

Knowledge Sharing Orientation and Its Relationship with Business Performance: A Structural Equation Modeling Approach

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This study endeavors to find the impact of Knowledge Sharing Orientation (KSO) of business on its performance. Knowledge sharing orientation is one of the important dimensions of knowledge management orientation. A purposive sample of 300 key informants (CEOs, top level and middle level managers who were key decision makers in the organizations) from different manufacturing and service organizations has been taken from the National Capital Region (NCR), India, for the study. Self-designed non-disguised questionnaire has been used for the study. The relative performance of the organization compared to the major competitor for the last three years has been considered as the measure for business performance. The scales used for the survey were validated using Confirmatory Factor Analysis before applying Structural Equation Modeling for studying the relationships. The hypothesized relationship between KSO and business performance has been tested for two multi-group moderators, including firm size (based on number of employees/based on investment) and nature of industry. The results provide the evidence that KSO significantly and positively impacts the business performance. Firm size significantly moderates the relationship between KSO and business performance. The findings of the study will help knowledge management researchers and practitioners in devising strategies for better business performance.

Introduction

Knowledge sharing is the organizational process whereby various channels of interactions are involved in the interconnection of individuals to pursue and accomplish organizational goals through means such as social networks, informal and formal meetings and dialog (Yang, 2009). The literature suggests that intra-organizational knowledge sharing keeps knowledge and information obtained from various sources up-to-date and serves as a guide for future action (Hsu and Wang, 2008). Knowledge sharing is the critical means through which employees can contribute to knowledge application, innovation and ultimately the competitive advantage.

Knowledge Sharing Orientation (KSO) is defined as the “tendency in the organization to facilitate, encourage and reward knowledge exchange with the motive of capturing tacit and explicit learning gained by the employees” (Farooq, 2012, p. 26). KSO is one of the important

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dimensions of knowledge management orientation (Vij and Sharma, 2004). Knowledge sharing-oriented knowledge management practices include: appointment of facilitators to help people better express what they know so that others can understand it; making knowledge sharing behaviors an integral part of performance appraisal system; depriving people of some organizational benefits for not sharing the knowledge; and publicly recognizing and rewarding the knowledge sharing employees. In such an atmosphere, people do not have any reservations while parting with their tacit knowledge.

Business performance is considered as a complex multidimensional construct. The measure of performance may be objective (available in financial statements) or perceived/subjective. The use of subjective measure is a common practice in strategy-related research when financial statement data is unavailable or they do not allow for accurate comparisons among the firms. Moreover, literature shows that there is a high correlation between subjective and objective measures of performance (Dess and Robinson, 1984).

This study explores the impact of KSO of business on its performance and studies the moderating effect of firm size and nature of industry on this relationship, using structural equation modeling approach.

Literature Review

The significance of knowledge sharing in firms is highly acknowledged nowadays and various organizations have started improving the knowledge sharing within and across the departments (Berends, 2005). The knowledge sharing construct has been understood and defined differently in the literature. According to Yoo *et al.* (2007), "Knowledge sharing is the process of creating a mutual stock of knowledge among individuals or groups—the knowledge that someone in the organization already knows—through direct or indirect interaction". Matin *et al.* (2010) opine that "Knowledge sharing includes processes by which knowledge flows between resource and receiver. Each person or organizational unit can be a source, sender, facilitator or mediator between source and receiver".

Knowledge flow is important for creating competitive advantage and superior bottom-line and top-line performance. The main challenge is then to develop mechanisms that facilitate the efficient creation, development and sharing of knowledge within the corporation (Fey and Furu, 2008). Scholars have divided knowledge into two categories: tacit and explicit (Polanyi, 1966; Hedlund, 1994; Nonaka, 1994; Nonaka and Takeuchi, 1995; Spender, 1996; Tsoukas, 1996; and Roberts, 2000). There are many challenges pertaining to the tacit nature of an individual's knowledge (Nonaka and Takeuchi, 1995; and Teece, 1998). The major challenge in knowledge sharing is how to convert tacit knowledge into explicit one (Zack, 1999). Tacit knowledge creates barriers, while explicit knowledge advances knowledge sharing.

There are various individual and organizational factors that affect the knowledge sharing process within the organization like organizational trust, information systems, communication, organizational structure and rewards, etc. (Wasko and Faraj, 2000; Connelly and Kelloway, 2003; Lin and Lee, 2004; Wasko and Faraj, 2005; Lin, 2006; Al-Alawi *et al.*, 2007; and Lin, 2007).

