

**Leading towards Sustainability through Knowledge Management Practices: An Empirical Study of Manufacturing Industry in Nagpur city**

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**Abstract**

*In the current economy, organizations increasingly view knowledge as a critical component of their competitive advantage. Huber (1984) contents that the post-industrial society will be characterized by more and increasing knowledge, complexity, and turbulence, which will impose distinctly different demands on organizations for decision making, innovation, and information acquisition and distribution. This emerging paradigm is addressed as 'knowledge economy', 'networked economy', 'information age', and 'knowledge-based society' among many other labels.*

*Increased market diversity implies that organizations will try to serve a larger number of market segments, and hence would need to process greater amount of information. Even if they choose to serve a particular market segment, to be competitive, they will need to know more about this market segment than other organizations who are also trying to serve the same market. From such a perspective, many have suggested that the determining factor in the performance of an organization would be the effectiveness with which they manage their knowledge relative to their competition. In this context, sustainability of the organisation largely depends upon the knowledge management practices they follow.*

*Drawing on behavioral and learning theories, this study will investigate various factors that impact how individuals manage their knowledge, and how such extended behaviors influence the outcomes that are commonly attributed to their better management of knowledge. This study focuses on these individual behaviors in the context of information technology supported knowledge work since today's knowledge work is substantially integrated with diverse information technologies. The study also aims at maximizing the value generated from knowledge assets where individuals need to manage their knowledge more extensively.*

*The research data is collected from employees & managers of various Manufacturing firms belonging to various sectors like food & dairy, metals, plastics, engineering, automobiles, pharmacy, textiles etc. of Nagpur region using Stratified Random Sampling method. Suitable statistical tools were used to test the hypothesis & draw the conclusions.*

*The universe of study is limited to Nagpur region. Though the region has a very cosmopolitan population mix, it may not be the exact representation of the globe.*

*Contribution of the study: Organizations gain new knowledge from the external environment through boundary sensors, and generate new knowledge through the various activates of the individuals within the organization. This research explores different practices that individuals engage in managing their knowledge and factors that impact these practices are identified. Organizations can effectively develop interventions to promote these practices within their employees. The result of the study i.e. understanding the extent to which information technologies impact the individuals' knowledge management practices can also help organizations evaluate the merits of employing various systems that support these practices. Further, looking at how the different information technologies support these practices will help organizations create, promote, and customize information technologies that will meet the specific knowledge needs of their employees & will help them sustain in competitive era.*

## **I. Introduction:**

Today, knowledge is assumed to be the key asset, the effective exploitation which determines success for the firm (Michailova and Nielsen 2006). Knowledge is of limited organizational value if it is not shared. The ability to collect, integrate and apply specialized knowledge of an organization's members is fundamental to a firm's ability to create and sustain competitive advantage. Knowledge production is the most important value creating activity, not only for large knowledge-based firms, but also for society in general (Drucker 1993; Stehr 1994). Emphasis on knowledge management has resulted from the economic, industrial and cultural developments adding competitive value to products and services by the application of human knowledge.

The globalization of business, the shift from production-based to a knowledge-based economy, the growth of information communications technology (ICT), the strive to become learning organizations and the emergence of the needs for knowledge workers have made knowledge management practice a must today across all types and levels of firms (Chong, 2005). As the concept has not penetrated to all organisations, there exist different views among practitioners and even researchers on how a knowledge management program can be designed and implemented in organizations. This paper posits that knowledge management consists of critical enablers such as employee

training, employee involvement, teamwork, employee empowerment, top management leadership and commitment, organizational constraints, information system infrastructure, and knowledge structure that are critical to the success of a knowledge-based organisation.

