to the people of the state.

Haryana has become a front runner in the country in terms of software exports as with exports of software goods worth Rs 21,000 crore during 2008-09. Gurgaon has contributed the most to the output of the Information Technology and Information Technology Enabled Services (IT &ITES) industry in the state. Around 90 percent of the software units were located there and most of them were small and medium enterprises. Textiles industry is also contributing industry of Haryana.

Sample Size and Sampling Design

To collect data, the present study used judgmental cum convenience sampling where a sample of 300 respondents was collected from the SMEs of three states of North India viz. Punjab, Haryana and Himachal Pradesh in three industries: Textiles, Software and Pharmaceutical. The top level managers like Chief Executives, Chief Knowledge Officers (CKO), Chief Information Officers (CIO), HR executives and other management experts of the organization were contacted to get the questionnaire filled.

Table 1: Sample Size and Response Rate

S.No	Industry	No. of SMEs	Response rate
1	Textiles	100	90%
2	Software	100	80%
3	Pharmaceutical	100	80%

Out of the 300 SMEs in our sample, 260 responses were received. Out of 260 responses, 10 responses were invalid as questionnaire was not complete. 250 responses were found to be usable. The overall response rate was 83%.

RESEARCH INSTRUMENT

The primary data was collected through structured questionnaire comprising of questions based on Likert scale. Some of the variables had been adapted with the modification as per the requirement of SMEs.

Part I contained the questions relating to the demographic factors including name, gender, age, education of the respondent and turnover of the company.

Part II of the questionnaire comprised the list of Knowledge Management Practices used by SMEs. The twelve items had been framed after the in-depth study of literature to access the level of adoption of Knowledge Management Practices by the SMEs. Knowledge management was divided into five processes namely knowledge capturing, knowledge sharing, knowledge transfer, knowledge storing and knowledge reuse. There were three items each for knowledge capturing and knowledge storing and two items each for knowledge sharing, knowledge transfer and knowledge reuse process. All the items were rated on 5 point Likert Scale ranging from Strongly Agree (5) to Strongly Disagree (1)

Table 2 Knowledge Management Practices

Label	KM Process	Knowledge Management Practices	Source
KM1	Knowledge capturing (KC)	captures external knowledge from industrial associations, competitors, clients and suppliers	• Daud et al (2008) • Joshi(2008) • Roxanne (2007) • Chau and Wong(2008) • Jakob (2005) • Wong &Aspinwall (2005) • Filius et al (2000) • Catherine et al (2002) • Wiig (1993)
KM2		captures knowledge from public research institutions, universities and government laboratories	
KM3		Has dedicated resources for acquisition and obtaining internal knowledge from experienced workers and managers.	
KM4	Knowledge sharing (KS)	Encourages workers to participate in project teams with internal and external experts	
KM5		Has a culture intended to promote knowledge sharing	
KM7	Knowledge transfer (KT)	Problems, failures, experiences and method of working are discussed openly and avoid making similar mistakes in the future.	
KM8		Regular meetings are done for discussion of professional projects	
KM9	Knowledge storing (KST)	Databases of good work Practices, lessons learned, skills and listings of experts are regularly updated.	
KM10		Written documentation of lessons learned, training manuals, good work Practices and articles is done	
KM11		The information systems and knowledge stored in the systems are constantly upgraded	
KM12	Knowledge reuse (KR)	People are encouraged to access and use knowledge saved in systems.	
KM6		Has policies intended to improve knowledgeable worker retention	

Source: Field investigation

NORMALITY OF THE INSTRUMENT

The Normality tests were used to determine whether the data resembles the normal distribution and suited for parametric or non-parametric tests. The Kolmogorov Smirnov Test and Shapiro Wilk Test were used to determine the normalcy of the data. For data set smaller than 2000 elements, the Shapiro-Wilk test was used; otherwise, the Kolmogorov-Smirnov test was used. In this study, since there were 250 elements, so Shapiro-Wilk test was used. The Shapiro-Wilk (W) is the ratio of the best estimator of the variance to the usual corrected sum of squares estimator of the variance. The Significance value greater the 0.05 indicated data to be normal.