It has been found that trust acts as a facilitator for knowledge sharing in organizations (Goh, 2002; Smith and Rupp, 2002; Connelly and Kelloway, 2003; Huff and Kelley, 2003; Syed-Ikhsan and Rowland, 2004; Chowdhury, 2005; Usoro *et al.*, 2007; Ma *et al.*, 2008; Renzl, 2008; Staples and Webster, 2008; and Holste and Fields, 2010). Employees are more likely to share knowledge within an environment where there are high levels of trust (French, 2010). Trust acts as an antecedent to knowledge sharing or knowledge transfer in the organizations (Holste and Fields, 2010; and Antonova *et al.*, 2011). Individual's attitude and the level of tendency towards knowledge sharing is the primary factor influencing intention to share knowledge (Chatzoglou and Vraimaki, 2009; and Abzari and Abbasi, 2011). Trust acts as an important antecedent and also indirectly affects knowledge sharing through organizational culture and relationships (McNeish and Mann, 2010).

The literature suggests that top management support is positively associated with knowledge sharing (Gupta, 2008; and Hsu and Wang, 2008). Organizational support is positively associated with organizational perceptions of innovation characteristics and interpersonal trust, which in turn are positively related to organizational intention to facilitate knowledge sharing (Lin, 2006). Top management involvement, infrastructure and organizational culture are the key antecedents for successful implementation of knowledge management practices in organizations (Chadha and Ritika, 2012).

Kim and Lee (2006) have found that performance-based reward systems, centralization, and social networks are significant variables that affect employee knowledge sharing capabilities in public and private organizations. However, Islam *et al.* (2011) have found that reward system does not have any impact on knowledge sharing. They also concluded that cultural elements, namely, trust, communication between staff, and leadership are vital for knowledge sharing.

Kang *et al.* (2008) have concluded that perceived trustworthiness between individuals involved in knowledge sharing positively influences both knowledge sharing and individual work performance. Boumarafi and Jobnoun (2008) have found that organizational culture, organizational infrastructure, management support, rewards and vision clarity are good indicators for measuring the contribution of knowledge management to performance improvement. Companies need to provide and support the acquisition, sharing and application of knowledge for effective knowledge management systems (Gold *et al.*, 2001; and Navarro-Cegarra and Conesa-Martinez, 2007). Organizational memory, knowledge sharing, knowledge absorption, and knowledge receptivity serve as first-order indicators of the higher-order construct labeled knowledge management orientation, which, in turn, has a positive link with market orientation and performance (Wang *et al.*, 2009).

Knowledge sharing is related to performance, and different dimensions of knowledge sharing contribute to performance differently. Contingent factors (integration of activities, organicness of structure and characteristics of top management) influence the relationship between knowledge sharing and performance (Du *et al.*, 2007). Knowledge sharing positively affects the organizational performance, and organizations need to take advantage of knowledge

sharing to incorporate innovation (Hoffman *et al.*, 2005; Yang, 2005; Du *et al.*, 2007; Cheng *et al.*, 2008; Hsu, 2008; Ngah and Ibrahim, 2010; Wang and Wang, 2012 and Wu *et al.*, 2012).

Successful knowledge transfer requires high level of individual motivation so that knowledge seeker and knowledge provider openly share and accept it because both motivational factors and knowledge sharing have significant and major effect on performance (Akram and Bokhari, 2011).

The size of the organizations has been widely discussed in the strategy and organizational theory literature and has often been tested as a moderator variable (Hage, 1980; Etlie and Rubenstein; 1987; Acs and Audretsch, 1990; Damanpour, 1991; Rothwell and Dodgson, 1994; Mao, 2002; Stock *et al.*, 2002; Temtime, 2003; Gilley *et al.*, 2004; Canback *et al.*, 2006; Gopalakrishnan and Bierly, 2006; Corsino *et al.*, 2011; Noor *et al.*, 2012; Varum and Rocha, 2012; Hirvonen *et al.*, 2003; Hui *et al.*, 2013; Laforet, 2013; and Naldi and Davidsson, 2013). Moffet and McAdam (2006) argue that irrespective of organizational size, knowledge-orientated issues are applicable to all the organizations. However, Kruger and Johnson (2010) indicate that organizations with different sizes address knowledge-orientated issues differently.

The nature of industry also moderates the relationships in various strategic management studies (e.g., Hitt *et al.*, 1982; Banerjee *et al.*, 2003; Sin *et al.*, 2005; Ortega *et al.*, 2006; and Tan *et al.*, 2012).

