

# AN EMPIRICAL INVESTIGATION OF THE CULTURAL, INDIVIDUAL AND MEASUREMENT ISSUES IN THE CONTEXT OF THE IMPLEMENTATION OF KNOWLEDGE MANAGEMENT IN INDIAN AUTOMOTIVE SMEs

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**Abstract** Knowledge has become the cornerstone for measuring the success of an organisation in the modern knowledge economy. The same is particularly true in the case of Small and Medium-sized Enterprises (SMEs). The Indian SMEs sector is one of the fastest-growing sectors, contributing to the growth of the Indian economy. Despite the growing significance of knowledge and knowledge management (KM), several barriers impede the KM implementation in SMEs, so as to realise the success, profitability and competitiveness. This research study reviews, investigates and discusses on a number of relevant issues that affect KM implementation, categorising them into three main spheres, such as cultural, individual and measurement issues. Subsequently, they have been compared across the three tiers of automotive components SMEs in India and, accordingly, results are presented. It has been found that there is no significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the cultural and individual issues are concerned. All of them face similar challenges in the case of these two types of issues. However, there is a significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the measurement issues are concerned. Tier 3 SMEs have a significant number of measurement issues, as compared to Tier 2. The other pairs, viz. Tier 1 with Tier 2 and Tier 1 with Tier 3, do not show a significant difference for measurement issues.

**Keywords:** Knowledge, Knowledge Management (KM), Small and Medium-Sized Enterprises (SMEs), KM Issues

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## INTRODUCTION

Small and Medium Enterprises (SMEs) play a “catalytic” role in the growth and advancements of most economies of the world (Pillania, 2008b). In India, the SMEs have a strong influence on the national economy and employ around 80 million people, which is approximately 40% of India’s workforce. SMEs have a critical role to play in the manufacturing sector and are considered to be the backbone and the engine of financial growth in India. Today, due to its substantial contribution in terms of exports and employment generation, SMEs occupy a position of tactical importance in the Indian economy (Kour, 2016).

Due to rapid changes in business environments and the fickleness of global competitiveness, SMEs are facing

extraordinary challenges triggered by the knowledge economy today. Knowledge management (KM), as a key concept, has evolved into a determinative element for sustaining competitive edges, and today various business organisations are motivated to explore the sphere of KM, in order to expand and endure their competitiveness. The potential of KM to make SMEs more emulous and innovatory and its capability to steer the SMEs to a tenable performance has made it still more valued (Wang & Yang, 2016). According to Chauhan and Punia (2017), infact from among the various modest resources, KM appears to idiosyncratically leading to manage the knowledge flow within and outside an organisation. Moreover, KM can enhance both individual as well as organisational performance. Thus, many of the dilemmas of competitiveness being faced by the SMEs could be tackled with the implementation of KM.

Intrinsically, KM motivates the organisations to manage organisational as well as individual knowledge to deal with the challenges of the new business environment more successfully. Through KM, organisations acquire or create potentially useful knowledge and make it available to those, who need it to achieve efficacious usage and thereby positively influence the organisational performance (Roy, 2015). According to Handzic (2004), KM has achieved prominence in today's global knowledge economy and is seen as a crucial factor in realising and sustaining organisational success for improved efficiency and innovation. It has become imperative for implementation in both large firms as well as SMEs alike. In fact, it has become essential for SMEs to be aware of their knowledge assets and methods as well as have the means to manage and make the best use of these assets to acquire highest returns and competitive advantage (Anand & Singh, 2011). The authors warned that in effect, the SMEs are expected to lose more than the bigger enterprises for not implementing a proper KM approach in their firms.

Especially in a developing country such as India, although SMEs play an important role in the economic growth of the country, they are still hesitant to embrace KM. As such, understanding the reasons behind their reluctance in KM implementation has become very important. Though the extant literature indicates that many have explored the study of the critical factors for successful implementation of KM and opined on the causes responsible for the reluctance of the SMEs to implement them, there is hardly any literature available that shows sufficient academical and pragmatic investigation of issues, leading to the accomplishment of KM.

