CHAPTER 6

FINDINGS AND IMPLICATIONS

The current research presented that KM practices were prevalent in the pump manufacturing cluster. The research model explored the influence of KM practices on the work performance measured through efficiency, effectiveness and timeliness of the work performed by the employees. The present study also applied the concept of capacity building to assess the existing capacity of KM practices through a KM Capacity GRID. This chapter presents the findings and implications of the research.

6.1 PREVALENCE OF KM PRACTICES

- The results indicated that knowledge creation practices were present in pump manufacturing firms. This finding is consistent with previous results (Bennett 2001; Janz & Prasarnphanich 2003; Peltokorpi et al 2007). This implies that firms in pump manufacturing industry give importance to knowledge creation. In small and medium enterprises, knowledge creation is done mainly to meet the unique customer needs (Wee & Chua 2013). So knowledge creation becomes imperative and particularly sensitive for small organizations (Martin et al 2002).

- The research study showed that knowledge is acquired from external agents through the four modes given in spiral model by Nonaka & Nishiguchi (2001). This result is consistent with the
previous studies (Lavie 2006; Fong & Lee 2009; Park et al 2009). This indicated that the firms get benefitted by acquiring knowledge from others in industrial clusters because knowledge about external agents is very important to benchmark business practices and develop competitive strategies to have an advantage (Chen et al 2006). The results further showed that the knowledge acquisition through combination mode was low. Hence it is imperative for the pump manufacturing cluster to acquire knowledge from external agents to develop necessary reports and goal plans.

- The firms in pump manufacturing cluster can acquire explicit knowledge from customers through collecting feedback, suggestions and involving them in design and development of products (Gebert et al 2003). Knowledge acquisition from suppliers can happen through getting insights about quality, delivery and defects (Wu & Yeh 2011). The collaboration with the partners about distribution channels, technology sharing and common projects are the main source of knowledge acquisition. The firms can use IT systems like data mining and document management systems for collecting and analyzing feedback, suggestions, insights and enhancing communication with partners.

- The study indicated that knowledge sharing practices were prevalent in pump manufacturing firms. Also the study showcases that organizational factors, employee focused factors and technical factors induce and support the employees to share knowledge leading to enhanced work performance. This result is consistent with previous findings (Lin 2007; Sondergaard et al 2007; Chatzoglou & Vramaki 2009; Saenz et. al 2009;
Tohidinia & Mosakhani 2010; Harbi et al 2011). But the existence and effective of information technology tools knowledge sharing was low. The role of IT support in knowledge sharing is vital (Huysman & Wulf 2006). Hence the firms should concentrate on deploying IT tools to support sharing of knowledge.

- Subsequent to knowledge sharing, the study indicated that, knowledge storage was practiced in pump manufacturing firms. The tacit knowledge held by employees was captured and stored in formal reports and also that explicit knowledge like manuals, documents and procedures were documented for future use. This result is consistent with previous studies (Gupta et al 2000; Lim & Klobas 2000; Gray 2001; Egbu et al 2005; Coakes 2006; Ray 2008).

- Finally, the study supported that knowledge that is created, shared and stored in the organization was utilized. This result is consistent with the previous studies (Bhatt 2000; So & Bolloju 2005; Koh et al 2005; Chi et al 2006; Fong & Lee 2009). The study also indicated that IT tools availability to access and utilize the knowledge was low. The pump manufacturing firms have to deploy the required technology so that employees have access to the stored knowledge and utilize them.

6.2 KM PRACTICES AND WORK PERFORMANCE

- The conceptual model estimation results revealed that KM practice is a significant variable affecting the work performance of individuals.
Knowledge creation practices had a positive significant impact on the knowledge sharing practices. This indicated that a systematic effort to improve knowledge creation supports better knowledge sharing practices.

The knowledge that is created is mostly shared among employees and then utilized. But not all knowledge that is created was stored. Knowledge creation does not significantly affect the knowledge storage practices. This shows that although the firms in pump manufacturing cluster have the practice of storing knowledge, they do not possess adequate systematic process to store all the knowledge that is created within organizations.

Knowledge acquisition practices had a significant positive effect on knowledge sharing and knowledge storage practices. This implied that the organizations acquire knowledge from external agents and subsequently share it among employees and also store the knowledge for future utilization by the employees.

Knowledge sharing practices had a significant positive impact on knowledge storage practices in the organizations. The knowledge that was shared among the employees was stored to enhance the work performance.

Knowledge storage practices had a positive influence on knowledge utilization practices in organizations. Storing the knowledge helps the employees to utilize it for performing their job more effectively.
Knowledge utilization practices had a positive and significant impact on the work performance of the employees in terms of efficiency, effectiveness and timeliness. Hence in this manufacturing cluster, extensive use of knowledge that is created, acquired, shared and stored worked as a major catalyst and the firms were benefitted by better work performance.