### **Strategic Sustainable Development**

To be strategic in moving towards sustainability requires a clear understanding of sustainability. Sustainable development as defined by the Brundtland Commission (1987), which is one of the most broadly stated and widely used definitions of sustainable development, defines sustainable development as “meeting the needs of the present without undermining the ability of future generations to meet their needs.” However, this only provides a very general guide on the direction to take and it has been difficult for individuals and organizations such as business, governments, and communities to agree on concrete ways to take action together to implement sustainable development .

A major element of Strategic Sustainable Development (SSD) is to ensure that actions are planned with goals that are long-term and realistic steps to achieve these goals are developed through strategic planning. CSR proves to be a foundation stone for any organisation to work towards sustainability.

## **II. Literature Review**

Knowledge management is a broad subject with many facets ranging from databases to patents, from the Intranet to the mentor, from coldly technical to warmly personal concepts. The idea of managing knowledge is recent, but the language used to describe it is still in its infancy (Shaw, 1999). The processes and terminology associated with knowledge management often sounds abstract. However, it is concrete, practical and profoundly important (Leonard-Barton, 1995).

Defining knowledge management is especially difficult, as different perspectives or schools of knowledge management can yield different dimensions and meaning (Salleh & Goh, 2002). For example, management information systems researchers and practitioners tend to define knowledge management as an object that can be recognized and controlled in computer-based information systems. Management researchers, on the other hand, address knowledge as processed based on individual and organizational competencies such as skills and know-how (Davenport & Prusak, 1998; Nonaka & Takeuchi, 1995; Sveiby, 1997; Winter, 1998). Thus, different

perspectives on the concepts of knowledge can lead to different definitions of knowledge management.

Knowledge management is management of organizational knowledge for creating business value and generating a competitive advantage. It consists of the processes required to effectively manage knowledge. It is a systematic, explicit and deliberate building, renewal and application of knowledge to maximize a firm's knowledge-related effectiveness and returns from its knowledge assets (Wiig, 1997). Knowledge management is essential for enterprises to determine where they are going and for organizational survival in the long run, given that knowledge creation is the core competency of any organisations (Leonard-Barton, 1995). It is a key requirement to future successful enterprises and is rapidly being recognized by firms to be of major strategic importance (Dyer, 2000).

In achieving this, various knowledge management models have been reviewed so that a unified framework of knowledge management can be developed. From the analyses of the models, it was found that several studies have proposed several key variables for successful implementation of knowledge management. Davenport et al. (1998) have identified eight knowledge management success factors such as (1) technology infrastructure; (2) organizational infrastructure; (3) balance of flexibility, evolution and ease-of-accessibility to knowledge; (4) shared knowledge; (5) knowledge-friendly culture; (6) motivated workers who develop, share and use knowledge; (7) means of knowledge transfer using various information technology infrastructure; and (8) senior management support and commitment. Ryan and Prybutok (2001) propose five success factors such as (1) an open organizational culture; (2) senior management leadership and commitment; (3) employee involvement; (4) teamwork and (5) information systems infrastructure. Perhaps the most comprehensive list of success factors has been presented by Moffett et al. (2003). Ten key components to successful knowledge management were identified: (1) a friendly organizational culture; (2) senior management leadership and commitment; (3) employee involvement; (4) employee training; (5) trustworthy teamwork; (6) employee empowerment; (7) information systems infrastructure; (8) performance measurement; (9) benchmarking and (10) knowledge structure.

Numerous studies have pointed out on the importance of employee training to knowledge management implementation success (Carneiro, 2001; Choi, 2000; Mondyet al., 2002; Garavan et al., 2000; Greco, 1999; Hung et al., 2005; Hwang, 2003; Moffett et al., 2003; Salleh & Goh, 2002; Sunoo, 1998). Salleh and Goh (2002) insist that if a

company wants to become a truly knowledge-based organization, it must start with quality training.