Literature on the construct of performance reveals that there is no consensus among the researchers on the appropriate measures of business performance. As a result, a wide diversity of performance measures, i.e., objective and subjective measures, as well as financial and non-financial measures are used across studies (Vij and Bedi, 2012). The subjective measures of performance are preferred over objective measures because the organizations are reluctant to provide required information and objective financial data on the firms is not publicly available which makes it unmanageable to ascertain the accuracy of any reported financial figures (Covin and Slevin, 1989). Dess and Robinson (1984) found that the findings from the subjective measures were consistent as to how the firm actually performed vis-à-vis return on assets and growth in sales. Relying on subjective (rather than objective) measures appears to be justified based on extensive prior research, which reports a strong correlation between subjective assessment of organizational performance and their objective counterparts (Walker, 2001). Researchers have preferred to rely on measures of 'Relative Performance', but which competitors (e.g., direct or indirect competitors) are chosen is very important (Uncles, 2011).

Objectives

In the light of the above discussion, this paper aims to study the following objectives:

- The relationship between KSO and business performance.
- The moderating effect of organization size and nature of industry on the relationship between KSO and business performance.

Hypotheses

To study the objectives, the following hypotheses have been framed:

- H₁: Knowledge sharing orientation has a significant and positive impact on business performance.*
- H₂: Knowledge sharing orientation will have an impact on business performance which is invariant across firms differing by size.*
- H₃: Knowledge sharing orientation will have an impact on business performance which is invariant across firms differing by nature of industry.*

Methodology

A self-designed non-disguised questionnaire has been used for this study. The questionnaire included two scales for measuring 'Knowledge Sharing Orientation (KSO)' and 'Business Performance'. Various statements of KSO and business performance have been identified based on a review of literature. For the purpose of selecting items for the scales, a battery of items were identified from the previous research and modified for the purpose of current study. The selected items were shown to experts in this field to evaluate the content validity. Based on the feedback of experts, some items were deleted/modified. Eleven statements have been selected for KSO scale (Appendix 1) and 10 statements have been selected for business performance scale (Appendix 2). The relative performance of the organization compared to the major competitor for the last three years has been considered as the measure of business performance for this study. The relative performance is measured on different dimensions related to all functional areas as suggested by Balanced Score Card approach (Kaplan and Norton, 1992). The instrument was pilot-tested and was found to be satisfactory. The scales used for measuring the constructs were validated before further use for analysis.

Different manufacturing and service organizations were taken as a sample for the study from the National Capital Region (NCR), India. The survey questionnaire (see Appendix 3) was administered on a convenience sample of 300 managerial level employees (CEOs, top level and middle level managers who were key decision makers in the organizations). 279 questionnaires were returned by the respondents and 240 were finally used, as 39 questionnaires lacked seriousness of the response. The profile of the sample is shown in Table 1.

Scheme of Analysis

The study proposed that KSO impacts business performance of an organization. The scheme of analysis included the following steps:

- Confirmatory Factor Analysis (CFA) utilizing Maximum Likelihood estimation method was used to validate the KSO scale and Business Performance Scale. The psychometric properties of the scales were assessed using χ^2/df , Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness-of-Fit Index (AGFI) and Root Mean Residual (RMR).
- Structural Equation Modeling was used to check whether KSO has any impact on business performance.

Criteria	Category	Number of Respondents (N = 240)	Percentage
Firm Size (Based on Investment)	≤ ₹10 cr	98	40.83
	> ₹10 cr	142	59.16
Firm Size (Based on Number of Employees)	≤ 250	37	15.41
	Above 250	203	84.58
Firm Age	≤ 15 years	17	7.08
	> 15 years	223	92.91
Industry Type	Manufacturing	92	38.33
	Service	148	61.66

- The hypothesized relationship between KSO and performance in the study has been tested for two multi-group moderators—organization size (based on number of employees and investment) and nature of industry.

Validation of KSO Scale

KSO has been measured using a 11-item scale. After applying the CFA on the scale, it was found that standardized regression weights are low and there were a few modification indices in addition to low value for CFI. Hence, it was decided to reduce observed variables to a smaller number of correlated factors using Exploratory Factor Analysis (EFA).

In order to test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) for individual variables was found to be sufficiently high for all the variables. Overall, the MSA was found to be 0.726 which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed statistically significant number of correlations among the variables (Approx. $\chi^2 = 288.385$, $df = 55$, significance = 0.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis (PCA) was employed for extracting factors. The number of factors to be extracted was finalized on the basis of 'Latent Root Criterion'. Oblique rotation with Promax was run. Rotation converged in 25 iterations.