Table 3: Test of Normality on Items

Item	Kolmogorov Smirnov[a]			Shapiro Wilk		
	Statistic	df	Sig	Statistic	df	Sig
KM1	0.232	250	0.000	0.823	250	0.000
KM2	0.187	250	0.000	0.903	250	0.000
KM3	0.205	250	0.000	0.885	250	0.000
KM4	0.211	250	0.000	0.892	250	0.000
KM5	0.244	250	0.000	0.809	250	0.000
KM6	0.232	250	0.000	0.856	250	0.000
KM7	0.184	250	0.000	0.916	250	0.000
KM8	0.215	250	0.000	0.848	250	0.000
KM9	0.197	250	0.000	0.909	250	0.000
KM10	0.295	250	0.000	0.849	250	0.000
KM11	0.256	250	0.000	0.870	250	0.000
KM12	0.165	250	0.000	0.913	250	0.000

The results of theShapiro-Wilk test (Table 3) showed data for all the items in the study was not normally distributed (significance value < 0.05) and could be analyzed using non-parametric tests.

RELIABILITY OF THE INSTRUMENT

The reliability test was carried out to determine the quality of the measurement items. Internal consistency reliability implies that multiple items measure the same construct, and inter-correlate with one another. Cronbach's Alpha method was used to assess the reliability of the instrument. Alpha values of 0.7 were normally acceptable indicators of internal consistency of an instrument. The statistics tests showed that Cronbach's alpha of the construct is 0.72 indicate satisfactory internal consistency reliability.

DATA ANALYSIS AND INTERPRETATION

Descriptive statistics and Spearman Correlation are used to analyze the Knowledge Management practices adopted in selected SMEs.

Knowledge Management Practices Adopted inSoftware SMEs

Table 4 Knowledge Management Practices Adopted in Selected Software SMEs

Label	Strongly disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)
KM1			7(8.75)	29(36.25)	44(55)
KM2	11(13.75)	31(38.75)	15(18.75)	7(8.75)	16(20)
KM3			12(15)	36(45)	32(40)
KM4		2(2.5)	19(23.75)	32(40)	27(33.75)
KM5		1(1.25)	7(8.75)	42(52.5)	30(37.5)
KM6		1(1.25)	26(32.5)	34(42.5)	19(23.75)
KM7	12(15)	30(37.5)	22(27.5)	9(11.25)	7(8.75)
KM8			7(8.75)	29(36.25)	44(55)
KM9		9(11.25)	20(25)	24(30)	27(33.75)
KM10		6(7.5)	32(40)	17(21.25)	25(31.25)
KM11		1(1.25)	17(21.25)	38(47.5)	24(30)
KM12			19(23.75)	27(33.75)	34(42.5)

Source: Field investigation (SPSS 16.0)

Table 5 narrated that Pharmaceutical SMEs did regular meetings for discussion of their professional projects (95%). The surveyed organizations actively captured external knowledge from industrial associations, competitors, clients, suppliers (66.25%) and from

public research institutions, universities and government laboratories (56.25%). 60% of the respondents agreed that they a culture that promoted knowledge sharing and 58.75% said they their organizations had dedicated resources for capturing internal knowledge. They had the programs intended to improve knowledgeable worker retention (52.25%) and encouraged workers to participate in project teams with internal and external experts (43.75%). However the practices of open discussion of failures and interaction with external experts were not so popular in Pharmaceutical SMEs (33.75%).

Only 36.25% agreed that the databases of good work Practices, lessons learned, skills and listings of experts were regularly updated and 50% of the respondents were uncertain about this practice. 27.5% of the respondents agreed that their SMEs did written documentation of lessons learned. training manuals, good work practices and articles and the knowledge systems were constantly upgraded.

