

Importance of Knowledge Acquisition in Indian Manufacturing Industries practicing Quality Improvement Methods

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Abstract

Implementations of the Quality Improvement Methods (QIM) in the organizations have been considered as the most important criteria as it is believed that successful implementation leads to performance improvement. To have the successful implementation of any QIM such as Six Sigma, Kaizen, Lean Six Sigma etc., there is a need for understanding of the tools and techniques adopted. To accomplish this criterion there is a need of building awareness among the employees related to the usage and usefulness of the tools and techniques to be used to improve the work quality. This paper discusses the current scenario and the importance of acquiring knowledge in Indian manufacturing Organizations. The Knowledge acquisition is the process to excerpt, structure and organizes the knowledge from various sources of human experts and also consider as the process of adding new knowledge and to change which was anonymously acquired to the knowledge base. It is mainly used in the system development. This study mainly concentrates on the three main

factors of knowledge acquisition process related to whether the employees have exposure to the recent technologies, whether the organization has a successful R&D policy and whether the new ideas and approaches are being experimented in the organizations.

1.0 Introduction

In today's knowledge-based economies operating in a competitive global scenario, knowledge is considered to be an essential asset for the company's survival. A manufacturing company needs to develop methods to acquire knowledge, especially tacit knowledge. Knowledge acquisition can increase the success of research and development (R&D) projects. This study focuses on the exploration of the current status of the knowledge acquisition process in the South Indian Manufacturing companies. The knowledge that has accumulated in the organization and properly classified can act as an intangible fixed asset. The acquisition of external knowledge in a company is

associated with its accumulation in the mind of employees, for example, the training of employees or keeping it in the form of digital media that is more stable and possible to replicate. Section 2 deals with the Literature review on knowledge acquisition process in organizational learning. Section 3 deals with the research methodology adopted, Section 4 with the results and discussion and finally Section 5 deals with the Conclusion which highlights the importance of knowledge acquisition process in the manufacturing companies, particularly focusing on South Indian Automotive companies.

2.0 Knowledge acquisition process

Knowledge acquisition can be treated as a procedure of utilizing and obtaining knowledge from existing knowledge. It requires purposeful exertion and a high level of involvement in perceiving and capturing new knowledge. From the knowledge based view, information has developed as the most deliberately critical asset of a firm (Grant, 1996), and the acquisition of new knowledge from an outsourcing partner is one of the most widely cited motives for collaboration (Levy, 2005; Li et al., 2008a). Technological support includes technological direction and employee training which are needed to obtain reliable, customized, and high-quality products (Wei and Liu, 2006). Mutual problem-solving arrangements

greatly enhance the learning that occurs in exchange relationships because the parties work through difficulties and receive direct feedback about activities and operations. Such arrangements facilitate the transfer of situation-specific knowledge, and as a result a firm will be better able to learn about and understand a capability when it has joint problem-solving arrangements with its exchange partners (McEvily and Marcus, 2005). The ability to create and apply new knowledge is one of the main primary sources of competitive advantage (Mu et al., 2008). Companies need to retrieve information from many internal and external sources in order to promote innovations and sustain their competitive edge in the market (Santamaria et al., 2009). Highly skilled professional employees are the most important internal source of knowledge for a company (Gabeanova, 2011). If the companies do not have any reliable source internally for knowledge, they search for knowledge sources externally from suppliers, consultants etc. The aim of this paper is to examine the importance of knowledge acquisition mainly on three factors. This paper mainly focuses on the Huber's model of organizational learning. This model consists of mainly four processes. They are knowledge acquisition, knowledge interpretation, knowledge distribution and organizational memory. The author discussed only the first process on

organizational learning in this paper. The present study adopts the questions from the work of Perez Lopez et al. (2004) and the questions were prioritized and listed from reliable work of Jimenez et al., (2011) and the same is listed in Table 1.

Table 1: Knowledge acquisition constructs

S.No.	Knowledge Acquisition Constructs
1	The employees attend fairs and exhibitions regularly.
2	There is a consolidated and resourceful R&D policy.
3	New ideas on work performance are experimented continuously.