### **DEFINITION: KNOWLEDGE AND KNOWLEDGE MANAGEMENT**

Knowledge is the organisational asset that enables a sustainable competitive advantage in hypercompetitive environments (Durst & Wilhelm, 2012). Knowledge plays the role of a key differentiator in today's competitive world, which embarks on a new era, as compared to a period, where labour and capital ruled (Bhanumathi, 2015). According to Pillania (2008a), "knowledge is defined as a whole set of intuition, reasoning, insights, experiences related to technology, products, processes, customers, markets, competition and so on that enable effective action".

Based on the review of the extant literature, as well as the views presented by academicians and practitioners, it has been concluded that KM is the management of the business and organisational knowledge for creating value and competitive advantages for the firm. Wen Chong et al. (2000) identified KM as "a process of leveraging and articulating skills and expertise of employees, supported by information

technology". Yahya and Goh (2002) defined "knowledge management as a process of leveraging knowledge as a means of achieving innovation in process and products/services, effective decision-making, and organisational adaptation to the market for creating business value and generating a competitive advantage to organisations".

Knowledge is classified as explicit and tacit. Explicit knowledge is the knowledge that can be easily harnessed artificially through manuals, standard operations and then shared with others. However, tacit knowledge is the skills and "know-how", which resides in the mind of individuals that cannot be easily shared and is very difficult to articulate (Ahmed et al., 1999).

### **LITERATURE REVIEW**

Mcdermott and O'Dell (2001) asserted that culture plays a vital role in the success of a KM effort, whereas Sedighi and Zand (2012) concluded that the organisational culture is an imperious element for effective implementation of KM. They added that culture is a critical factor for developing KM within organisations. Nagesh (2016) also opined that the organisations should link the KM initiative with the innovation culture, so as to improve their business performance.

Zheng et al. (2010) opined that the organisational culture not only influences the KM effectiveness directly, but also exerts its influence through shaping the behaviour and values of organisational employees. Liebowitz (1999) asserted that more than 90% of KM success depends on culture. Cultural characteristics are the central component to effective KM. Organisational culture has been identified as a fundamental determinant of the success or failure of KM (Ragab & Arisha, 2013). In the extant research, organisational culture has been cited as one of the major reasons behind the failure of KM initiatives.

Pillania (2006b) conducted a research to comprehend the current state of organisational culture for KM in both private and public sectors of few business sectors including software, petroleum marketing, pharmaceuticals, etc. The author revealed that there exists a lack of organisational culture with regard to knowledge activities, such as creation, sharing and dissemination of knowledge.

Rivière and Calabrese (2016) considered "human aspect" as the most difficult facet of KM. Since the knowledge is rooted in the minds of individuals, managing knowledge and people are correlated. KM, although supported by technology, is also greatly influenced by human and organisational issues. Individual issues are basically silent constraints and often prove as bottlenecks to efficient KM implementation.

According to Chen et al. (2009), "knowledge measurement is one of the most difficult of KM activities", whereas

Ragab and Arisha (2013) concluded that due to the fluid and intangible nature of knowledge, it is an enormously complex and daunting task to measure the impact of knowledge. Further, Liebowitz and Suen (2000) asserted that to evaluate the impact of KM and to convince top management of the value of KM, a measurement tool is necessary and can play a crucial role.

Edvardsson and Durst (2013) pointed out that SMEs need to use the existing resources with care, as they face resource constraints. According to them, the implications of any erroneous decisions will be more severe on the existence of SMEs than they would have in large businesses. SMEs experience exceptional KM challenges that are distinctive from those of the big companies.

Baporikar (2015) claimed that though much has been explored and documented on the subject of KM, as far as big enterprises and multinational organisations are concerned, very little focus and research has been done on KM in the context of SMEs. According to the Pillania (2006a), there is a considerable research gap on the subject in SMEs, in general and in Indian SMEs, in particular. Baporikar (2015) further asserted that KM-enabled SMEs are indispensable for competitive and sustainable growth of developing the economy. Hence, an expedient approach for KM in SMEs is a must in the current situation. Because of numerous other reasons and due to limited resources, leveraging knowledge becomes crucial for SMEs, as compared to bigger firms.

Ansari et al. (2009) suggested that in order to implement KM processes successfully, SMEs should take into consideration and thoroughly investigate all the influential factors, which would facilitate the KM implementation process and ensure the success of the initiative. Only those organisations have profited from KM, which have recognised the importance of the KM in business growth and development. However, according to Boparikar (2015), the research has shown that the SMEs in general and SMEs in developing countries, in particular, have not appreciated this significance and hence are quiet vulnerable.

