CHAPTER 1

INTRODUCTION

1.1 MANUFACTURING INDUSTRY

Manufacturing sector is the backbone of any country. Manufacturing industry in India has gone through various phases of development over the period of time, starting from industrial foundation in 1950’s and early 1960’s, License-permit Raj from 1965 to 1980. In 1990’s India witnessed the phase of liberalization and entered into global competitiveness. It has grown at a robust rate over the past ten years and has been one of the best performing manufacturing economy. Until 1991, industrial development was largely based on product market regulations, with capacity licensing being its principal instrument. Though this strategy had successfully created an industrial base, there were limited incentives for product innovation and for a competitive push. Economic reforms initiated in 1991, gradually removed these product market licenses. The new industrial development strategy prompted private initiatives to a larger extent. The last two decades have seen the growth of Indian economy. This has been attributed to growing dynamism of the service sector, but undoubtedly India’s manufacturing sector is vital for its economic growth with 16% net contribution to GDP and with potential to grow more (Planning Commission 2014).

The Indian manufacturing industry is dominated equally by the presence of large scale organizations and micro, small & medium enterprises
(MSMEs). All heavy industries like iron & steel manufacturing, automobile manufacturing, fertilizer, power, oil and gas fall under large scale industrial arena. The MSME sector is predominant in manufacturing light engineering equipments, wood products, rubber and plastic products, electrical machinery & apparatus, furniture manufacturing, precision and optical instruments etc. The MSME sector nurtures entrepreneurship, driven by individual creativity and innovation. This sector contributes 8 per cent of the country’s GDP, 45 per cent of the manufactured output and 40 per cent of its exports. The MSMEs provide employment to about 1012.59 lakh people through 447.73 million enterprises (Government of India 2013). The labour to capital ratio in MSMEs and the overall growth in the MSME sector is much higher than in the large industries. Thus, MSMEs are important for the national objectives of growth with equity and inclusion.

Tamil Nadu is the fourth largest state of India, and contributed 7.6% to India’s GDP in 2012-13 (India Brand Equity Foundation 2013). The GSDP of Tamil Nadu grew to 14.68% at current prices in 2013-14 compared to 11.64% in 2012-13 (Tamil Nadu Government 2015). Tamil Nadu is among the most industrialized states in the country. It has a diversified manufacturing sector and features among the leaders in several industries like automobiles and components, engineering, pharmaceuticals, garments and textile products, leather products, chemicals and plastics etc. The GSDP of manufacturing sector showed an increase in growth rate from 1.12% in 2012-13 to 4.58% in 2013-14 (Tamil Nadu Government 2015). It ranks first among the states in terms of number of factories and industrial workers. Chennai, Coimbatore, Madurai, Thiruchirappalli, Salem, Tirunelveli and Erode are some of the key cities in the state. As of March 2014, the state had 9.68 lakh registered MSMEs, providing employment to around 63.18 million persons with a total investment of around Rs.67,130 crore (Micro, Small and Medium Enterprises Department 2014).
1.2 CLUSTERS IN INDIA

MSMEs do not derive any benefits because of their size when exposed to large markets and global competition. An agglomeration of the firms would make the industry stronger and benefit in vast markets. For inclusive growth and sustainable development, most of the MSMEs have adopted a Cluster Development Approach. Clusters are sectoral and spatial concentration of enterprises, having a definite kind of dynamism in production that opens up efficiency and flexibility gains. Porter (2003) defined clusters as geographically close groups of interconnected companies and associated institutions in a particular field, linked by common technologies and skills. A cluster is basically a local agglomeration of enterprises encountering common opportunities and hurdles. Clusters mainly consist of MSMEs, but often also include some large enterprises producing and selling a range of related and complementary products and services. Clusters are normally concentrated in regions and sometimes in a single town which enables ease of communication, logistics and personal interaction. This close proximity provides opportunity to reap the benefits arising out of joint efforts and shared vision of the future. A consciously pursued joint action gives the individual firms in the cluster, a collective efficiency that benefits the whole cluster (Holmstrom 1994; Nadvi & Schmitz 1998; Nadvi & Kazmi 2001; Rabellotti 2001).

India abounds in clusters and the Indian Government has adopted the cluster development approach as a key strategy for enhancing the productivity and competitiveness as well as capacity building of MSMEs and their collectives in the country. The government initiatives include many Cluster Development Programs for the growth of the clusters, namely diagnostics study reports, soft interventions like technical assistance, exposure visits, market development etc for cluster units, hard interventions like setting up testing facility, raw material bank/sales depot, design center, production
center etc, and infrastructure development (Ministry of Micro, Small and Medium Enterprises 2014). With these initiatives, the clusters are able to sustain, flourish and face the competition. The MSME clusters greatly contribute to employment creation. According to a UNIDO survey of Indian SSI clusters undertaken in 1996, there are 350 SSI clusters and approximately 2000 rural and artisan based clusters in India (Cluster Observatory 2013). Clusters are classified as industrial clusters, handicraft clusters, handloom clusters, micro-enterprise clusters and service clusters. Some noted clusters in India include, Trajpur Ceramic cluster in Gujarat, Bangalore packaging in Karnataka, Shirpur Power loom in Maharashtra, Kanpur footwear in Uttar Pradesh, Hyderabad fiber glass in Andhra Pradesh, Coimbatore Engineering in Tamil Nadu, Cuttack Utensils in Orissa etc.