3.0 Methodology

The purpose of the study is to determine the current level of knowledge acquisition particularly in the automotive industries of TamilNadu, India. TamilNadu has widely diversified categories of manufacturing sectors such as automobiles and auto components, engineering, pharmaceuticals, garments, textile products, leather products, chemicals, plastics, etc. The author has selected the automotive industries for the study, as this domain is the leading manufacturing sector in Tamil Nadu. The 4-wheeler vehicles in Chennai are the base of 30% of India's automobile industry and 35% of its automobile component industry. Hence this investigation focuses the automotive industries of

TamilNadu, India. A survey based quantitative research method was adopted to collect data and answer the research questions. This study emphasized on automotive industries that practice the Lean Six Sigma methodology. The Managers and team leaders are the targeted population for this study.

The questionnaire was created and forwarded to nearly 380 respondents who were working in automotive industries. The response rate was 63 % (241 responses), (Sekaran 2003) which is good response. The responses were analyzed in a descriptive and inferential manner using SPSS 21.0. Respondents were asked to rate the constructs on a five-point scale, ranging from 1'—Strongly Disagree to 5'—Strongly Agree. The independent or fixed factors are the types of companies, enterprise category and the company turnover. The dependent factor is the knowledge acquisition process of organizational learning. The questionnaire had the four process of organizational learning, but this paper only discusses about the knowledge acquisition process. Analysis of Variance is done for the specified dependent and independent factors. Based on this, the hypothesis is framed as listed in Table 2.

Table 2: Hypothesis

S.No.	Independent Factor	H0	H1
1	Type of companies	There is no significant difference across types of companies and Knowledge acquisition.	There is a significant difference across types of companies and Knowledge acquisition.
2	Enterprise category	There is no significant difference across enterprise category and Knowledge acquisition.	There is a significant difference across enterprise category and Knowledge acquisition.
3	Company turnover	There is no significant differences across company turnover and Knowledge acquisition	There is a significant differences across company turnover and Knowledge acquisition

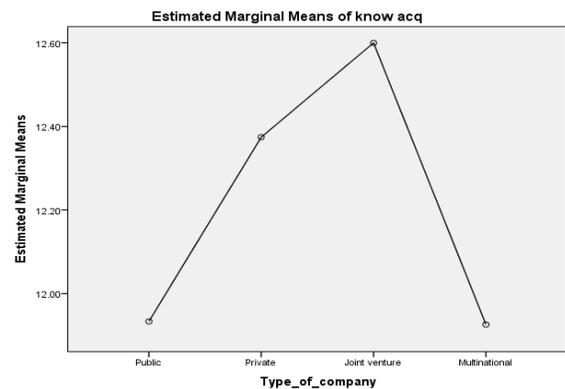
Table 3: Descriptive statistics output

S.No.	Category of Respondents	Percent	Mean score	
1	Type of companies	Public	6.2	11.93
		Private	74.3	12.37
		Joint Venture	8.3	12.60
		Multinational	11.2	11.92
2	Enterprise category	Medium	30.7	12.13
		Large	69.3	12.39
3	Company turnover	less than 1 million	1.2	11.00
		1-10 million	6.2	12.40
		11-20 million	19.9	12.20
		21-30 million	8.3	12.15
		31-40 million	1.2	13.33
		41-50 million	9.5	11.82
		more than 50 million	53.5	12.46

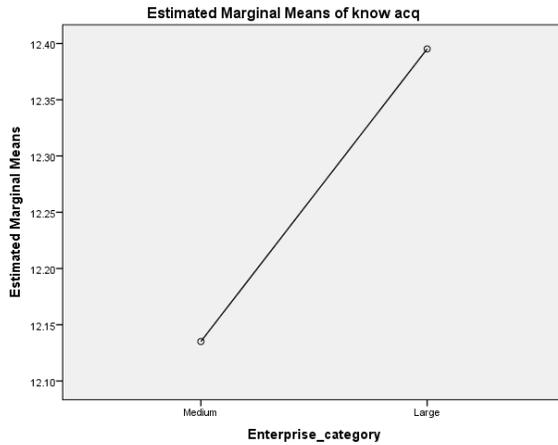
4.0 Results and Discussion

This section discusses the results obtained with descriptive and inferential statistics. The independent factors are the type of companies, enterprise category and company turnover. The dependent factor is the knowledge acquisition process. Table 3 highlights the results obtained by descriptive analysis and the Fig.1 (a), (b) and (c) shows the profile plots of the mean score of the independent factors.