The review and analysis of literature highlight that in spite of numerous scientific articles, papers and books published on KM, neither the qualitative nor the quantitative approaches have progressed much and suggest that, in India, KM implementation is still at an elementary level. Anand and Singh (2011) reviewed the literature to ascertain the KM practices in SMEs in India. Through this review, the author could explore the issues related to performance measurement and benchmarking issues of KM in Indian SMEs. According to them, the use of KM in Indian SMEs is still in an embryonic stage.

Implementing KM is an idiosyncratic factor for the survival of SMEs (Durst & Edvardsson, 2012). SMEs usually also have the problem of uncertainty and face serious threats of

possible failures, both in the adoption and implementation of KM (Wong & Aspinwall, 2005). Although KM has been adopted by a good number of large scale industries, only a negligible number of SMEs have adopted KM. Karthikeyan and Muralidharan (2010) carried out a study to identify various factors that contribute to KM practices in the automobile industry segment in India. The major findings derived from the study are significantly useful and relevant in the context of Indian SMEs. Therefore, in this context, it has become very important to carry out more pertinent studies that would look into specific issues related to KM implementation.

## KNOWLEDGE MANAGEMENT ISSUES

### Cultural Issues

In KM initiatives, organisational culture is usually comprehended as a critical retardant (Mcdermott & O'Dell, 2001). In any organisation, it is the favourable corporate culture and not just the technology that ensures the success of KM initiatives (Essex, 2000). According to Malhotra (2004), to create the best firms in the future, much efforts are required on the organisational culture front.

Generally, people do not hesitate to share their knowledge. However, several cultural issues often become a barrier, such as the absence of trust among peers and dearth of gratitude for KM. Alavi and Leidner (2001) asserted that cultural issues associated with user motivation to share and use knowledge are the most significant. KM is not just about setting up the technological infrastructure, but it also deals with the management of people and sociocultural issues (Wong & Aspinwall, 2004). Moreover, in an organisation, resolving cultural issues has more to do with cautious design and implementation of KM initiatives, rather than with changing the culture of an organisation (Mcdermott & O'Dell, 2001). Organisations that fail to resolve cultural issues will not remain knowledge-focused and possibly will be short-lived (Moffett et al., 2002). Hence, cultural issues occupy a primary concern in the implementation of KM.

### Individual Issues

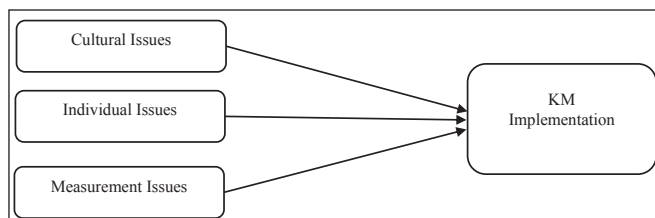
The individual issues which are related to either individuals or groups within or between business functions are originated from the behaviour of individuals or their perceptions and actions (Riege, 2005). According to Dell and Gray (1998), a common knowledge-sharing barrier is the lack of time. They further added that it is the time constraint only, due to which managers often struggle to implement KM. Time constraints are the major reason, due to which people possibly hoard their knowledge.

Lack of trust is a significant barrier to knowledge sharing and impede the effectiveness of knowledge sharing in firms (Vajjhala & Hassan, 2013; Wee & Chua, 2013). Most people avoid sharing their knowledge, because of lack of trust. The trust could lead to the feeling that people do not misuse their knowledge or knowledge is accurate and credible due to the information source (Riege, 2005). People believe that knowledge is their special right and privilege, which should be preserved at all costs. However, the dominant view is that employees do not share their knowledge, if they do not receive something in return.

### Measurement Issues

In the context of KM, the measurement refers to the process of benchmarking the organisation's knowledge and evaluating the KM progress as well as the impact on organisational performance. Ahmed et al. (1999) defined knowledge measurement as the process of evaluating, comparing, controlling and improving KM of organisations.

Many organisations are found to have missed the measurement aspect, as far as KM implementation is concerned. Organisations find it challenging to realise the benefits and value KM without knowledge measurement. Companies are not tenacious enough, and being short-term focused, they look for direct, swift and concrete results (Western philosophy). KM is a substantiating process that aids organisations to originate and deliver on their objects quicker and cheaper. Therefore, the organisational standards are required to be used, rather than specific KM measures.