### III. Objectives

1. To evaluate the knowledge management practices of selected manufacturing & service units of Nagpur City.
2. To analyze the impact of technology/IT as a facilitator of knowledge sharing practices within an organization

### IV. Problem Statement

Today's need is appropriate percolation of Knowledge management practices in any organisation to every level of employees and knowledge sharing practices of the organisation which leads to building a sustainable culture. But appropriate knowledge sharing practices are not observed in many organisations, so it is the time to create awareness among the organisations to imbibe KM practices which will ultimately develop the sustainability of the industries.

### III. Research Hypothesis

H1: Organizational structure, processes, and management style have a positive impact on application of knowledge sharing practices within an organization –

Sub-Hypothesis:

Ho<sub>1.1</sub>: According to the decision makers the organizational knowledge sharing practices largely depends on organization structure.

Ho<sub>1.2</sub>: Organizational structure leads towards the better knowledge sharing practices among the employees.

H.2. Use of Information Technology has a positive impact on organizational Knowledge sharing practices.

### V. Sample Design

In the present study, the primary data is collected from 29 manufacturing & service units of the Nagpur city. Where in 27 samples of Manager/Head/decision makers were taken & 62 employees were observed. Convenient sampling was used to collect the data. As convenient sampling is used when samples are to be selected based on

availability. Researcher got the list of manufacturing & service units from MIDC industrial association & DCMSME report.

## **VII. Result Analysis & discussion:**

Hypothesis 1 is based on its two sub hypothesis as explained below:

For hypothesis 1.1

According to the questionnaire filled by managers & decision makers the variables under consideration are organizational knowledge sharing practices (x) & organizational structure (y) The raw scores based on eight questions for (x) are compared with the raw scores based on nine questions for (y), as to find dependency in terms the nature of relationship between the two variables.

For hypothesis 1.2

According to the questionnaire the variables under consideration are the employees' organizational knowledge sharing practices (x) & organization structure based on decision maker (y). The raw scores based on seven questions for (x) are compared with the raw scores based on nine questions for (y). Since the sample sizes are different, a systematic sampling using every fifth sample from employee is compared with corresponding response raw score of the decision maker. A bivariate sample of size 27 considered to find the nature of relationship between the two variables.

(ii) According to the questionnaire of the decision makers and the questionnaire of the employee the variables under consideration are use of information technology based on decision maker (x) and the knowledge sharing practices based on employee (y). The raw scores based on six questions for (x) are compared with the raw scores based on seven questions for (y). Since the sample sizes are different, a systematic sampling using every second sample from employee is compared with corresponding response raw score of the decision maker. A bivariate sample of size 27 considered to find the nature of relationship between the two variables.