Knowledge Management Practices Adopted in Textiles SMEs

Table 6 Knowledge Management Practices Adopted by Selected Textiles SMEs

Label	Strongly disagree (%)	Disagree (%)	Uncertain (%)	Agree (%)	Strongly Agree (%)
KM1	-	3(3.3)	16(17.8)	42(46.7)	29(32.2)
KM2	19(21.1)	31(34.4)	28(31.1)	12(13.3)	-
KM3	3(3.3)	17(189)	40(44.4)	23(25.6)	7(7.8)
KM4	6(6.7)	11(12.2)	31(34.4)	30(33.3)	12(13.3)
KM5	-	-	4(4.4)	35(38.9)	51(56.7)
KM6	-	7(7.8)	12(13.3)	36(40)	35(38.9)
KM7	1(1.1)	7(7.8)	40(44.4)	31(34.4)	11(12.2)
KM8	9(10)	32(35.6)	35(38.9)	14(15.6)	-
KM9	17(18.9)	33(36.7)	28(31.1)	12(13.3)	-
KM10	-	16(17.8)	48(53.3)	19(21.1)	7(7.8)
KM11	-	16(17.8)	48(53.3)	19(21.1)	7(7.8)
KM12	16(17.8)	33(36.7)	25(27.8)	15(16.7)	1(1.1)

Source: Field investigation (SPSS 16.0)

Table 6 represented that Textiles SMEs had a culture that promoted knowledge sharing (96%) and had policies intended to improve knowledgeable worker retention (79%). Most of the respondents (79%) agreed that their organization captured external knowledge from industrial associations, competitors, clients and suppliers.

Nearly 47% narrated that they discussed the problems, failures, experiences and method of working and tried to avoid making similar mistakes in the future and obtained internal knowledge from experienced workers and managers. However, the other Practices were not much used by Textiles SMEs.

KNOWLEDGE MANAGEMENT PROCESSES

Further analysis was done to determine the major process of Knowledge Management followed by selected SMEs. From the literature review, Knowledge capturing (KC) process, included the items KM1 to KM3; the Knowledge sharing (KS) included the items KM4 and KM5; the Knowledge transfer (KT), was the sum of items KM7 to KM8; the Knowledge storing (KST), included items KM9 to KM11 and the Knowledge reuse (KR) process, was the sum of items KM12 and KM6. The average score helped to determine the major Knowledge Management process followed in SMEs (Table 7).

Table 7: Knowledge Management Processes

Label	Knowledge Management Process	Software SMEs	Pharmaceutical SMEs	Textiles SMES
KC	Knowledge capturing	3.16	3.7	3.13
KS	Knowledge sharing	4.19	3.1	4.00
KT	Knowledge transfer	3.55	3.5	3.05
KST	Knowledge storing	3.86	3.2	2.50
KR	Knowledge reuse	4.06	3.0	2.95

Source: Field investigation (SPSS 16.0)

The results of the average score depicted that sharing of knowledge was usually done in Software SMEs (4.19) followed by knowledge reuse process (4.06).These were the most common process done in Software SMEs. The practices were also employed for knowledge storing(3.86) and transfer (3.55).The knowledge capturing process from outside the organization was the least one (3.16) which might be due to time and resources constraints. In contrast to that, knowledgecapturing was the major process done (3.7)in Pharmaceutical

SMEs. This might be due to reason that Pharmaceutical SMEs were engaged in continuous learning and R&D. The second process followed by them was knowledge transfer (3.5) within and outside the organizations followed by knowledge storing (3.2) for further use. The knowledge sharing (3.1) and reuse (3.0) were the least used process done in Pharmaceutical SMEs.

In textiles SMEs, the results depicted that knowledge sharing was common process in Textiles SMEs (4.00) due to its informal culture followed by knowledge capturing (3.13) from within and outside the organization. The practices were also adopted for knowledge transfer (3.05) but the storage of knowledge and reuse were not regular process in Textiles SMEswith mean value less than 3.