We have assumed KSO to be a unidimensional construct, with factors representing the dimensions. These dimensions (factors) need to be correlated for KSO to be unidimensional. Therefore, Oblique Rotation with Promax was run to generate meaningful but correlated factors. Oblique rotation methods are best suited to the goal of obtaining several theoretically meaningful factors (Hair *et al.*, 2010).

All factor loadings greater than 0.40 (ignoring signs) have been considered. Four factors were extracted, which accounted for 54.682% of the total variance. The four extracted factors

Table 2: Results of Exploratory Factor Analysis for KSO Scale		
Factor Name	Name of the Dimensions (% of Variance)	Statement (Factor Loading)
Factor 1	Idea Sharing Propensity (24.170)	In our organization, everyone speaks up if they have an opinion or idea to offer. (0.553)
		In our organization, we are rewarded for sharing knowledge with the colleagues. (0.556)
		We do not share ideas with other people of similar interest, especially, when they are based in different departments.* (0.772)
Factor 2	Knowledge Sharing Culture (35.119)	In my organization, relatively more committed employees are more willing to share their learning and experiences with others. (0.774)
		My organization's culture encourages and facilitates knowledge sharing. (0.413)
		Top managers do not support and encourage employees to share their knowledge with colleagues.* (0.682)
Factor 3	Good Organizational Climate (45.727)	A climate of openness and trust permeates my organization. (0.812)
		Knowledge sharing behavior is built into the performance appraisal system in my organization. (0.497)
		There is no restriction for employees if they want to talk to anyone in organization, including top management. (0.675)
Factor 4	Top Management Support (54.862)	Our company culture welcomes debates and stimulates discussions. (0.818)
		Top managers provide most of the necessary help and resources to enable employees to share knowledge. (0.719)
Note: * These statements are negative and have been reverse coded.		

have been given appropriate names on the basis of variables represented in each case. Table 2 summarizes the results of EFA.

Cronbach's alpha for overall KSO scale comes out to be 0.678. The CFA was again applied to validate the KSO scale, reflected in terms of four factors identified, i.e., Idea Sharing Propensity (ISP), Good Organizational Climate (GOC), Top Management Support (TMS) and Knowledge Sharing Culture (KSC). The RMR, GFI, AGFI, CFI, RMSEA and Normed Chi-square were near

Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ^2	df	p-Value	χ^2/df
I	0.049	0.952	0.921	0.878	0.055	69.196	40	0.003	1.730

or above the threshold levels. Thus, the psychometric properties of the model indicated a good model fit (see Table 3).

Validation of Business Performance Scale

Business performance has been measured using a 10-item scale. After applying the CFA on the scale, the psychometric properties of the scale were not found good and a lot of modification indices were found. Hence, it was decided to reduce the observed variables to a smaller number of correlated factors using EFA.

In order to test the suitability of the data for factor analysis, the correlation matrix was computed and examined. The results indicated that there were enough correlations to justify the application of factor analysis. Kaiser-Meyer-Olkin measure of sampling adequacy for individual variables was found to be sufficiently high for all the variables. Overall, MSA was found to be 0.717 which indicated that the sample was good enough for sampling. Bartlett's Test of Sphericity showed statistically significant number of correlations among the variables (Approx. $\chi^2 = 528.769$, $df = 45$, significance = 0.000). Hence, all of these standards revealed that data was fit for factor analysis. Principal Component Analysis was employed for extracting factors. The number of factors to be extracted was finalized on the basis of 'Latent Root Criterion'. We have assumed subjective measure of business performance to be a unidimensional construct, with factors representing the dimensions. Oblique rotation with Promax was run; as factors need to be correlated for business performance to be unidimensional, with factors representing the dimensions. Rotation converged in 6 iterations.

All factor loadings greater than 0.40 (ignoring signs) have been considered. Three factors were extracted, which accounted for 59.412% of the total variance. The three extracted factors have been given appropriate names ('satisfaction relative to major competitor', 'profitability relative to major competitor', and 'innovativeness relative to major competitor') on the basis of variables represented in each case. Table 4 summarizes the results of EFA.

Cronbach's alpha for overall business performance scale comes out to be 0.718. The CFA was again applied to validate the business performance relative to major competitor (PER_COM) construct, reflected in terms of these three factors, i.e., PER_SAT (satisfaction relative to major competitor), PER_PRO (profitability relative to major competitor) and PER_INN (innovativeness relative to major competitor). The RMR and GFI were reflecting a good fit but AGFI, RMSEA, CFI and Normed Chi-square were below the threshold value as shown in Model I of Table 5. So it was decided to go in for item purification and the item CC10 was dropped because of high modification indices. The incremental fit of the scale is shown in Model II of Table 5, which indicates a good fit.