1.2.1 Motor and Pump Cluster in Coimbatore

In India around 800 large, medium and small firms are producing pumps for various purposes, starting from agriculture to nuclear power generation. Indian pump manufacturers not only meet the domestic market demand but also export to more than 70 countries worldwide. South India is known for many clusters, but predominantly for machinery and equipment manufacturing (Cluster Observatory 2013). Coimbatore is very much synonymous with pump and motor products and is a multi-sector cluster with concentration of pump and motor manufacturing units, light engineering enterprises and large number of foundries. There are about 253 large/medium scale firms and 51,580 registered micro/small scale firms in Coimbatore (MSME Development Institute 2013). The presence of these medium and small firms has recognized Coimbatore as the Cynosure of South India. The primary capital income of Tamil Nadu comes from the output of this cluster. The success for the development of these firms could be attributed to the innovative and technical skills of artisans, technocrats and industrialists.
The indigenous pump and motor industry in Coimbatore started way back in early 1900’s and the first pump was developed in 1928 in Coimbatore. The urbanization and liberalization polices in 1990s had stimulated the growth of these firms. They started manufacturing pumps which catered to different industrial segments providing employment to 38,000 people and indirect employment to 90,000 people in the district (MSME Development Institute 2013). Over the years, not only the production base for pumps has broadened but also the expertise to manufacture innovative and sophisticated pumps like centrifugal pumps, reciprocating pumps, jet pumps, gear pumps, process pumps, submersible pumps and so on. The pump and motor cluster in Coimbatore accounts for 40% to 50% of the value produced in the country. The cluster is divided into three broad categories, namely medium scale industries, subcontracting and micro Assemblers. The standards and specifications of products from this cluster are 15-20% higher than the competing clusters. A summary of Motor and Pump manufacturing cluster in Coimbatore is given in Table 1.1.

**Table 1.1 Motor and Pump Manufacturing Cluster in Coimbatore**

<table>
<thead>
<tr>
<th>Name of the Cluster</th>
<th>Coimbatore Motor &amp; Pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>Coimbatore</td>
</tr>
<tr>
<td>State</td>
<td>Tamil Nadu</td>
</tr>
<tr>
<td>No of firms (by type)</td>
<td>1103</td>
</tr>
<tr>
<td>Turnover</td>
<td>Rs. 21500 Million</td>
</tr>
<tr>
<td>Associations in cluster</td>
<td>• CODISSIA</td>
</tr>
<tr>
<td></td>
<td>• SIEMA</td>
</tr>
<tr>
<td></td>
<td>• TAPMA</td>
</tr>
<tr>
<td></td>
<td>• CII</td>
</tr>
<tr>
<td></td>
<td>• ICCI</td>
</tr>
<tr>
<td>Major products</td>
<td>• Machining of Ci rough casting motor body, motor spares &amp; pumps spares</td>
</tr>
<tr>
<td></td>
<td>• Manufacturing of stator laminations and rotor die castings</td>
</tr>
<tr>
<td></td>
<td>• Manufacture of capacitors</td>
</tr>
<tr>
<td></td>
<td>• Stamping and plates</td>
</tr>
<tr>
<td></td>
<td>• Hardware such as bolts etc</td>
</tr>
</tbody>
</table>

(Source : Cluster Observatory 2013)
1.3 DECLINING TREND IN MANUFACTURING SECTOR

The global manufacturing sector has been moving at a slower pace than the overall economy for some time now. Despite the market shift in the location of manufacturing from developed to developing countries, the annual growth of global manufacturing value slowed from 4.3 per cent between 1995 and 2000 to 2.6 per cent between 2000 and 2005. In India, the release of the annual GDP figures for 2012-13 had surprises, with GDP growth at its lowest in a decade at 5% (Confederation of Indian Industry 2014). Also in the financial year 2011-2012 and 2012-2013, the India’s manufacturing GDP was around 8% (Figure 1.1), showing that the economy is tending towards ‘no growth’ or ‘moderate decline’.

As a result, the sector’s contribution to GDP has declined marginally from 16.1% to 15.2% in the five years till March 2013 (Figure 1.1).