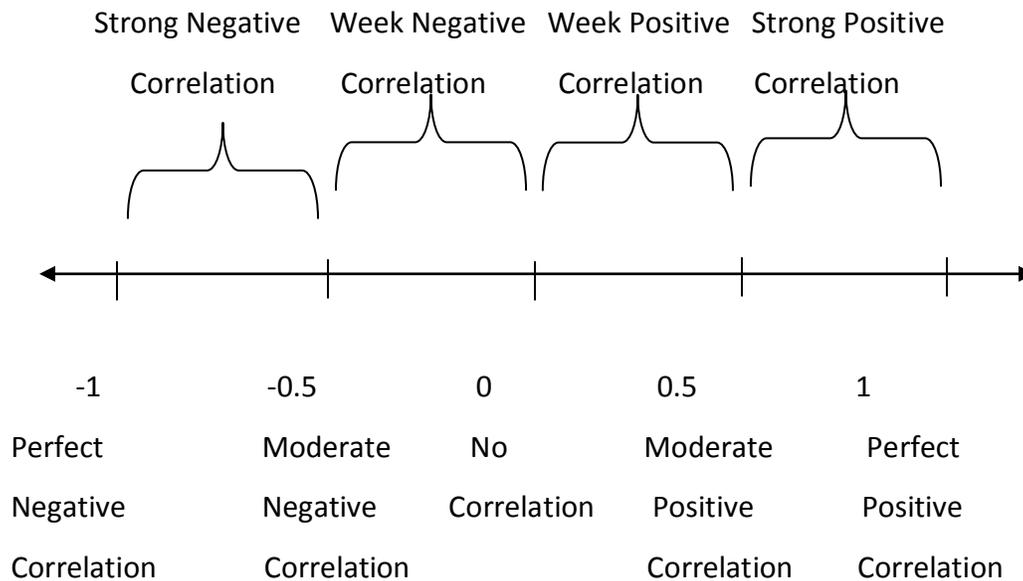
### **VII.1 Statistical Tool**

The statistical analysis based on Karl Pearson correlation coefficient is used to determine the impact or dependency or the nature of relationship between the two variables under consideration.

$$r = \frac{cov(x,y)}{\sigma_x \sigma_y}$$

$$r = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{(x - \bar{x})^2} \sqrt{(y - \bar{y})^2}}$$

Correlation coefficient scale (r) :



### VIII. Hypothesis Testing

H1: Organizational structure, processes, and management style have a positive impact on application of knowledge sharing practices within an organization –

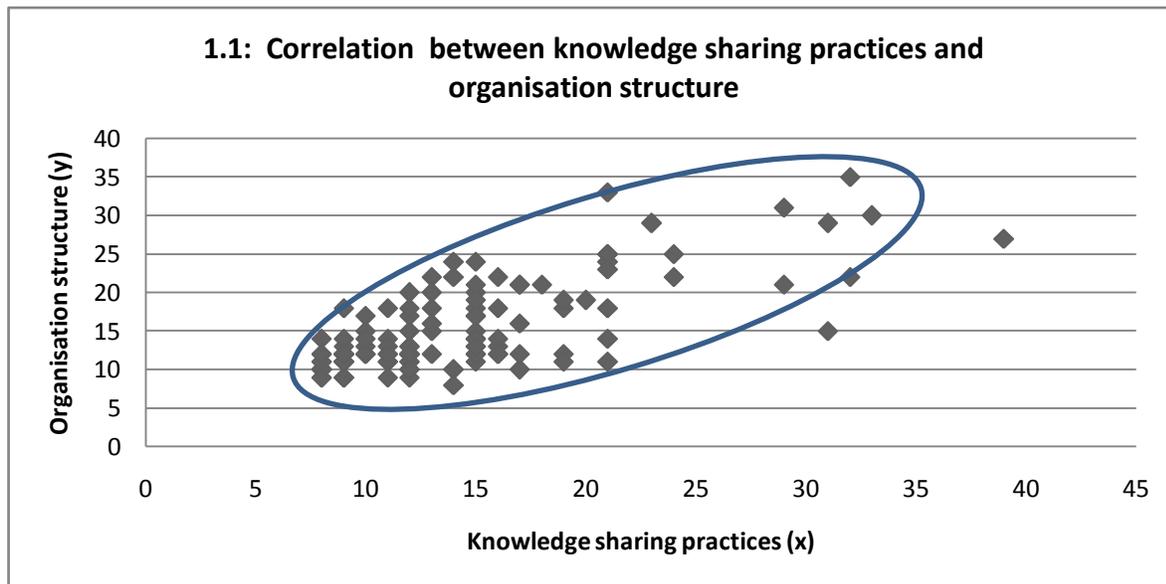
Sub-Hypothesis:

Ho <sub>1.1</sub>: According to the decision makers the organizational knowledge sharing practices largely depends on organization structure.

Using excels sheet application we have:

$$r = 0.7206$$

According to the Correlation coefficient scale there exist a enough strong correlation between the (x) and (y).



Note ; The cloud containing almost all points in the graph is an increasing cloud so a strong positive correlation exists.

