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113,4

How expected benefit and trust influence knowledge sharing

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Received 5 August 2012
Revised 13 October 2012
26 November 2012
Accepted 26 November 2012

Abstract

Purpose – The purpose of this paper is to look at the relationships among factors which result in improved knowledge sharing, through the empirical validation of a theoretical model consisting of three dimensions: expected benefit in relation to knowledge sharing, trust at workplace, and employee knowledge-sharing behavior.

Design/methodology/approach – This study targets three technological companies with a total of employees exceeding 1,500 ($n = 563$), utilizing a survey questionnaire as the data collection instrument to test the relationship among the three dimensions. The structural equation modeling approach is used to test the proposed model.

Findings – The results show that trust at workplace has a mediating effect on organizational knowledge-sharing behavior. It is also discovered that there is significant correlation between expected personal benefit through sharing knowledge and the development of trust at workplace.

Originality/value – This study contributes empirical data to the predominantly theoretical literature by offering a deeper understanding of the mediating effect of trust on employee's expected benefit for the purpose of knowledge exchange behavior within teams and among teams.

Keywords Expected benefit, Knowledge sharing, Employees behaviour, Trust, Organizational culture, Information management

Paper type Research paper

1. Introduction

Knowledge sharing has been considered a key enabler of knowledge management (Nonaka and Takeuchi, 1995). Bartol and Srivastava (2002, p. 65) defined knowledge sharing as “individuals sharing organizationally relevant information, suggestions, and expertise with one another”. Existing literature proposed five main factors influencing effective knowledge sharing, including relationship between knowledge source and knowledge recipients, forms and locations of knowledge, knowledge recipients' learning predisposition, knowledge sources' ability to share, and the environment in which knowledge sharing occurs (Cummings, 2003). However, due to the fact that people have the tendency to treat their professional knowledge as their personal assets and competitive advantages (Lam and Lambermont-Ford, 2010), effective sharing of knowledge among individuals or teams may not take place in organizations (Fisher and Fisher, 1998).

According to Davenport and Prusak (1998), people assess the benefits they may gain resulted from knowledge sharing before they share. Thus, expecting people to take the initiative to share knowledge seems to be unnatural. Szulanski (1996) suggested that people's lack of motivation for being a knowledge source can be an obstacle for organizational knowledge transfer. Unless people have a clear answer to the question, “what is in it for me”, knowledge sharing is unlikely to take place (Bartol and



Srivastava, 2002, p. 65). Therefore, knowledge sharing is, often times, an interdependent process involving people exchanging something of value and in return, receiving something of value (Christensen, 2005).

According to economic exchange theory, people behave by rational self-interest. Therefore, knowledge sharing will occur when rewards meet expectations (Constant *et al.*, 1994). Rewards could range from monetary (e.g. profit sharing, bonuses) to non-monetary (e.g. time off with pay); reward could also be intrinsic (e.g. pleasure of doing something, gifts) and extrinsic (e.g. monetary awards) (Bartol and Srivastava, 2002). Tan Tiem *et al.* (2004) suggested that rewards are the stimuli that affect or encourage people to do something. Considerable amount of studies have demonstrated that incentives contribute to knowledge sharing behavior (Jahani *et al.*, 2011) and self-esteem (Lin, 2007b). However, while some researchers argued that rewards contingent on knowledge sharing have positive effects on the extent of individual knowledge contribution within organizations (Bartol and Srivastava, 2002), some studies on intrinsic and extrinsic motivation for knowledge sharing, such as Osterloh and Frey (2000), suggested that intrinsic motives are much more powerful enablers of knowledge sharing than are extrinsic (e.g. monetary or administrative) stimuli. These arguments open a door for further investigation on how rewards influence knowledge sharing within organizations.

Within the literature, scholars, such as Ho *et al.* (2012), have recognized the importance of interpersonal trust for fostering an environment in which people are willing to share information. Renzl (2008) pointed out the importance of trust in general, and trust in management on knowledge sharing, and further argued that trust increases knowledge sharing via reducing one's fear of losing his/her unique value and improving one's willingness to contribute knowledge through codifications or oral discussions. Clearly, trust at workplaces encourages cooperative behaviors, such as sharing knowledge, among people (McAllister, 1995), and is extremely fundamental for the long-term stability of organizations and the well-being of people who work in organizations (Cook and Wall, 1980). Nevertheless, knowledge sharing intention does not necessarily lead to knowledge sharing behavior unless reasonable external control or stimuli are taken into account (Yang and Farn, 2009). The lack of sufficient extrinsic and/or intrinsic rewards to compensate people for one's losses of knowledge sharing is turning into a common obstacle of knowledge sharing (Huber, 2001).

