THE EFFECT OF EXPECTED BENEFIT AND PERCEIVED COST ON EMPLOYEES' KNOWLEDGE SHARING BEHAVIOR: A STUDY OF IT EMPLOYEES IN INDIA

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Abstract. *In the increasingly turbulent business environment knowledge is considered to be the most important source of sustainable competitive advantage and to sustain it, an organization must create, share, and utilize the knowledge it possesses. The critical knowledge is only available to the organization as long as employees are willing to cooperate. It can easily be lost if the employees decide to explore other opportunities outside the organization or employees fear to share knowledge with co-workers. To achieve continuous growth, organizations need to understand the factors which motivate and demotivate the employees to share knowledge. The present study examines the impact of employees' perception of perceived benefits and cost of knowledge sharing on their knowledge sharing behavior. Data were collected from 228 employees of two major Information Technology organizations in India. The results of regression analysis showed that benefits mainly perceived increase in expected association with others and expected contribution to organization positively influences employees' knowledge sharing behaviour. Perceived cost was found to influence negatively on knowledge sharing behaviour. The findings of the study are expected to provide significant inputs to organizations to design the practices which make knowledge sharing an integral part of the day-to-day conversation.*

Key words: *expected association, expected contribution, knowledge sharing, perceived cost, reward*

Introduction

The management of the knowledge base of organizations is becoming an area of strategic focus for many knowledge-intensive organizations (Ruggles, 1998; Beaumont & Hunter, 2002), and both theory and practice recognize that knowledge is one of the key

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strategic resources of a firm. While traditional economies used to rely on tangible assets such as land and capital, in today's economy the richest resource modern companies have is the knowledge that resides within their employees. Knowledge is unique as an organizational resource as other resources tend to diminish with use; the potential for growth in knowledge resources increases with use, as 'ideas breed new ideas, and shared knowledge stays with the giver while it enriches the receiver' (Davenport & Prusak, 1998, pp. 16-17). The organisational value of individual knowledge increases when it is shared (Styhre, 2002). Knowledge sharing arrangements are an important part of the innovation process as they help firms acquire technological capabilities, to build on past experience and knowledge, respond more quickly to problems, shorten development time to develop new ideas and insights, and avoid reinventing the wheel or repeating past mistakes.

Knowledge sharing is believed to be one of the most important processes for knowledge management (Bock & Kim, 2002; Lahti & Beyerlein, 2000). Thus, how to foster knowledge sharing among employees so that companies can leverage their richest resource has become a key managerial issue (Michailova & Husted, 2003). Studies have demonstrated that employees often resist sharing their knowledge (Ciborra & Patriota, 1998) and knowledge does not flow easily even when an organisation makes a concerted effort to facilitate knowledge exchange (Szulanski, 1996). A number of empirical studies have been conducted to examine the facilitators and inhibitors of knowledge flow within and between organizations in terms of the nature of knowledge, motivation for sharing knowledge, absorptive capacity of recipient, transmission channels, arduous relationship, and social structure within an organization etc. (e.g., Gupta & Govindarajan, 2000; Szulanski, 1996; Kotlarsky & Oshri, 2005).

As the knowledge an organization possesses is considered to be a resource leading to competitive advantage, management is inclined to exploit the knowledge of its employees to its own benefit by encouraging knowledge sharing. For the individual, the sharing of knowledge is an ambivalent proposition. It requires time and effort to share knowledge; and there is often concern about the loss of hard-earned knowledge, and doubt about how the knowledge would be received and put to use by others. It is this tension between organizational intent and individual ambivalence that makes knowledge sharing such a significant challenge in organizations. This issue becomes more critical to the knowledge intensive sector, specifically, information technology (IT), in a country like India where the growth in the service sector has been led by the IT–ITES sector, contributing substantially to increase in GDP, employment, and exports. This sector has increased its contribution to India's GDP from 6.1% in 2009-10 to 6.4% in 2010-11. Although this sector is booming, it is also constantly facing high attrition rates of 25% - 30%. According to a study conducted by MyHiringClub.com, the IT and ITES sectors saw the highest attrition rate of 23 per cent in the first quarter of 2010-11. Employees with experience of up to five years had the highest attrition rate of 39 per cent. In this scenario, it is essential that knowledge stays with the organization when employees leave the organization. Further, the continued growth of Indian IT companies depends on new ideas and their implementations which also place

emphasis on developing and implementing effective knowledge management strategies in organizations. Hence, it becomes imperative to understand the factors which affect the employees' engagement in knowledge creation and sharing behaviour in this sector. This study has been designed to explore the extent of employees' involvement in knowledge sharing and the factors influencing their engagement in knowledge sharing behavior in the knowledge intensive sector.