Factor Name	Name of the Dimension (% of Variance)	Statement (Factor Loading)
Factor 1	Satisfaction Relative to Major Competitor (30.358%)	Customer satisfaction compared to the major competitor. (0.826)
		Employee satisfaction compared to the major competitor. (0.745)
		Product quality compared to the major competitor. (0.736)
		Service quality compared to the major competitor (0.548)
Factor 2	Profitability Relative to Major Competitor (14.849%)	Market share compared to the major competitor. (0.796)
		Return on investment compared to the major competitor. (0.749)
		Sales growth compared to the major competitor. (0.635)
Factor 3	Innovativeness Relative to Major Competitor (14.206%)	Employee turnover compared to the major competitor. (0.762)
		Process innovation compared to the major competitor. (0.720)
		Product innovation compared to the major competitor. (0.617)

CFA Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ^2	df	p-Value	χ^2/df
I	0.025	0.906	0.839	0.787	0.117	137.227	32	0.000	4.288
II	0.021	0.931	0.871	0.868	0.097	77.614	24	0.000	3.234

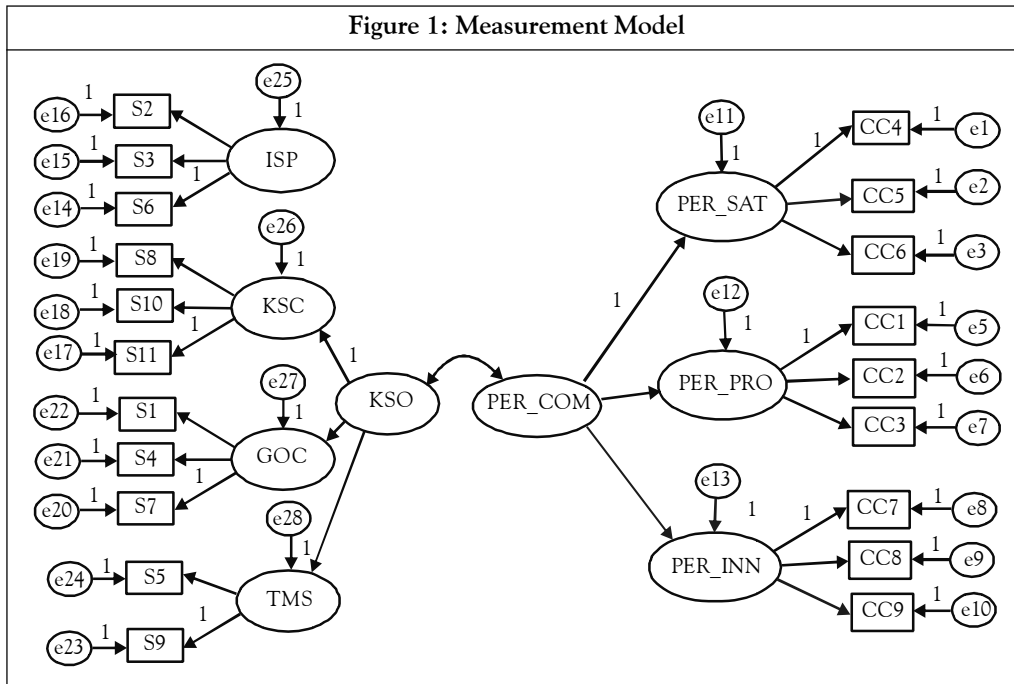
Hypothesis Testing

H_1 empirically tests whether KSO and business performance are positively related to each other. To test this hypothesis, a structural equation modeling approach has been used.

In the first instance, a measurement model was tested for checking the covariances between the two constructs i.e., KSO and business performance. The measurement model was fitted to estimate for the convergent validity and discriminant validity. Figure 1 shows the measurement model.

Part A of Table 6 shows the summary of the model fit indices and supports a good model fit. In the next stage, structural model was fitted to check whether the path of KSO to business performance was significant or not, as shown in Figure 2. The standardized regression weights for the model, as reported in the AMOS output, are depicted in Figure 2.