Past literature neglected potential conflicts of interests and incentive issues in relation to knowledge sharing (Foss, 2003), and pointed out that perceived fairness of reward systems will assist the development of trust between an organization and its employees, and have encouraged further empirical study on the role of benefit expected by employee through knowledge sharing participation because the existing evidence on the effectiveness of the different types of reward is mostly inconclusive (Bartol and Srivastava, 2002). It is evident that there are a number of causal links which must be considered in understanding how an organization can implement effective knowledge sharing mechanisms. This study attempts to look at factors which result in improved knowledge sharing through the proposal and empirical validation of a theoretical model, consisting three major dimensions, namely:

- (1) expected benefit in relation to knowledge sharing;
- (2) trust at workplace to elicit knowledge sharing intention and behavior; and
- (3) the employees' perception of knowledge sharing.

2. Literature review

2.1 *Expected benefit in relation to knowledge sharing*

Gibbert and Krause (2002) pointed out that knowledge sharing emphasises people's willingness to share with others in the workplaces the knowledge they have acquired or created. The key words here are "people's willingness". Since organizational knowledge largely resides within individuals, it remains unexposed to others until knowledge owners want to make it available. Practically, knowledge sharing cannot be forced. Knowledge sharing can only be encouraged through proper organizational policies (e.g. reward systems) and facilitated through proper organizational infrastructure (e.g. information communication systems). As Ruggles (1998) pointed out, the biggest difficulty in knowledge management is changing people's behavior. Rather than just encouraging or mandating knowledge sharing, fostering the motivation to share knowledge must precede (Bock and Kim, 2002).

Past studies have suggested that motivational forces derived from one of the two streams: people's personal belief structure and institutional structure (Szulanski, 1996). Bock *et al.* (2005) mentioned that as knowledge sharing come with participant costs, employees' personal beliefs that expected benefits will outweigh these costs are a critical determinant of knowledge sharing behaviors. They further classified personal beliefs into three categories: individual (e.g. self-interests), group (e.g. relationship with others) and organizational benefits (e.g. organizational gains). On the other hand, institutional structure refers to an organization's culture or climate which nurtures employees' knowledge sharing behaviors. Despite the differences on climate and culture, both the literature on organizational culture and organizational climate addresses the same phenomenon, which is creating a social context that influences behaviors in organizations (Bock *et al.*, 2005).

The relationship between rewards and knowledge sharing behavior has been periodically supported. For example, Bock and Kim surveyed four large organizations and found that employees' expected association with others and expected contribution to organizations are two main factors influencing attitudes toward knowledge sharing. Additionally, Bock *et al.* (2005) employed the theory of reasoned action model, in conjunction with extrinsic motivators, social-psychological forces and organizational climate factors, and found that anticipated reciprocal relationships have a positive correlation with employees' intention of knowledge sharing. Similar results can be found in Lin's (2007a) study in which both extrinsic motivational factor (i.e. reciprocal benefits) and intrinsic motivational factors (i.e. knowledge self-efficacy and enjoyment of helping others) have positive influence on knowledge sharing. Thus, the following hypothesis is proposed:

- H1.* Expected personal benefit through sharing knowledge will have a positive effect on the employees' knowledge sharing behavior.

2.2 *Expected benefit in relation to trust*

It is previously mentioned that reward, regardless of its types, may play an important role in organizational knowledge sharing. Particularly, perceived fairness of the reward systems in organizations may assist the development of trust between an organization and its employees (Bartol and Srivastava, 2002). According to Greenberg (2005), organizational justice, a term used to describe the role of fairness in the work place, consists of procedural justice and distributive justice. While procedural justice refers to the ways that employees

determine whether they are treated fairly in their jobs as well as the ways that those determinations can affect other work-related influences (Yusof and Shamsuri, 2006), distributive justice refers to the ways that employees determine whether the received rewards are related to their work-related effort or performance (Price and Mueller, 1986). Bartol and Srivastava (2002) proposed that both procedural and distributive justice fairness of rewards will influence the level of trust built at workplaces, which consequently affecting employees' willingness and behavior of knowledge sharing. Lind and Tyler (1988) suggested that procedural fairness is an important basis of trust building in the employee-management relationship. Consistent with these argument, there are several scholars have similar empirical results supporting the correlation between organizational justice and trust at workplaces (Frazier *et al.*, 2010).