Knowledge Sharing

Knowledge can be defined as a combination of experience, values, contextual information, and expert insight that help evaluate and incorporate new experience and information (Gammelgaard & Ritter, 2000). Business knowledge is usually divided into explicit and tacit knowledge (Nonaka, 1994). Explicit knowledge can be written down, transferred, shared (Jarrar, 2002) and stored in knowledge resources (Studer & Stojanovic, 2005). It is based on objective criteria and has the character of public goods (Cavusgil et al., 2003). Examples of explicit knowledge are databases and instruction books (Duffy, 2000). Tacit knowledge, on the other hand, is difficult to interpret and transfer (Cavusgil et al., 2003; Crawford, 2005), as it resides in the human mind, behavior and perception (Duffy, 2000).

Knowledge sharing in organizations may be viewed as the behavior by which an individual voluntarily provides other members of the organization with access to his or her knowledge and experiences. This exchange can occur both informally in places like the corridor and formally in meetings, seminars and presentations (Bircham, 2003). Bock et al. (2005) stated that 'When an individual provides any part of their knowledge to another, whether it is achieved directly through communication or indirectly through mechanisms such as the use of a knowledge archive, they are engaging in knowledge sharing' (Bock *et al.* , 2005). According to Georgiadou & Siakas, (2009) knowledge sharing is the process where individuals mutually exchange both tacit and explicit knowledge, and jointly create new knowledge.

Factors Affecting Knowledge Sharing Behavior

Knowledge sharing is considered to represent a social activity that occurs within a system where knowledge represents a resource that has a value (Davenport & Prusak, 1998; Fulk et al. , 2004). Consistent with this perspective, various research examining knowledge sharing treats motivation as a function of a cost-benefit analysis (Burgess, 2005; Lin, 2007; Nahapiet & Ghoshal, 1998).

Studies examining the effect of different motivators on knowledge sharing have identified various personal benefits such as obligation by others to reciprocate, heightening of self-esteem, increased self-efficacy, increased personal identification with coworkers, respect from others, reputation, and enjoyment in helping others (e.g., Bock & Kim, 2002; Bock et al., 2005; Cabrera & Cabrera, 2002; Constant et al., 1994; Kankanhalli et al., 2005; Kwok & Gao, 2004; Lin, 2007; Wasko & Faraj, 2000).

A study by Constant et al. (1994) applied social exchange concepts to examine factors influencing one's intention to share information as expertise and information as product. The results of the experiment indicated that net personal benefits perceived as a result of sharing expertise were significant motivators for sharing. Bock and Kim (2002) reported that a positive attitude toward knowledge sharing was the more significant motivational factor of knowledge exchange (Bock & Kim, 2002). Reagans and McEvily (2003) found individuals were more willing to share when they perceived it would require less effort to articulate their knowledge or they could develop a negative reputation for not sharing, but Kankanhalli et al. (2005) found that level of effort only matters when there is a lack of trust. Wasko and Faraj (2005, p. 39) noted that "in order to share knowledge, individuals must perceive that sharing it would be worth the effort to others", implying that, besides caring about their own payoffs, individuals also consider the benefits that the recipient gets.