**Fig. 1: Conceptual Model of KM Issues**

Measuring the success of KM is essential for purveying a base on which enterprises can assess knowledge management, encouraging the organisation to emphasise on the significant aspects of the business enterprise and elucidating the investments in the pursuits of KM. The measurement of KM success is also invaluable for building and accomplishing efficacious KM initiatives in business (Jennex & Olfman, 2005).

### METHODOLOGY

After analysing the extant literature, a research model was constructed, as shown in Figure 1, and the following hypotheses were framed in null as well as alternate forms.

Null hypotheses were used for testing purpose and alternate ones retained, in case the null hypotheses were rejected.

The following Null Hypotheses were conceptualised as:

*H<sub>o1</sub>: There is no significant difference in the cultural issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

*H<sub>o2</sub>: There is no significant difference in the individual issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

*H<sub>o3</sub>: There is no significant difference in the measurement issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

The following alternate hypotheses were conceptualised as:

*H<sub>A1</sub>: There is a significant difference in the cultural issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

*H<sub>A2</sub>: There is a significant difference in the individual issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

*H<sub>A3</sub>: There is a significant difference in the measurement issues faced by Tier 1, Tier 2 and Tier 3 SMEs in the implementation of KM.*

### Research Instrument Design

This research study is descriptive in nature and has empirically explored various issues, which impede the KM implementation in the auto components SMEs in India. A questionnaire survey method was employed in this research for gathering empirical data, with emphasis on various issues, such as cultural issues, individual issues and measurement issues. In all, 336 responses were collected from automotive SMEs, majorly from the western part of India, from across three tiers, namely Tier 1, Tier 2 and Tier 3.

The respondents in the SMEs were from the top-level positions such as the Proprietor, Chief Executive Officer (CEO), Chief Operation Officer (COO), General Manager (GM), Managing Director (MD) etc. These respondents were considered to be the most pertinent ones, because they are the overseers of operations of their companies and are part of the top management, who may initiate the implementation of KM. Finally, the research instrument was digitised in the form of an online survey along with a letter of introduction, explaining the purpose of the survey and were sent to 600 SMEs. Additionally, one to one responses were also taken from local SMEs in and around Mumbai, Thane and Palghar Districts. A half-month after sending out the questionnaires, reminder email and phone calls were made and it also contributed to an improved response rate.

The questionnaire was split into two sections. The first section explored demographic information about the SMEs.

This information was divided into optional and compulsory information. The details, such as name, contact number and email ID of respondents were optional, whereas the designation of the respondent, name of the organisation, type of industry/sector, etc., were compulsory.

The respondents were requested to rate the level of agreement/disagreement on each item by using a 5-point Likert scale (Strongly disagree = 1; Disagree = 2; Neither agree nor disagree = 3; Agree = 4; Strongly agree = 5). A pilot study carried out showed that the reliability values represented by Cronbach Alpha were well above the acceptable limits, as given in Table 1.

**Table 1: Results of Reliability Analysis**

Type of Issue	No. of Items	Cronbach Alpha ( $\alpha$ )
Cultural Issues	09	0.820
Individual Issues	14	0.787
Measurement Issues	05	0.707

### Data Collection

After analysing the reliability and validity of the research instrument through the pilot study, an extensive survey was conducted. As mentioned earlier, a total of 336 responses were received from a total target of 600. However, the responses received from Tier 1 were 122 (36.36%), the responses received from Tier 2 were 141 (41.96%), and the responses received from Tier 3 were only 73 (21.72%). Table 2 shows the summary of responses received from different tiers of SMEs.

**Table 2: Summary of Responses from Different Tiers**

Tier	No. of Responses	Percentage
Tier 1	122	36.36
Tier 2	141	41.96
Tier 3	73	21.72
Total	336	100

### Data Analyses and Results

Data collected were collated in Microsoft Excel and then transported to SPSS 22 and further analysed using descriptive statistics, Factor Analysis, one way ANOVA and Post Hoc Test.

One-way ANOVA comparisons were computed for each type of issues in the questionnaire to compare the firms in Tier 1, Tier 2 and Tier 3 (Sparrow, 2005). The following conclusions were drawn from ANOVA and post hoc tests.