Figure 1: Measurement Model



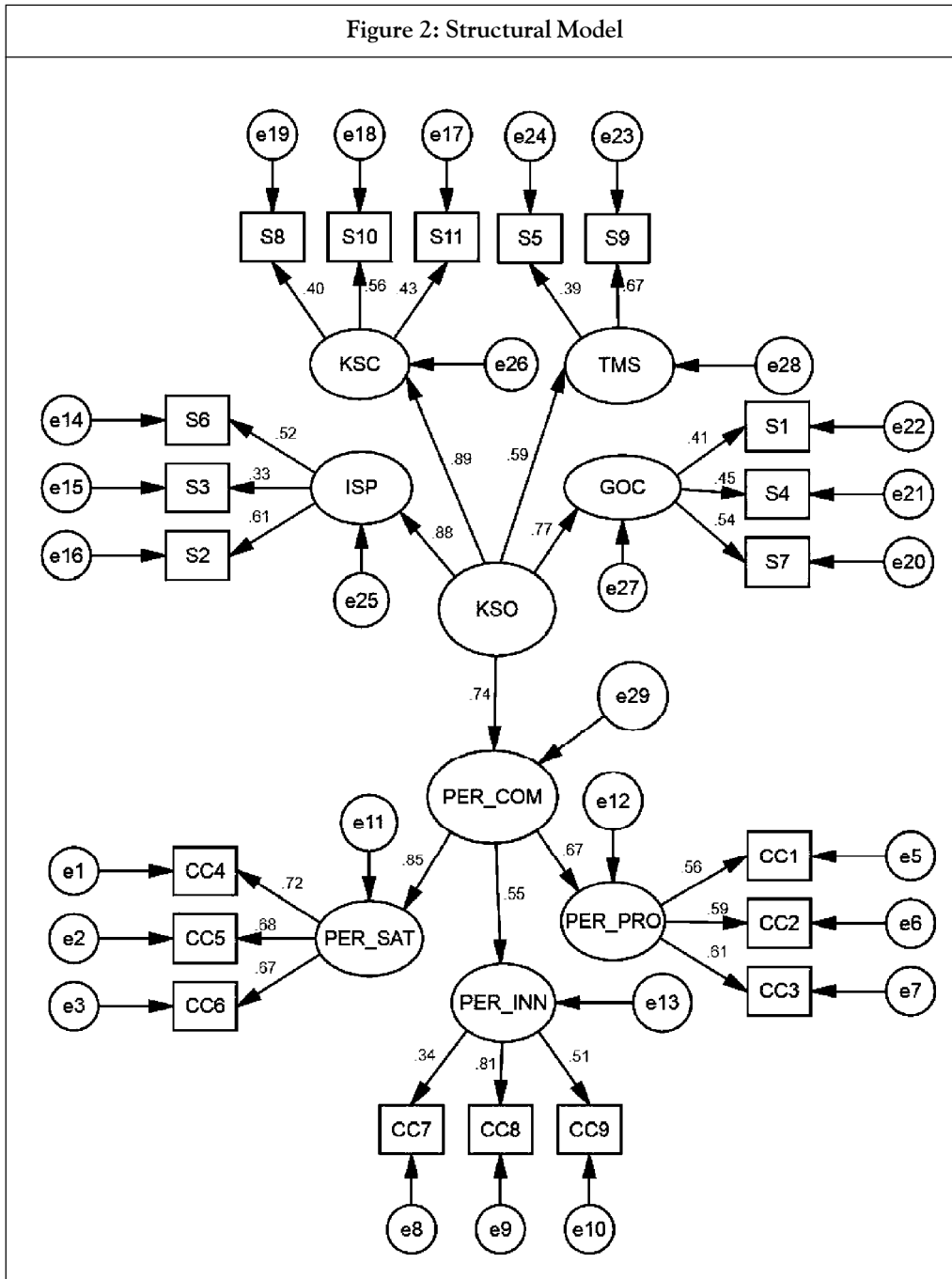
The psychometric properties of the SEM indicate a good model fit, as shown in part B of Table 6. The results provide the evidence that H_1 —*Knowledge sharing orientation has significant and positive impact on business performance*—is accepted.

H_2 and H_3 empirically test whether KSO will have an impact on business performance which is invariant across firms differing by size and nature of industry, using multi-group moderation analysis. Moderation generally involves the testing of structural model estimates for different subgroups under study.

Chi-square difference test was used to check the multi-group moderation across the groups, separately for all groups. First, the unconstrained model fit was evaluated, with path estimates calculated individually for each group. Second, a constrained model was evaluated where the path estimate of one of the path is constrained to be equal between groups. For both the constrained and unconstrained model, chi-square test value and degrees of freedom were noted and a chi-square difference test was conducted.