Regarding the effect of reward on knowledge sharing behavior, there have been contradictory findings. Some studies report that individuals' knowledge sharing behavior is positively affected by the potential for organizational rewards (e.g., Burgess, 2005) or coworker reciprocity (e.g., Bock et al. , 2005; Kankanhalli et al. , 2005; Lin, 2007). Other studies (e.g., Bock & Kim, 2002; Bock et al., 2005) suggest that reward has no effect on knowledge sharing (e.g., Bock et al. , 2005; Gupta, et al., 2009; Lin, 2007). Some research examining the effect of intrinsic rewards has found knowledge sharing behaviors are intrinsically motivated by the knowledge provider's desire to help others or make a contribution (Kankanhalli et al. , 2005; Lin, 2007), other research suggests the motivation to make a contribution is the result of viewing their knowledge as a public good belonging to the collective members of the organization (Lu et al., 2006). This view is associated with a concern for the collective organization that creates feelings of obligation to share their knowledge (Lu et al., 2006; Wasko & Faraj, 2000). The meta-analysis by Liang et al. (2008) concluded that the "perceived benefit" variable, which included "benefit" elements such as reputation and satisfaction, was found to be positively associated with an individual's knowledge sharing behavior. Cyr and Choo (2010) reported that the personal preferences about the distribution of sharing outcomes, individual perceptions about costs and benefits, and structural relationship with knowledge recipients, all affect knowledge sharing behavior significantly.

Knowledge sharing is most likely to occur when employees perceive that incentives exceed costs (Kelly & Thibaut, 1978). The cost of sharing is often represented in the effort required to articulate one's knowledge (e.g., Kankanhalli et al., 2005; Reagans & McEvily, 2003) or the loss of personal value associated with knowledge sharing (e.g., Fulk et al., 2004; Kankanhalli et al., 2005). Constant et al. (1994) reported that although individuals may be naturally inclined to share their expertise, they were less likely to do so if the requester had previously been unhelpful. The literature review suggests that there have been numerous studies examining the effect of various benefits influencing knowledge sharing behavior, while few studies identify the effect of perceived cost and relative comparison of perceived benefits and cost on the knowledge sharing.

The present study has tried to address this gap in the research with specific focus on informational technology sector.

Bock and Kim (2002) examined the impact of expected reward, expected association and expected contribution on knowledge sharing attitude. Expected rewards imply that, if employees believe they will receive extrinsic benefits such as monetary rewards, promotion, or educational opportunity from their knowledge sharing, they would develop a more positive attitude toward knowledge sharing (Bock & Kim, 2002). Expected associations suggest that if employees believe they could improve relationships with other employees by offering their knowledge, they would develop a more positive attitude toward knowledge sharing. Expected contribution refers to the idea that if employees believe they could make contributions to the organization's performance, they would develop a more positive attitude toward knowledge sharing (Bock & Kim, 2002). The present study states these three factors as benefits of knowledge sharing behaviour which not only include benefits to individual (expected reward and expected association) but also benefit to an organization (expected contribution), while the earlier studies have focused more on the individual level benefits of knowledge sharing. It intends to examine the relative impact of these three perceived benefits on individual knowledge sharing behaviour. At the same time, it also examines the impact of perceived cost on employees' knowledge sharing behaviour. Perceived cost was defined in terms of loss of time, job insecurity, loss of power, and misuse by others etc. The following hypotheses were proposed:

I. Expected reward will positively influence knowledge sharing behavior.
II. Expected association will positively influence knowledge sharing behavior.
III. Expected contribution will positively influence knowledge sharing behavior.
IV. Perceived cost will negatively influence knowledge sharing behavior.

Methodology

Sample and Procedure

To test the proposed research hypotheses, the study adopted the survey method for data collection. Data were gathered by means of questionnaires that were sent through electronic mail. Overall 300 questionnaires were mailed, and 228 usable questionnaires were received, with a response rate of 76% percent. The responses came from two major Information Technology organizations in India. The participants belonged to different positions, such as application developer, associate engineer, programmer analyst, project leader, senior software engineer, and system engineer etc. The average age of executives was 24.22 years and average experience with the organization was 5 years.

The Tool Used

Following is the description of questionnaires to measure the variables of the study.

Knowledge sharing behavior was measured using seven items. These items were developed on the basis of work of Lee (2001) and discussion with working profession-

als. Employees were asked to respond how frequently they share their knowledge with others in organizations on a 5-point scale (1 – very rarely, 5 – very frequently).

Expected Benefits were measured in terms of expected reward, expected association and expected contribution using items developed by Bock and Kim (2002).

Expected reward was measured with four items. Respondents were asked to rate the reasons for their sharing work ideas, expertise etc. in terms of the belief that they can get reward, on a 5-point scale (1 = extremely unlikely, 5 = extremely likely).