That aside, from a gainsharing perspective, Lawler (1975) has developed a theoretical model that identified some of the underlying mechanisms invoked when employees participate in the development of pay plans. Lawler proposed that participation in pay-plan decisions leads workers to have feelings of increased control and commitment and increased information regarding the pay system, which, in tern, lead to greater trust of the pay system and a more favorable perceptions of the plan. As Leventhal (1976) argued, managers who allocate organizational incentives (i.e. monetary or non-monetary rewards) should establish a reputation as being trustworthy and ensure fair outcomes according to employees' actual performance, which will be an important foundation to build a trusting atmosphere within organizations. Based on previous research findings, hereby we present the following hypothesis:

- H2. Expected personal benefit through sharing knowledge will have a positive effect on the creating of a trusting atmosphere in organizations.

2.3 Trust in relation to knowledge sharing

Asgari *et al.* (2008) suggested that trust is a complex and multi-facet construct that is not fully understood. Cook and Wall (1980) defined that trust acts between individuals and groups within organizations and is highly important for an organization's long-term stability and its members' well-beings. Cook and Wall further suggested three main approaches in empirical studies that can be used to differentiate trust:

- (1) inferring trust indirectly from other forms of behaviors;
- (2) creating a situation where trust is developed to support task performances; and
- (3) defining a level of performance as an indicator of the degree to which trust has developed.

The last approach measures trust as a direct experience using self-report scales, and is widely used as means to examine trust at workplaces in recent literature (He *et al.*, 2009; Ho *et al.*, 2010).

The significant of trust at workplaces has been articulated by both researchers and practitioners (McCauley and Kuhnert, 1992). Hinds and Pfeffer (2003) suggested that, from a salient aspect of organizational climate, people tend to share knowledge in a climate where individuals are highly trusting of others and of the organization. Moreover, Levin *et al.* (2004) pointed out two distinct types of trust that are instrumental in the process of sharing knowledge, including benevolence-based trust and competence-based trust. They argued that even if there was only irregular interaction

between two parties, trust can be developed as long as competence- and benevolence-based trust exists between the two parties. Yang and Farn (2009) further discovered that affected-based trust can promote employees' intention to share tacit knowledge, especially in an informal setting. Therefore, trust is found to reduce one's fear of losing his/her uniqueness which ultimately enhance one's intention and behavior of knowledge sharing (Renzl, 2008). Even though it has not been directly addressed in related literature, He *et al.* (2009) argued that trust at workplaces has been considered as a key enabler for seeking knowledge. In accordance with these observations, the following hypothesis is proposed:

H3. Trust at workplace will have a positive effect on the employees' knowledge sharing behavior.

Figure 1 shows the research model.

3. Methodology

Based on the research objective and the hypotheses generated through the reviewed of literatures, this study uses a survey questionnaire to collect data in order to validate the proposed model. The structural equation modelling (SEM) approach was used to test the proposed model. The analysis for the present study was conducted using LISREL 8.52 and utilizing the maximum likelihood method.

3.1 Questionnaire design

The questionnaire is composed of four parts including: expected benefit in relation to knowledge sharing, trust at workplace, employees' knowledge sharing behavior within organizations, and personal background (i.e. gender, age, education background, length of work experience at present company). The questions were answered using a five-point Likert scale (1 – strongly disagree to 5 – strongly agree). Details of the dimensions are described as follows.

I. Expected benefit in relation to knowledge sharing. This study adopts the three-factor model of motivational factors influencing knowledge sharing attitudes proposed by