The study also presented a significant understanding about the prevalence of knowledge management practices among pump manufacturing firms in this part of the region. The empirical model of the study portrayed that the knowledge that is as much created and acquired is not fully shared and stored. The shared knowledge is not completely stored and also the stored knowledge is not adequately utilized. The manufacturing organizations can ensure that adequate systems and processes are available, so that knowledge whatever is created and acquired is shared, stored and utilized by the employees to the maximum extent so that they have the required knowledge to perform better. This will help the organizations to compete and sustain in the long run.

6.3 KM CAPACITY IN ORGANIZATIONS

Originating ba for knowledge creation fell in High Capacity – High Consensus quadrant. Exercising ba and Dialoguing ba fell in High Capacity – Low Consensus quadrant. Hence manufacturing firms that provide a platform which is physical or virtual that nurtures more formal and informal dialogues, communication, interaction and also provide enough opportunities for exercising and practicing new concepts and
ideas and learn by self-refinement. But the consensus level of employees has to be enhanced.

- Systematizing ba is not much utilized for interaction and knowledge creation and the existing IT infrastructure is a major obstacle for introducing new ideas and technologies in manufacturing industry. Manufacturing firms should build an environment conducive for knowledge creation through systematizing ba to enhance work performance and sustain in the long run. They should develop and utilize the necessary IT infrastructure for nurturing new knowledge capable of elevating the firm to higher levels of efficiency (Bennet 2001).

- Socialization mode for knowledge acquisition fell in High Capacity – High Consensus quadrant showing that tacit knowledge is acquired from external agents and converted to tacit knowledge in the organizations.

- Knowledge acquisition through combination mode has obtained a Low Capacity – Low Consensus score. Knowledge acquisition through Internalization mode lies in the center of the GRID. Knowledge acquisition through externalization mode lies in between Low Capacity-Low Consensus and High Capacity-Low Capacity quadrants indicating that organizations in the cluster needs to build these to enhance their knowledge acquiring capacity for competitive performance.

- Organizational factors and employee focused factors for knowledge sharing fall in High Capacity – High Consensus quadrants showing that organizations adopt these factors and they are practiced with high agreement levels of employees.
promoting the knowledge sharing process. This showed that firms in manufacturing cluster form cross-functional teams and allow employees to participate in decision making process. They provide a supportive organizational climate that helps in knowledge sharing. In addition, building mutual trust among employees, proper attitude among promoted knowledge sharing. Knowledge sharing also happened by allowing senior employees to mentor their colleagues because mentors share their tacit knowledge and demonstrate their skills and behaviors to others which benefited the firms (Handzic & Hassan 2003).

- Technical factors for sharing knowledge obtained a high capacity but average consensus score in the GRID, lying on the brim between low and high consensus showing potential for further enhancement of capacity.

- Knowledge storage practices fell in Low Capacity – Low Consensus quadrant. The study shows that there exists a further scope for building the knowledge storage capacity in the manufacturing cluster because not all the knowledge that has been created is stored for future utilization. The knowledge that is created and shared in an organization has to be documented and stored for further utilization to derive maximum benefits.

- Knowledge utilization fell in High Capacity – Low Consensus quadrant. This implied that the employees had low level of agreement in utilizing the knowledge. The pump manufacturing firms should use the knowledge that were created internally within their firms and the knowledge that
they acquire externally from other agents. The firms also should deploy the required IT tools that enable the employees to use the knowledge in their work.

To summarize, the following were the main extraction of the KM Capacity GRID:

- Knowledge creation in these firms happened mainly through originating ba and had a high capacity.

- Three other knowledge creating ‘ba’s like dialoguing ba, exercising ba and systematizing ba needed further capacity building strategies.

- The firms acquired knowledge using socialization mode but other modes of knowledge acquisition like internalization, externalization and combination needed capacity development.

- Organizational factors and employee focused factors of knowledge sharing was predominant with high capacity and consensus level of employees was also high. But the capacity and consensus of technical factors for knowledge sharing needed enhancement.

- Knowledge storage and utilization capacity among the firms also required capacity building.

### 6.4 STRATEGIES FOR KM CAPACITY BUILDING

By forming cross-functional team of industry practitioners and displaying the KM capacity assessment GRID made them understand the
current capacity and this opened avenues for capacity building. The main strategies developed for KM capacity building were,

- Popularize KM concepts by conducting boot camps in the firms
- Conduct interaction and brainstorming session among employees for knowledge creation
- Allow employees to self learn and practice new ideas
- Training through mentoring by senior colleagues
- Devise channels for external knowledge acquisition through collaborative agreements with external agents
- Use IT tools for creating organizational memory and thereby enhance knowledge storage and utilization.
- Have score card to keep track of knowledge utilization by the employees.