Spearman's Rank Order Correlation

Spearman's Rank Order Correlation test was run to determine the relationship between five processes i.e. 'Knowledge capturing' (KC), 'Knowledge sharing' (KS), 'Knowledge transfer' (KT), 'Knowledge storing' (KST) and 'Knowledge reuse' (KR). The Spearman Rank Order Correlation coefficient, r_s, is a non-parametric measure of the strength and direction of association that exists between variables. In the schedule, each variable was measured by multiple items, therefore the average score had been computed for correlation.

Table 8: Correlation between Knowledge Management processes in selected SMEs

			KC	KS	KT	KST
KS	Software	Correlation Coefficient	0.642**			
		Sig. (2-tailed)	0.00			
	Pharma	Correlation Coefficient	0.228*			
		Sig. (2-tailed)	0.042			
	Textiles	Correlation Coefficient	0.228**			
		Sig. (2-tailed)	0.031			
KT	Software	Correlation Coefficient	0.343**	0.343**		
		Sig. (2-tailed)	0.00	0.00		
	Pharma	Correlation Coefficient	-.071	.462**		
		Sig. (2-tailed)	0.531	0.001		
	Textiles	Correlation Coefficient	0.665**	0.059		
		Sig. (2-tailed)	0.001	0.578		
KST	Software	Correlation Coefficient	0.330**	0.194	0.09	
		Sig. (2-tailed)	0.00	0.09	0.45	
	Pharma	Correlation Coefficient	0.034	0.175	0.070	
		Sig. (2-tailed)	0.762	0.120	0.537	
	Textiles	Correlation Coefficient	0.371**	0.055	0.266**	
		Sig. (2-tailed)	0.001	0.606	0.011	
KR	Software	Correlation Coefficient	0.503**	0.361**	0.214	0.334**
		Sig. (2-tailed)	0.00	0.00	0.06	0.00
	Pharma	Correlation Coefficient	-.027	.461**	.547**	.075
		Sig. (2-tailed)	0.809	0.0001	0.0001	0.506
	Textiles	Correlation Coefficient	0.031	0.199	-0.081	0.38
		Sig. (2-tailed)	0.770	0.060	0.449	0.725

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

Source; Field investigation (SPSS 16.0)

Software SMEs

There was a strong, positive correlation between the 'Knowledge capturing' (KC) Practices, with all other four factors (r_s = .642, .343, .330 & .503) respectively which was statistically significant (P = .00).

The correlation between the 'Knowledge sharing' (KS) with 'Knowledge transfer' (KT)and 'Knowledge reuse' (KR)(r_s = .343 & .361) was also statistically significant (P = .00). But its relation with 'Knowledge storing' (KST) Practices was not significant (r_s = .194, P = .09).

The 'Knowledge transfer' (KT) Practices were not correlated with Knowledge storing (KST) and 'Knowledge reuse' (KR) Practices (r_s = .09 & .214 with P = .45 & .06). But there was positive correlation between the 'Knowledge storing' (KST) Practices and 'Knowledge reuse' (KR) Practices and also statistically significant (r_s = .334, P = .00).

Pharmaceutical SMEs

The results of Spearman's Rank Order correlation test (Table 8) suggested that there was a positive correlation between the 'Knowledge capturing' (KC) process. and 'Knowledge sharing' (KS) with r_s = .228 which was statistically significant (P = .42). The results further suggested that Knowledge capturing process was not related with Knowledge transfer. Knowledge storing and Knowledge reuse. This meant that knowledge captured within and outside the organization by the employees was shared between them but they hardly preferred to transfer this knowledge to other departments and also did not store and reuse that KNOWLEDGE.

There was strong and positive correlation between the 'Knowledge sharing' (KS) with 'Knowledge transfer' (KT) and 'Knowledge reuse' (KR)(r_s = .462 & .461) getting P = .0001. But its relation with 'Knowledge storing' (KST) Practices was not significant (r_s = .175, P = .120).