The F ratio (1.169), as shown in Table 3, was not significant for cultural issues and the p-values for construct was 0.312 ( $p > 0.05$ ). Hence, it was concluded that there is no significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the cultural issues are concerned. They face similar challenges for these types of issues. Therefore, the null hypothesis was retained.

The F ratio (1.237), as shown in Table 4, was not significant for individual issues, and the p-values for construct was 0.292 ( $p > 0.05$ ). Hence, it was concluded that there is no significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the individual issues are concerned. They face similar challenges for these types of issues. Therefore, the null hypothesis was retained.

**Table 3: ANOVA (Cultural Issues)**

ANOVA					
Cultural Issues					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	65.690	2	32.845	1.169	.312
Within Groups	9356.310	333	28.097	F ratio is not significant. Hence the Null Hypothesis is retained.	
Total	9422.000	335			

**Table 4: ANOVA (Individual Issues)**

ANOVA					
Individual Issues					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	103.340	2	51.670	1.237	.292
Within Groups	13908.514	333	41.767	F ratio is not significant. Hence the Null Hypothesis is retained.	
Total	14011.854	335			

The F ratio (3.236), as shown in Table 5, was significant for measurement issues and the p-values for construct was 0.041 ( $p < 0.05$ ). Hence, it was concluded that there is a significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the measurement issues are concerned. The Post Hoc Analysis (Table 6) showed that for measurement issues, the p-value for Tier 2 and 3 is 0.045. The Mean of Tier 3 (19.5890) is greater than that for Tier 2 (18.4752). Thus, it was concluded that Tier 3 SMEs have a significant number of measurement issues, as compared to Tier 2. The other pairs viz, Tier 1 with Tier 2 and Tier 1 with Tier 3, do not show a significant difference for measurement issues. Therefore, the null hypothesis was rejected.

**Table 5: ANOVA (Measurement Issues)**

ANOVA					
Measurement Issues					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	67.344	2	33.672	3.236	.041
Within Groups	3465.129	333	10.406	F ratio is significant. Hence the Null Hypothesis is rejected.	
Total	3532.473	335			

**Table 6: Descriptives (Measurement Issues)**

Descriptives								
Measurement Issues								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Tier 1	122	18.5410	3.34305	.30267	17.9418	19.1402	8.00	24.00
Tier 2	141	18.4752	3.40710	.28693	17.9079	19.0425	9.00	25.00
Tier 3	73	19.5890	2.60254	.30460	18.9818	20.1963	11.00	25.00
Total	336	18.7411	3.24726	.17715	18.3926	19.0895	8.00	25.00

## CONCLUSIONS

Implementation of KM in SMEs is evolving as one of the key agendas in the context of the economy in developing countries. So far, most of the studies related to the KM implementation have been excessively concentrated on large enterprises. SMEs experience exceptional KM challenges that are distinctive from those of the big companies. Previous studies conducted in the area were proven inadequate in studying and identifying the implementation of KM from a small and medium-sized industry perspective. They have ignored the heterogeneity as well as specific features of SMEs that could impact KM. There exist some influencing issues, due to which SMEs fail to realise and recognise the potential benefits of KM. For implementing KM in SMEs, a better understanding of these influencing issues is essential, so as to confirm the accomplishment of their efforts. Despite the importance of KM for sustainable competitiveness, most SMEs still lack a systematic KM implementation.

The prime motivation for this research study was to provide the industries and academia with an understanding of the various KM issues, such as cultural issues, individual issues and measurement issues, faced by automotive component manufacturing SMEs in India. The empirical analyses of the above-mentioned issues showed that there is no significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the cultural and individual issues are concerned. All of them face similar challenges in the case of these two types of issues. However, there is a significant difference between Tier 1, Tier 2 and Tier 3 SMEs, as far as the measurement issues are concerned. Tier 3 SMEs have a significant number

of measurement issues, as compared to Tier 2. The other pairs, viz. Tier 1 with Tier 2 and Tier 1 with Tier 3, do not show a significant difference for measurement issues. It is anticipated that the outcome of this research could serve as a reference source for SMEs in the implementation of KM and provide them with more significant help in further enhancing the impact of KM implementation.

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