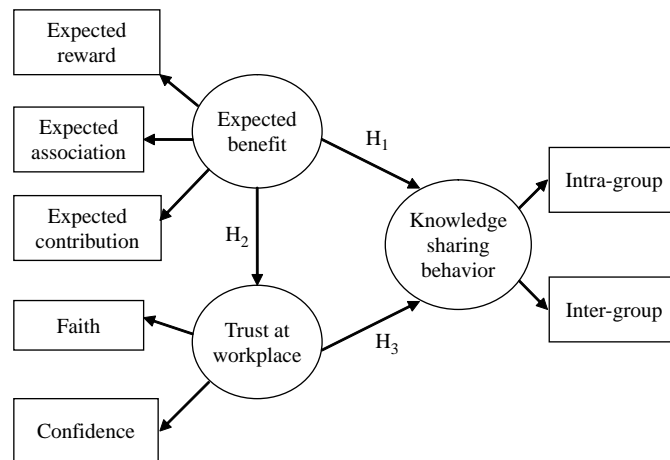


Figure 1.
Research model

Bock and Kim (2002) and Bock *et al.* (2005) to measure employees' attitude toward benefits followed by their knowledge sharing behaviors. Both models considered the two most important theories which explain knowledge sharing: economic exchange and social changes theory, and includes the three most studied motivational factors: expected reward, expected association, and expected contribution. While the expected reward refers to the extent to which one believes that one can be properly awarded with extrinsic incentives due to one's knowledge sharing behaviors, the expected association refers to the extent to which one believes that one can have improved mutual relationship with fellow co-workers (including the management) through one's knowledge sharing behaviors. Finally, the expected contribution refers to the extent to which one believes one can improve the organization's performance through knowledge sharing behaviors.

II. Trust at workplace. Trust in this study refers to identification-based trust according to Hsu *et al.* (2007), consisting of the emotional bonds between individuals. Trust at workplace was measured by Cook and Wall's (1980) scale, which divides trust at workplace into two different dimensions: faith in trustworthy intentions of others sharing information online, and confidence in the ability of others sharing information online, leading to perceptions of capability and reliability. Each of these dimensions can further refer to either peer or management within organizations.

III. Knowledge sharing behavior. Knowledge sharing is the means by which an organization gain access to its own and external knowledge (Cummings, 2003). In this study, knowledge sharing activities include sharing knowledge with internal and external colleagues via online systems (e.g. e-mails, internal knowledge systems, etc.) or face-to-face encounters (e.g. meetings, daily conversations, etc.). The sharing can be formal or informal exchange of information, ranging from posting personal opinion of interests to a knowledge system, uploading materials, to casual dialogues among fellow co-workers in person or on the phone. Knowledge sharing behaviors were measured by adopting Cumming's (2004) scale, which categorizes knowledge sharing into two types: within work groups and among work groups. Table I presents the sample items for the questionnaires (translated from Chinese).

Dimension	Factor	Number of items	
		per factor	Sample item
Expected benefits	Expected reward	4	I am properly recognized for my frequent sharing of knowledge
	Expected association	5	My co-workers and I form a stronger bond due to our knowledge sharing behaviors
	Expected contribution	5	The company delivers better quality products due to our knowledge sharing behaviors
Trust at workplace	Faith	3	My co-workers are willing to help me by sharing their work-related experience
	Confidence	3	I trust my co-workers' ability in providing me with useful information
Knowledge sharing	Between work teams	3	I share work-related experience face-to-face to people who are not on my team (or departments)
	Within work teams	3	I constantly discuss work related problems with people who are on my team (or department)

Table I.
Survey structure and sample survey items

3.2 Sampling

The data used in this research consists of questionnaire responses from participants in three technological companies which are located in the Taipei and Hsinchu Science Parks in Taiwan. Technology companies were chosen due to their recent effort in promoting knowledge management and extensive adoption of knowledge management systems to support knowledge sharing in addition to regular face-to-face information exchanges. The other criteria for company selection were:

- the fulltime employees of each company must exceed 500 people;
- the company must have several years of experience implementing knowledge management and have some kind of mechanism (e.g. information technology infrastructure or regular meetings to support the storing, sharing and utilization of knowledge among employees), facilities (e.g. conference rooms or open access areas for informal gathering or dialogues), or policy (e.g. reward) designed in-house to facilitate knowledge sharing; and
- the company is team-based.

A total of 1,500 survey questionnaires were distributed among the three companies. Among these, 574 surveys were returned and 563 were valid for analysis (valid return rate is 37.53 percent). The duration of data collection is between 1 May and 15 June 2012. Table II presents the demographics of the sample. Non-response analysis was conducted to ensure the absence of non-response biases. Following Armstrong and Overton's (1977) suggestion, this study divided the valid questionnaires into two sets (i.e. the former 75 percent and the latter 25 percent) based on the returned times, and examined whether there was significant differences between the two sets of data. The responses of the latter 25 percent participants are closed to the responses of the non-respondents. The results show that there is no difference between respondents and non-respondents.