The 'Knowledge transfer' (KT) process was not correlated with Knowledge storing (KST) process with r_s = .070 at P = .537. However it was positively related with and 'Knowledge reuse' (KR) process getting r_s = .547 with P = .0001. The results further suggested that 'Knowledge storing' (KST) Practices and 'Knowledge reuse' (KR) Practices were not correlated and with r_s = .075 at, P = .506.

Textiles SMES

The results of Spearman's Rank Order correlation test (Table 8) suggested that there was a strong, positive correlation between the 'Knowledge capturing' (KC) Practices, with 'Knowledgesharing, 'Knowledge transfer' and 'Knowledge storing'(r_s = .228, .665, and .371) respectively which was statistically significant getting P= .031, .001 and .001.

Further, the correlation between the 'Knowledge sharing' (KS) with 'Knowledge transfer' (KT), 'Knowledge storing' (KS) and 'Knowledge reuse' (KR) was also statistically significant (P =>.00). The 'Knowledge transfer' (KT) Practices were correlated with 'Knowledge storing' (KST) (r_s = .266 with P = .01) but there was no correlation with 'Knowledge reuse' (KR) Practices (P= .449).

CONCLUSION

The Software SMEs actively. captured external knowledge and did regular meetings for discussion of professional projects and shared their tacit and explicit knowledge. They had a culture that promoted knowledge sharing and dedicated resources for acquisition of internal knowledge from experienced workers and managers. Most of the organizations encouraged workers to participate in project teams with internal and external experts and had policies to improve knowledgeable worker retention. The knowledge systems, databases of good work Practices, lessons learned, skills and listings were constantly upgraded and people were encouraged to access knowledge saved in these systems. But the organization rarely captured knowledge from public research institutions, universities and government laboratories and the problems, failures, experiences and method of working were not discussed openly in these SMEs.

The knowledge sharing was the common process done in Software SMEs followed by knowledge reuse process. The Practices were also adopted for knowledge storing and transfer process within and outside the organizations. However, the knowledge capturing process from outside the organization was the least common process might be due to time and resources constraints.

The Pharmaceutical SMEs were engaged in continuous learning and R&D and knowledge capturing was embedded in their daily operations. They actively captured external knowledge from industrial associations, competitors, clients, suppliers and from public research institutions, universities and government laboratories. They also had dedicated

resources for capturing internal knowledge. They had a culture that promoted knowledge sharing. The knowledge sharing in a team of established experts enabled them to focus on improving profitability, productivity, product and service quality and decreasing operational costs that resulted in significant improvements and innovation. They had the programs intended to improve knowledgeable worker retention and encouraged workers to participate in project teams with internal and external experts. The knowledge transfer within and outside was followed by them on regular basis. They did regular meetings for the discussion of their professional projects which facilitates the transfer of tacit knowledge. However the practices of open discussion of failures and interaction with external experts were not so popular in Pharmaceutical SMEs. The databases of good work practices, lessons learned, skills and listings of experts were not regularly updated and written documentation of lessons learned, training manuals, good work Practices and articles and the up gradation of knowledge systems was not regular practice for them.

Textiles SMEs had a culture that promoted knowledge sharing and has policies intended to improve knowledgeable worker retention. Most of the respondents agreed that their organization captured external knowledge from industrial associations, competitors, clients and suppliers. They discussed the problems, failures, experiences and method of working and try to avoid making similar mistakes in the future and obtain internal knowledge from experienced workers and managers. Knowledge management Practices in this industry was a workforce initiative.

Knowledge transfer was done in Textiles SMEs by working together, learning by doing, apprenticing, face-to face discussion and embedding knowledge through procedures and document exchange. The knowledge capturing was done through collective learning of its members, stakeholders and customers. However the storage of knowledge and reuse were not regular process in Textiles SMEs.

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