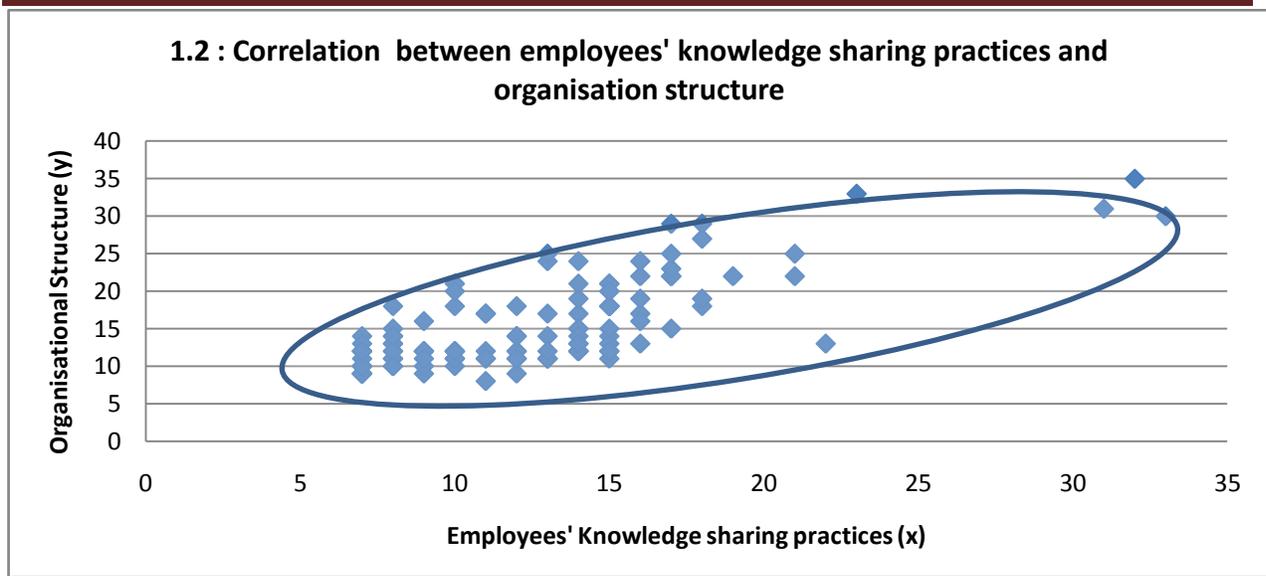
**Interpretation:** There is a strong positive relationship between organizational knowledge sharing practices & organizational. Hence the Hypothesis  $H_{0.1.1}$  can be strongly accepted i.e. the organizational knowledge sharing practices largely depends on organization structure. ....(I)

$H_{0.1.2}$ : Organizational structure leads towards the better knowledge sharing practices among the employees.

Using excels sheet application we have:

$$r = 0.7517$$

According to the Correlation coefficient scale there exist a enough strong positive correlation between the (x) and (y).



Note; The cloud containing almost points in the graph is an increasing cloud so a strong positive correlation exists.

**Interpretation:** There is a strong positive relationship between Organizational structure and knowledge sharing practices among the employees. Hence the Hypothesis  $H_{0.1.2}$  can be strongly accepted and conclude that the organizational structure leads towards the better knowledge sharing practices among the employees. ....(II)

H.2. Use of Information Technology has a significant impact on organizational Knowledge Sharing practices.