![Manufacturing Sector's share in Indian Economy](chart.png)

(Source: Confederation of Indian Industry 2014)

**Figure 1.1 Declining Trend in Manufacturing Sector**

Growth rate in manufacturing reduced from 9.7% in 2010-11 to 2.7% in 2011-12 and 1% in 2012-13. In Financial Year 2013, only 3.3% of the
country’s growth was generated by manufacturing as opposed to 83% contributed by services (Confederation of Indian Industry 2014). This declining trend in manufacturing sector in India is alarming, calling for interventions to improve the efficiency and effectiveness of the country’s manufacturing investments dramatically.

1.4 NEED FOR CAPACITY BUILDING IN MOTOR AND PUMP MANUFACTURING CLUSTER

A dynamic global economic scenario has thrown up various challenges to the manufacturing sector in India. Indian manufacturers lag behind their global peers in productivity. Employees in India’s manufacturing sector are four to five times less productive than their counterparts (Dhawan et al. 2012). For the past few years, the motor and pump manufacturing cluster has been passing through severe recession. The industry has been experiencing falling profits in spite of the rise in product prices. This is because of the rising production costs, high raw material cost and lack of sector specific skilled frontline employees and managers. The industry has to make further advancement in manufacturing innovative products to meet both volume and quality aspects in the international markets. The major setback of the firms in the pump manufacturing industry is attributed to non-availability of professional/technical experts in production, absence of innovative approach to improve the existing processes, no inter cooperation or sharing of information and experiences among the industrialists, non-availability of adequate technical knowledge to manufacture high value products, inefficient business operations, informal business methods and competition from neighbouring clusters.

Hence there is a need for inclusive development of the firms in the motor and pump manufacturing cluster to develop a conducive environment for human resources to be more productive. This mandates a systematic
process to build the capacity of firms and the employees to increase their productivity, collective learning and promote organizational performance to be proactive to the challenges in the environment.

Capacity may include physical, institutional, social or economic means as well as skilled personnel or collective attributes such as leadership and management to an organization. It is a combination of all the strengths and resources available with a community, society or organization that can reduce the level of risk. It may be understood as the inherent endowment possessed by individuals or organizations to achieve their fullest potential (Jurie 2000). Capacity Building is an ongoing process through which individuals, groups, organizations and societies enhance their abilities to identify and meet development challenges. Kaplan (1995), a leading NGO scholar argues that organizations should concentrate on developing robust capacity, rather than relying on the setting up of organizational structures, procedures and securing of material resources. Organizational capacity building is the development of core skills, management practices, strategies and systems to enhance an organization’s effectiveness, sustainability and ability to fulfill its mission. Human capacity is influenced by organizational capacity. Building organizational capacity will enable the employees to carry out their tasks to the best of their ability.

The motor and pump manufacturing cluster has been in existence for many decades but less attention was paid so far by the firms in this cluster to actively create, capture and manage the knowledge that has been accumulated in the business practices. Lack of proper documentation and codification of best practices, transfer of individual knowledge held by key personnel into organizational knowledge were also the problems faced by these firms. Knowledge and human capital are inseparable and human capital is the basic building block of an organization. Tacit and explicit knowledge
are lying abundant in these pump manufacturing firms. There exists a need to study and explore the possibilities of assessing, managing and building the organizational knowledge management practices, thereby building the capacity of the employees in these firms.

1.5 PURPOSE OF THE STUDY

The present research problem originated to understand the impact of knowledge management practices in enhancing human capacity so that the employees will have better work performance. To further leverage the benefits of knowledge management practices in pump manufacturing organizations, this study applied the concept of capacity building to assess the knowledge management capacity and developed strategies to enhance the knowledge management practices. This study helped to fill the void in knowledge management research through empirical validation of assessing the knowledge management capacity and building it.

1.6 OBJECTIVES OF THE STUDY

The need for the study highlighted the necessity to build the capacity of firms and the employees in the pump manufacturing cluster. Based on that, this research study was carried out to diagnose the prevalent KM practices and its impact on work performance of employees, then assess and build the capacity of KM practices in pump manufacturing cluster during the period from August 2013 to June 2014. The study presented here is mainly done to

- Understand the extent of KM practices among pump manufacturing firms
- Empirically understand the relationship between KM practices and work performance
To assess the capacity of KM practices among pump manufacturing organizations included in the study

To map the capacity of KM practices and to identify the capacity/consensus lag areas

To formulate strategies to build KM capacity of the pump manufacturing organizations.

1.7 CONCLUDING REMARKS

The current global manufacturing scenario requires Indian manufacturers to bolster their operations to upbeat the declining trend and prosper. The Indian manufacturing sector has predominant presence of clusters, consisting for MSMEs, agglomerated to a certain region or city. Upgrading of skills and product qualities are constant challenges faced by these clusters. There is an urgent need for the motor and pump manufacturing cluster to manage their knowledge and build their capacity to face the challenges in the environment. This has mandated a capacity building process to increase the productivity of workforce. Hence this research study attempted to develop a knowledge management capacity building methodology to increase the productive performance of the employees in the pump manufacturing firms.