Implementing these strategies would build the capacity of KM practices that will further develop the capacity of employees to improve their work performance.

6.5 RESEARCH CONTRIBUTION

Assessment of KM practices and the capacity building process is first of its kind in KM research and thus contributed to the vast growing discipline. This research provided a new platform for addressing the manpower capacity building issues among organizations by the adoption of KM practices. Primary focus was to diagnose the KM practices that lead to enhanced work performance of the employees. Then a systematic capacity
assessment approach was followed for assessing and mapping the KM capacity lag areas. The capacity assessment GRID has provided a pictorial representation of KM practices which were significantly practiced with high capacity and consensus of the employees and also identified the low capacity KM areas which needed considerable attention. Then appropriate strategies were developed for enhancement of capacity in those areas. This research aimed to answer the following questions

- How KM is practiced in an organization?
- What KM practices influence employees in organizations to build their capacity and hence perform better?
- How the organizational capacity of the KM function can be assessed?
- How the organizations can exploit the knowledge available with them for better work performance?

6.6 CONTRIBUTION TO THE PUMP MANUFACTURING CLUSTER

Despite the commendable contribution to the Nation’s economy, MSMEs face a number of challenges. Most crucial among them are limited capital and knowledgeable and skilled manpower. MSMEs in India still fail to harness the power of knowledge management. This study contributed to the manufacturing cluster by diagnosing, assessing and developing strategies to build the KM capacity which in turn builds the capacity of employees to execute their job with improved performance.

Pump manufacturers in India can utilize the KM Capacity GRID methodology to diagnose and assess the capacity of their KM practices. Such
assessment will enable the firms to identify the capacity lag areas. And also they would be able to benchmark their KM practices with other organizations in the industry. This would help them to clearly identify the KM practices that are predominant and those practices that are not. Having identified the KM practices that are lagging and not been adopted, the organizations can systematically plan and begin practicing them. This would help them to enhance the knowledge and work performance of the employees.

As the pump manufacturing firms operate as a cluster, this exercise can be conducted periodically for the cluster as a whole or for individual firms, at least once a year. The outcome of the assessment can be used as reference for comparative analysis among the firms in the cluster. The firms can form inter-organizational systems to manage the knowledge within and across the firms for sustainability and increased performance. This exercise, being conducted with the consensus of the employees will ensure participation by them and make the whole cluster self-sufficient. As MSMEs agglomerate as an industrial cluster, the KM practices can enhance the learning of the whole cluster and also improve the learning of individual firms (Cheng et al 2014).

Knowledge is an intangible asset; which lies inherent within organizations and is unique to them. But there was no concrete methodology to assess the extent of KM practices of the organizations. This study provided evidence that KM capacity can be assessed and the capacity can be built with the consensus of the employees. This capacity assessment and capacity building activities can be carried out at the national level in different clusters to build the capacity of the workforce with the help of the knowledge residing within the organizations.
6.7 IMPLICATIONS FOR PRACTITIONERS AND ACADEMICIANS

This study conducted among firms in pump manufacturing cluster brings out many interesting results. According to this research, KM practices were prevalent in small and medium enterprises. But the extensiveness and capacity can be built with the support from top management so that employees adopt and practice with high level of agreement. The findings generated from this study have implication for both practitioners and academicians throwing light on the extent of KM practices as well as better understanding of how organizations facilitate increased levels of knowledge creation, acquisition, sharing, storage and utilization, enhancing employee work performance. The research presented here, brings together well-accepted literature related to work performance of individuals and linking it with current research of knowledge management. Work performance as a measure of outcome of KM practices in organizations has provided a metric to measure the extent of KM practices which is often difficult to measure. Statistically significant hypothesis provide support for the robustness of the proposed research model, thus providing enough evidence that the time and effort spent on establishing the KM practices will yield capacity building of the employees and hence better performance in their work. The study provides inputs to the practitioners in the manufacturing industry to understand

- to what extent organizations provide the physical and virtual platform and space called as ‘ba’ by Nonaka & Konno (1998) for knowledge creation,

- to what extent organizations acquire knowledge from external agents to understand the best practices in the industry
- to what degree, the organizational factors like organization climate and structure, cross-functional teams, top management support and rewards; employee focused factors like trust, attitude and mentoring; and technology utilization influence knowledge sharing,

- to what degree the organization has systems and processes to capture and store the shared knowledge,

- to what extent the organization has means to access and utilize the knowledge that is created and stored.

The answers to these questions provide meaningful insights for manufacturing firms to invest time and effort in creating structures, processes and systems to encourage learning and managing knowledge. The KM Capacity GRID developed in the course of this research provided varied understanding about the existing capacity of KM practices and the subsequent critical reflection and brain storming sessions helped the pump manufacturing cluster for building the capacity of KM function.