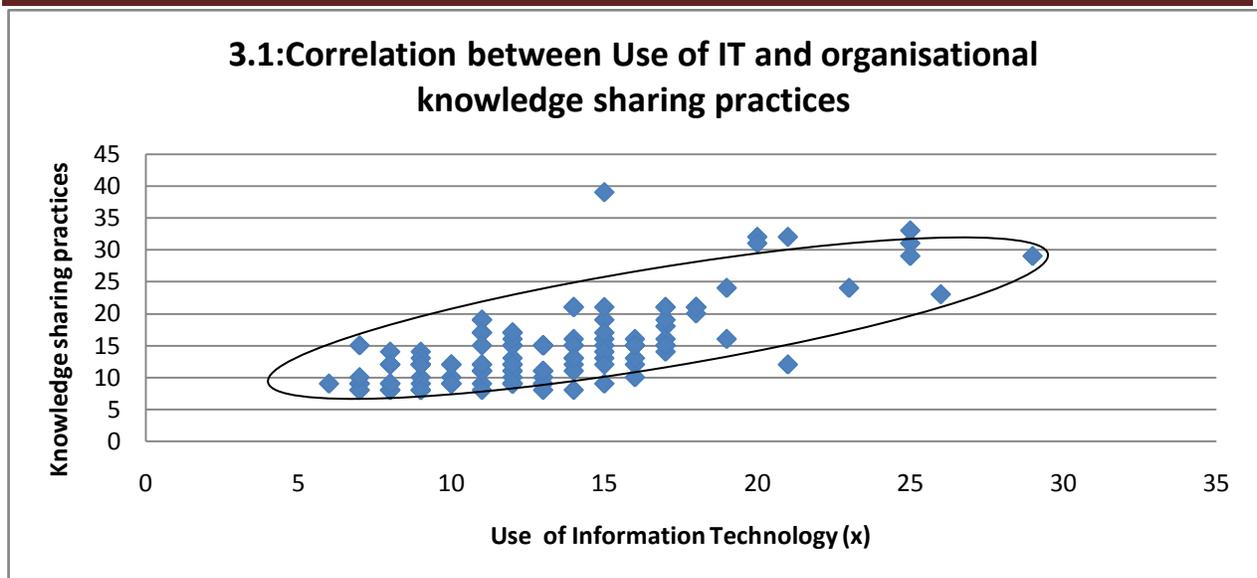
Based on managers & decision makers perception:

$H_{0.2}$  : As per the decision maker , there is a positive relationship between the use of Information Technology and the organizational knowledge sharing practices.

Using excel sheet application we have:

$$r = 0.7329$$

According to the Correlation coefficient scale there exist a strong positive correlation between the (x) and (y).



Note : The cloud containing almost all points in the graph is an increasing cloud so a strong positive correlation exists.

**Interpretation:** As per the decision maker perception there is a strong positive relationship between the use of Information Technology and the organizational knowledge sharing practices. Hence the Hypothesis  $H_0$  <sub>3.1</sub> can be strong accepted. ... (I)

### IX. limitations

The present study on knowledge management provides valuable insight into existing theories of knowledge sharing. with the limitation that this study focused on the limited manufacturing & service units of Nagpur, which represent to some extent a homogeneous population, the study did not take the company type and size into consideration. This limit the generalizability of the results of this study to the listed manufacturing companies in globe. However it provides a valuable insights on knowledge management practices followed by the manufacturing firms in Nagpur.

### X. Conclusion:

The study finds that the organizational structure, processes, and management style have a positive impact on application of knowledge sharing practices within an organization. The data analysis highlights the importance of nurturing knowledge sharing in business environment to ensure ongoing learning processes and a high level of adaptability, which in turn increases

employee job satisfaction. If improvements in organizational performance are to take place, the interaction between knowledge sharing practices & adoptability of the employees should be enhanced by using information technology as a resource.

Although this study is challenged by various limitations, it enriches knowledge-sharing literature and drops light on the significance of knowledge sharing practices as a motivational factor for employees' learning commitments, employees learning adaptability, employees' commitment, which in turn relates to overall job satisfaction. The data analysis also indicates that managers from manufacturing units perceived that their companies make use of organizational knowledge sharing practices. This result is in line with the results of (Hsu, 2006). Managers are advised to think blueprinting an effective training strategy that leverages employees' skills and knowledge on a continual basis. With the help of systematic knowledge management practices & use of I.T., industries can reduce employees level of stress, anxiety, turn over, and other similar undesirable factors that result from skill mismatch and job dissatisfaction.

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