Expected Association was measured with five items. Here the respondents rated the reasons for their sharing work ideas, expertise etc. in terms they believe that it can improve mutual relationship, on a 5-point scale (1 = extremely unlikely, 5 = extremely likely).

Expected contribution was measured with five items. Respondents rated the reasons for for their sharing work ideas, expertise etc. in terms of their belief that it can improve the organization's performance, on a 5-point scale (1 = extremely unlikely, 5 = extremely likely).

Perceived Cost was measured with eight items. Respondents were asked to indicate the extent of agreement (1 = extremely unlikely, 5 = extremely likely) on the items, such as 'sharing knowledge with my colleague costs me too much time', 'sharing my knowledge will reduce job security', and 'my colleagues may take credit for the knowledge I voluntarily share with them', etc.

Analysis

Data were analyzed using descriptive and inferential statistical techniques. The descriptive statistics, correlations and reliability coefficients were computed for each measure. Hypotheses were tested using regression analysis.

Results

The means and standard deviations for all variables are presented in Table 2. The correlation values among study variables are reported in Table 2, which suggests that perceived contribution is positively related to knowledge sharing behavior and expected reward and perceived cost are negatively related to knowledge sharing behavior.

TABLE 1. **Descriptive Statistics for Study Variables**

Variables	Mean	SD	Reliability coefficients
Expected Reward	2.81	0.90	0.68
Expected Association	3.68	1.00	0.86
Expected Contribution	3.32	0.88	0.90
Perceived Cost	2.74	0.60	0.68
Knowledge Sharing Behavior	3.34	0.68	0.78

TABLE 2. **Correlations among study Variables**

	ER	EA	EC	(Eco)	KSB
Expected Reward (ER)					
Expected Association (EA)	0.231**				
Expected Contribution (EC)	0.219**	.775**			
Expected Cost (ECo)	0.047	-0.221**	-0.190**		
Knowledge Sharing Behavior (KSB)	-0.177**	0.047	0.257**	-0.391**	

Notes: * p <0.05; **p <0.01

Multiple Regression Analysis

Multiple regression analysis was used to test effect of expected reward, expected association, expected contributions, and perceived cost on knowledge sharing behaviour in the organization.

The results of regression analysis for expected benefits and perceived cost and knowledge sharing behaviour significantly support the overall model with F value of 9.68 ($p < .000$). Adjusted R square (.28) indicates that the variance in knowledge sharing behaviour is substantially explained by all the independent variables. Among these independent variables, expected association and expected contribution to organization positively contribute to knowledge sharing behaviour ($\beta = 0.53$, $p < 0.000$; $\beta = 0.41$, $p < 0.000$), while the expected reward and perceived cost negatively influence knowledge sharing behaviour ($\beta = -0.18$, $p < 0.002$; $\beta = -0.36$, $p < 0.000$ respectively) (Table 3). The results of the analysis support all the hypotheses except H1, stating the positive relationship between reward and knowledge sharing.

TABLE 3. **Results of Regression Analysis for knowledge sharing behavior as Dependent Variable and perceived benefits and cost as Independent Variables**

	Sum of Squares	Degrees of Freedom	Mean Squares	F	Sig
Regression	30.56	4	7.64	22.95	0.000
Residual	73.24	220	0.33		
Total	103.79	224			

R Square =0.29; Adjusted R-Square = 0.28

Variables	Standardized Coefficient	T	Sig
Expected Reward (ER)	-0.180	-3.086	0.002
Expected Association (EA)	0.411	4.554	0.000
Expected Contribution (EC)	0.536	6.004	0.000
Expected Cost (Eco)	-0.368	-6.290	0.000