The results indicated that firm size (based on the number of employees and investment) was not found invariant across the groups. Firm size (based on number of employees) moderates the KSO→Business Performance relationship. The larger firms (having employees more than 250) more strongly impact the business performance through KSO in comparison with smaller firms (having employees less than or equal to 250), as indicated by significant standardized regression weight of 0.742 for larger firms as against 0.678 for smaller firms (Table 6a). On the contrary, the firms smaller in size (based on investment) have a strong impact of KSO on business performance as compared with larger firms (based

Figure 2: Structural Model



on investment), as is evident from standardized regression weights of 0.826 and 0.601 for smaller and larger firms, respectively (Table 6b). However, KSO→Business Performance relationship for industry nature (manufacturing/service) was found to be invariant across the groups, as is evident from Table 6c.

Default Model	RMR	GFI	AGFI	CFI	RMSEA	χ^2	df	p-Value	χ^2/df
(A) Measurement Model	0.037	0.909	0.883	0.872	0.048	252.545	162	0.000	1.559
(B) Structural Model	0.037	0.909	0.883	0.872	0.048	252.545	162	0.000	1.559

Model Characteristics	Unconstrained Model (TF for Each Group)	Constrained Model (KSO→PER_COM Equal Across Groups)	Model Differences $\Delta\chi^2$
Model Fit			
χ^2	532.776	562.923	30.147*
df	324.000	343.000	19.000
CFI	0.753	0.740	–
RMSEA	0.052	0.052	–

Note: * Significant at 0.05 level.

	Less Than or Equal to 250	Above 250
Standardized Regression Weight	0.678	0.742*

Model Characteristics	Unconstrained Model (TF for Each Group)	Constrained Model (KSO→COM Equal Across Groups)	Model Differences $\Delta\chi^2$
Model Fit			
χ^2	510.002	547.547	37.545*
df	324.000	343.000	19.000
CFI	0.792	0.771	–
RMSEA	0.049	0.050	–

Note: * Significant at 0.05 level.

	Less Than or Equal to ₹10 cr	More Than ₹10 cr
Standardized Regression Weight	0.826*	0.601

Model Characteristics	Unconstrained Model (TF for Each Group)	Constrained Model (KSO→COM Equal Across Groups)	Model Differences $\Delta\chi^2$
Model Fit			
χ^2	465.590	491.621	26.031**
df	324.000	343.000	19.000
CFI	0.824	0.815	–
RMSEA	0.043	0.043	–

Note: ** Not Significant.

	Manufacturing	Service
Standardized Regression Weight	0.742	0.768

Thus, H_2 —KSO will have impact on business performance which is invariant across firms differing by size—is rejected. However, H_3 —KSO will have an impact on business performance which is invariant across firms differing by nature of industry—is accepted.

Conclusion

The findings of the study provide evidence that knowledge sharing-oriented management practices lead to improved business performance. The managers should boost up the idea sharing propensity in their organizations. Employees should be encouraged to speak up and share whenever they have an idea or an opinion, and this kind of behavior should be duly rewarded. Good organizational climate should be created whereby high level of trust and openness prevails not only among the employees, but across the hierarchy. Above all, an enabling knowledge sharing culture, supported by top management, should be created so that knowledge sharing is facilitated and everyone is willing to share the tacit as well as explicit knowledge. As the size of the organization in terms of the number of employees increases, the necessity for having better KSO increases for enhancing business performance. Smaller firms (in terms of investment) need to have better idea sharing propensity, good organizational climate, excellent knowledge sharing culture and top management support for superior business performance. High KSO is equally desirable for manufacturing and service organizations to augment the business performance. These findings of the study will help knowledge management researchers and practitioners in devising strategies for better business performance. ■

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Appendix 1

Items Selected for KSO Scale		
Code	Statement	Source/s
S1	A climate of openness and trust permeates my organization.	Handzic <i>et al.</i> (2008)
S2	In our organization, everyone speaks up if they have an opinion or idea to offer.	Vij and Sharma (2004)
S3	We do not share ideas with other people of similar interest, especially, when they are based in different departments.*	Holtshouse (1998)
S4	Knowledge sharing behavior is built into the performance appraisal system in my organization.	Vij and Sharma (2004), Lin (2006), and Rahab <i>et al.</i> (2011)
S5	Our company culture welcomes debates and stimulates discussions.	Popper and Lipshitz (1998)
S6	In our organization, we are rewarded for sharing knowledge with the colleagues.	Vij and Sharma (2004), Lin (2006), and Rahab <i>et al.</i> (2011)
S7	There is no restriction on employees if they want to talk to anyone in the organization, including top management.	Vij and Sharma (2004)
S8	In my organization, relatively more committed employees are more willing to share their learning and experiences with others.	Hislop (2003), Lin (2006), and Peltokorpi (2004)
S9	Top managers provide most of the necessary help and resources to enable employees to share knowledge.	Huang <i>et al.</i> (2010), and Rahab <i>et al.</i> (2011)
S10	My organization's culture encourages and facilitates knowledge sharing.	Handzic <i>et al.</i> (2008)
S11	Top managers do not support and encourage employees to share their knowledge with colleagues.*	Huang <i>et al.</i> (2010), Rahab <i>et al.</i> (2011)
<p>Note: * These statements are negative and have been reverse coded.</p>		