3.3 Reliability and validity tests

Reliability and validity tests were used to examine the constructs with multivariate measures. Cronbach's α reliability estimates were used to measure the internal consistency of these multivariate scales (Nunnally, 1978). The Cronbach's α of each

Construct	Classification	Number	(%)
Gender	Male	353	62.7
	Female	210	37.3
Age	< 30	79	14.0
	31-40	169	30.0
	41-50	232	41.2
	> 50	83	14.7
Education	BS or under	360	63.9
	Masters	171	30.4
	PhDs	32	5.7
Length of work years at present company	< 5	185	32.9
	5-10	228	40.5
	10-20	103	18.3
	> 20	47	8.3

Table II.
Sample characteristics

constructs of the present study was greater than 0.885, which indicates a satisfactory reliability for our survey instrument (Cuieford, 1965). Kerlinger (1999) suggested that measures with item-to-total correlations larger than 0.6 are considered to have high criterion validity. The item-to-total correlation of each factor of all three measures was at least 0.5800 (Table III), which means the criterion validity of each scale is also considered to be satisfactory. Meanwhile, to ensure that the instrument has reasonable construct validity, both exploratory and confirmatory factor analyses were used. The result of exploratory factor analysis is presented in Table III.

The confirmative factor analysis, which consists of the convergent and discriminant validity, was employed following Campbell and Fiske’s (1959) criteria. The results show that the correlations are all greater than zero and large enough to proceed with discriminant validity. Furthermore, discriminant validity was examined by counting the number of times an item correlates higher with items from other factors than with items from its own factor (Aldawani and Palvai, 2002). Campbell and Fiske suggest that this number should be less than 50 percent. Results also show adequate discriminant validity. Therefore, the constructs in this study display both convergent and discriminant validity.

4. Results and limitation

The SEM approach is a multivariate statistical technique that incorporates both observed and latent variables (Aldawani and Palvai, 2002). In the proposed model, expected benefits of knowledge sharing is considered an exogenous variable, and knowledge sharing behavior is considered an endogenous one, while trust at workplace (i.e. mediate factor) serves as both an endogenous and an exogenous variable. The individual questionnaire items were aggregated into specific factor groups. Four rules were followed for the statistical analysis of the proposed model:

- (1) each observed variable has a nonzero loading on the latent factor within the structure, but has a loading of zero towards other latent factors;
- (2) there are no relationships among measurement errors for observed variables;
- (3) there are no relationships among the residuals of latent factors; and
- (4) there are no relationships among residuals and measurement errors.

Dimension	Factor	Percentage of variance	Cumulative %	Item-to-total correlations	Cronbach’s α
Expected benefits	Expected reward	26.887	75.933	0.6891	0.9180
	Expected association	26.358		0.6363	0.9048
	Expected contribution	22.687		0.6997	0.9143
Trust at workplace	Faith	41.041	80.278	0.5847	0.8961
	Confidence	39.237		0.5847	0.8554
Knowledge sharing	Between work teams	39.747	79.107	0.5800	0.8728
	Within work teams	39.360		0.5800	0.8622

Table III. Factor analysis and internal consistency values for the questionnaire

Table IV shows the descriptive statistics for the dimensions, and the results of fit of the internal structure of model are shown in Table V.

Table VI illustrates the results of the fit test of the overall model. The absolute fit measures (GFI = 0.99, AGFI = 0.98 and RMSEA = 0.035) indicate that the structural model either meets or exceeds the recommended levels, and thus represents a satisfactory fit for the sample data collected. The χ^2 statistic divided by the degrees of freedom also indicates a reasonable fit at 1.70. It can thus be concluded that the proposed model maintains good construct validity.

Table IV.
Description statistics
for the dimensions

Dimension	Mean	SD	Order	Cronbach's α
Expected benefits	3.4035	0.5179	3	0.9384
Trust at workplace	3.5077	0.3799	2	0.8851
Knowledge sharing	3.5986	0.3627	1	0.8796

Table V.
Fit of the internal
structure of model

Dimensions	Factors	Individual item reliability	Composite reliability	Average variance extracted (AVE)
Expected benefits	Expected reward	0.66	0.82	0.61
	Expected association	0.64		
	Expected contribution	0.53		
Trust at workplace	Faith	0.55	0.74	0.59
	Confidence	0.62		
Knowledge sharing	Between work teams	0.55	0.74	0.59
	Within work teams	0.62		