Discussion and Conclusion

Knowledge had become the most important kit for competition and survival under the business climate in the 21st century (Ling, 2003). While traditional economies used to rely on tangible assets such as land and capital, today's economy has evolved to treat knowledge as the primary production factor on which competitive advantage rests (Beijerse, 1999). In the light of knowledge sharing being in essence a human activity (Robertson, 2002), the main purpose of this study was to develop an understanding of the factors that influence individuals' knowledge-sharing behavior in the organizational context. The contribution of the study lies in examining the relative impact of both the individual benefits and organizational benefits along with the perceived cost of knowledge sharing. This will help the organizations to prioritize their action plan to enhance knowledge sharing behavior. The choice of the information technology in India was based on the contribution of IT sector in Indian economy, and continued success of IT companies depends on high involvement of employees in knowledge sharing initiatives. Comparatively high attrition in IT sector further emphasizes that knowledge should be retained in the organization, even employees leave. The findings of the study suggest that expected reward is negatively related to knowledge sharing behavior and expected contribution to organization and expected improved association with others in the organziation positively influence knowledge sharing behavior. These findings are congruent with the findings of study by Bock and Kim (2002). The findings imply that knowledge sharing behavior is more influenced by social factors than economic factors. Individuals are involved in knowledge sharing behavior with the expectations that it will improve their relations with others in the organizations and it will contribute positively to organizational performance. These findings may be culture specific as India is a collectivistic nation (Hofstede, 1991). Whether the same relationship will exist in an Individualistic nation need to be verified by a study in an individualistic culture. The contribution of expected association may be industry specific as in IT sector employees work in different project teams. In this team context, building better rapport becomes essential in order to work effectively. Whether the same relationship between expected association and knowledge sharing will exist in individual work settings, needs to be examined.

The study reported reward is negatively related to knowledge sharing behavior. The explanations of the same may be as stated by Bock and Kim (2002) in terms of Kohn (1993) arguments for no relationship or negative relationship between reward and performance and explanations related to organizational citizenship behavior. The other explanation of inconsistent findings in relation to reward and knowledge sharing may be that the relationship between these variables is mediated by some individual and contextual variables. For the employees with internal locus of control reward may not be a significant motivator for knowledge sharing but for the external locus of control it may be. For lower level employees, individual rewards may positively influence knowledge sharing behavior but for middle and higher level, achieving team goals or organizational

goals may be a significant moderator. Future studies need to examine these proposed relationships.

The findings of the study indicated that when employees perceive that cost of knowledge sharing is high, they are less likely to be involved in knowledge sharing behavior. These findings are incongruent with the meta-analysis by Liang et al. (2008) which concluded that the "perceived benefit" variable, which included "benefit" elements such as reputation and satisfaction, as well as "cost" elements such as perceived risk and loss of value, was found to be positively associated with an individual's knowledge sharing behavior. Reagans and McEvily (2003) found individuals were more willing to share when they perceived it would require less effort to articulate, implying that more effort will lead to less sharing behavior. Kankanhalli et al. (2005) found that level of effort only matters when there is a lack of trust and suggested that relationship between perceived cost and knowledge sharing may be moderated by variables such as self-esteem, trust, type of relationship, duration of relationship etc., which can be an area of future research.

There are some limitations in our research that should be mentioned. Since this research only included 228 observations, findings should be confirmed through a larger sample in order to increase generalizability. The data was collected only from two IT companies in India, therefore the study needs to be replicated by collecting data from more IT organizations. Future study can also examine the differences in knowledge sharing behaviour in IT and Non-IT organizations. This research has only collected cross-sectional data, and it is not appropriate to infer strong causal relationships between variables. Collecting longitudinal data may be a better approach for future research. Another limitation is the use of self-reported measures when employees provided data on both independent and dependent variables. It is possible that the relationships among the independent and dependent variables were inflated due to common method variance.

In conclusion, the findings of the study suggest that employees are not involved in knowledge sharing behavior for their individual incentives but they are more willing to share for organizational growth. It implies that organization needs to create more employee engagement activities which can build up high emotional commitment. Building emotional commitment means engaging employees' emotional energy and attention. It is reflected in how employees relate to each other and feel about a firm (Ulrich, 1998). Organizations also need to create environment of trust and openness. The most often cited values that promote knowledge management behavior are trust and openness (van Krogh, 1998; Lee et al., 2006). A high level of trust in an organization is an essential condition for a willingness to cooperate (Goh, 2002). Employees will perceive the systems and process are fair in the organization that will reduce that fear of negative impact of knowledge sharing behaviour. Further, the human resource systems and policies to manage and develop employees should be aligned with organization goals. It will help the employees to perceive the link between their efforts and organization performance. Performance measurement system should include both individual performance and team performance, which will induce the knowledge sharing behaviour among team members.

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