Appendix 2

Items Selected to Measure the Subjective Performance	
Code	Compared to the major competitor in your industry, in the last three years, how has your business performed on the following parameters?
CC1	Sales Growth
CC2	Return on Investment
CC3	Market Share
CC4	Service Quality
CC5	Customer Satisfaction
CC6	Employee Satisfaction
CC7	Employee Turnover
CC8	Product Innovation
CC9	Process Innovation
CC10	Product Quality

Sources: Adapted from various studies: Berthon and Hulbert (2004); Darroach (2005); Wang and Wei (2005); Lin et al. (2008); Martinette and Leeson (2009); Mahmoodsalehi and Jahanyan (2009); Pett and Wolff (2010); Daud and Fadzilah (2010); Hou and Ying (2010); Said et al. (2010); Eshlaghy and Maatofi (2011)

Appendix 3

Questionnaire						
Dear Sir/Madam,						
Please spare some time from your busy schedule to answer the following questions. The information provided by you will be kept confidential and will be used for academic purpose only.						
Instruction:						
Following are some questions about the relative performance of your organization. Compared to the major competitor in your industry in the last three years, how has your business performed on the following parameters? (Please tick the appropriate rating: 1 = Much Worse, 2 = Worse, 3 = Almost Same, 4 = Better, 5 = Much Better)						
S. No.	Parameter	1	2	3	4	5
1.	Sales Growth					
2.	Return on Investment					
3.	Market Share					
4.	Service Quality					
5.	Customer Satisfaction					
6.	Employee Satisfaction					
7.	Employee Turnover					
8.	Product Innovation					
9.	Process Innovation					
10.	Product Quality					

Appendix 3 (Cont.)

Please indicate your agreement or disagreement with the following statements (5 = Strongly Agree, 4 = Agree, 3 = Neither Agree Nor Disagree, 2 = Disagree, 1 = Strongly Disagree).

S. No.	Statement	1	2	3	4	5
1.	A climate of openness and trust permeates my organization.					
2.	In our organization, everyone speaks up if they have an opinion or idea to offer.					
3.	We do not share ideas with other people of similar interest, especially, when they are based in different departments.					
4.	Knowledge sharing behavior is built into the performance appraisal system in my organization.					
5.	Our company culture welcomes debates and stimulates discussions.					
6.	In our organization, we are rewarded for sharing knowledge with the colleagues.					
7.	There is no restriction on employees if they want to talk to anyone in the organization, including top management.					
8.	In my organization, relatively more committed employees are more willing to share their learning and experiences with others.					
9.	Top managers provide most of the necessary help and resources to enable employees to share knowledge.					
10.	My organization's culture encourages and facilitates knowledge sharing.					
11.	Top managers do not support and encourage employees to share their knowledge with colleagues.					

Appendix 3 (Cont.)

Please answer the following questions about your organization:

1. Name of the organization _____
2. What is your role?
 - a. Executive Leadership/CEO
 - b. Senior Management/Vice-President
 - c. Middle Management
 - d. Administrative Staff/ Non-Management
3. Number of employees in the organization:
 - a. Less than 10
 - b. 11-50
 - c. 51-250
 - d. Above 250
4. The organization is in:
 - a. Manufacturing Sector
 - b. Service Sector
5. Number of years of existence of the organization:
 - a. ≤ 5 years
 - b. 6-10 years
 - c. 11-15 years
 - d. ≥ 16 years
6. The approximate total investment in our firm (in plant and machinery, equipment, etc.) is in the range of
 - a. ₹10-25 lakh
 - b. ₹25 lakh-₹2 cr
 - c. ₹2-5 cr
 - d. ₹5-10 cr
 - e. More than ₹10 cr

Your Name: _____

Contact Number: _____

E-mail id: _____

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