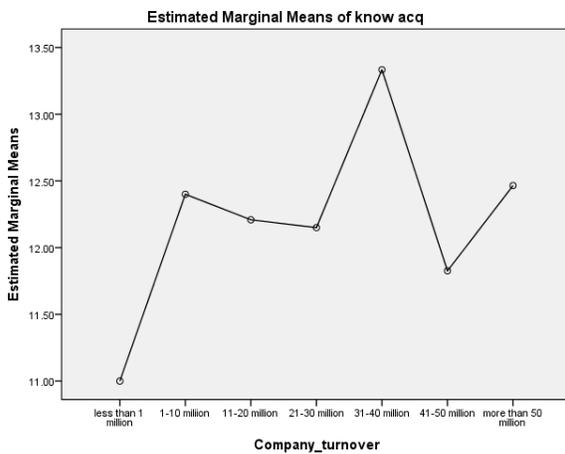
Fig.1: Profile plots of Mean score of Independent Factors



(a). Type of companies



(b). Enterprise Category



(c). Company turnover

The table shows the mean score value of the independent factors and the percentage of respondents participated in the survey. The factor ‘Types of companies’ has four main categories namely public, private, joint venture and multinational companies. The private companies

contribute more in the survey with 74.3% of respondents belonging to that category followed by Multinational companies with about 11.2%. The mean score value with respect to the dependent factor ‘Knowledge acquisition’ have also been observed and shows that knowledge acquisition is higher in Joint venture companies followed by Private companies. From the results it is observed that, even though the percentage of the joint venture companies participated in the survey is very less compared to private and multinational companies, it has shown a higher mean score value.

The independent factor ‘Enterprise category’ has two categories namely large and medium size enterprises. The result shows that about 69.3% of respondents participated in the survey were from large enterprises and the mean score of the large enterprises is higher than the medium sized enterprises. The independent factor ‘company turnover’ has six categories. The category ‘more than 50 million’ show higher respondents followed by the category ‘11-20 million’. The mean score of ‘31-40 million’ is the highest followed by the category ‘more than 50 million’. From the above results it can be concluded that the results were based on the opinions of the employees working in the large sized joint venture companies with turnover of about ‘31-40 million’ with respect to the dependent factor ‘Knowledge acquisition’.

Table 2 gives the hypothesis formulated and ANOVA test is carried to find the significant impact of the independent factor on the dependent factor ‘knowledge acquisition’. The Table 4 shows the output from the ANOVA test carried out. The independent factors are Type of companies, Enterprise category and Company turnover and the dependent factor is knowledge acquisition.

Table 4: ANOVA Result

Independent factor	Dependent factor	R sq.	F	Sig.	Inference
Type of company	Knowledge acquisition	0.010	0.979	0.403	Not Significant
Enterprise category		0.015	4.359	0.038**	Significant
Company turnover		0.044	2.193	0.044**	Significant

**Significant at 5% level

The result shows that the independent variable Enterprise category and Company turnover has significant impact on knowledge acquisition. Hence Null hypothesis is rejected. The independent factor, Type of company does not show significant impact on knowledge acquisition. To conclude, it can be said that level of knowledge acquisition process depends on the company turnover and enterprise category. From the mean score value it can be observed that large enterprises with turnover of about 31-40 million contributes more in this survey and they clearly

show that there is a significant effect on knowledge acquisition. The final result clearly shows that whatever the type of company it may be, the level of knowledge acquisition depends only on the employees involvement. Employee involvement is higher in companies where there is top management encouragement also. Without top management encouragement in the projects of quality improvements no success results can be obtained from the employees. Top management involvement can be seen in large enterprises with higher turnover. Hence, it can be concluded that the analysis shows significant results and agree that the type of companies does not show impact in the level of knowledge acquisition.

5.0 Conclusion

Companies can develop their knowledge base both internally and externally. Highly skilled professionals are the main internal source of knowledge and the company can obtain knowledge externally by interacting with their customers and suppliers. In this study the questions related to knowledge acquisition focus on both the internal and external sources. The study shows that both internal and external sources help to develop the knowledge base irrespective of type of companies. As large enterprises are very much eager in developing the knowledge base they are prepared to invest money in improving the level of the

knowledge acquisition process by promoting with the help of recent high end technologies. Hence it can be concluded that the importance of knowledge acquisition process is higher in large enterprises compared to medium enterprises. The limitation of this study is that, it does not concentrate on the other types of organizational learning process and this study can be extended further on the remaining organizational learning process.

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