Table VI.
Fit test of the model

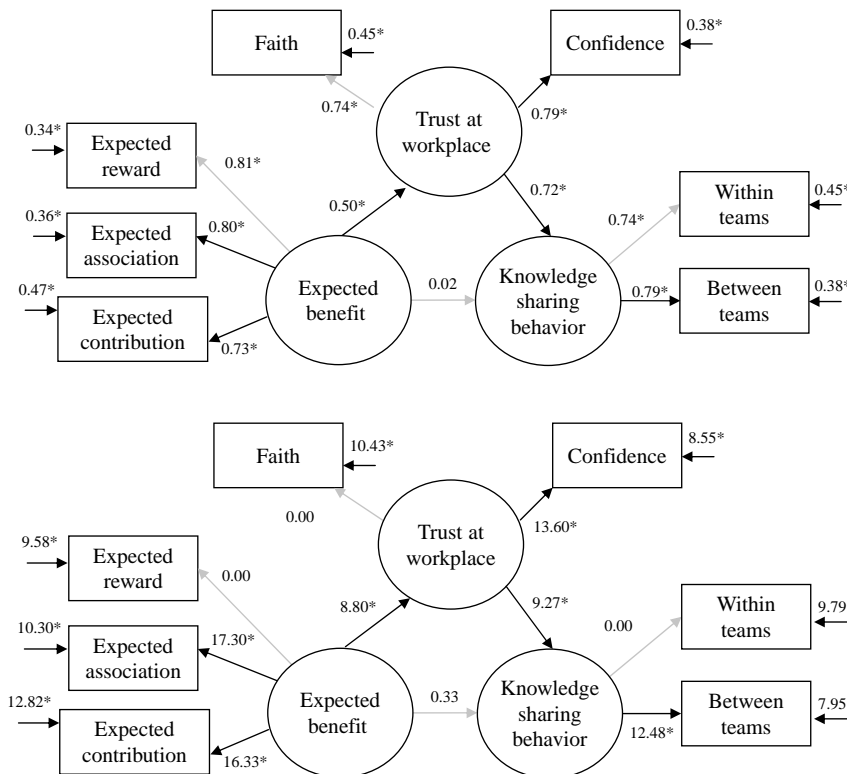
Measures	Indicators
Absolute fit measures	χ^2 with degrees of freedom = 18.74 ($p < 0.066$) Goodness of fit index (GFI) = 0.99 Root mean square error of approximation (RMSEA) = 0.035 p -value for test of close fit (RMSEA < 0.05) = 0.79 Expected cross-validation index (ECVI) = 0.094 90 percent confidence interval for ECVI = (0.080; 0.12) ECVI for saturated model = 0.100 ECVI for independence model = 3.38
Incremental fit measures	Adjusted goodness of fit index (AGFI) = 0.98 Normed fit index (NFI) = 0.99 Non-normed fit index (NNFI) = 0.99 Comparative fit index (CFI) = 1.00 Incremental fit index (IFI) = 1.00 Relative fit index (RFI) = 0.98
Parsimonious fit measures	Parsimony normed fit index (PNFI) = 0.52 Parsimony goodness of fit index (PGFI) = 0.39 Critical N (CN) = 752.58 Normed χ^2 18.74/11 = 1.70

Figure 2 shows the values of factor loading and observed residual for the exogenous and endogenous variables, as well as the values of parameter estimate and their significance levels. The analytical results of the LISREL model reveal a satisfactory fit for our sample data with the final results shown in Figure 2.

Figure 2 also shows that expected personal benefit through sharing knowledge significantly influence the mediator trust at workplace ($\gamma = 0.50, t = 8.80, p < 0.001$). The mediator, trust, has a significant impact on knowledge sharing behavior ($\beta = 0.72, t = 9.27, p < 0.001$). Thus, two out of three hypothesised relationships (*H2* and *H3*) were significantly supported by the sample data.

In order to further test the mediating effect that trust has on the relationship between expected benefit and knowledge sharing, this study adopts Baron and Kenny's (1986) study, which proposes that a variable works as a mediator when it meets the following three criteria:

- (1) the independent variables significantly influences the mediating variable (path a);
- (2) the mediating variable significantly influences the dependent variable (path b);
- and
- (3) when paths a and b are controlled, a previously significant relation between the independent variable and the dependent variable is no longer significant.



Note: Significant at: * $p < 0.001$ ($|t| > 3.29$)

Figure 2. Analytical results of expected benefit and knowledge sharing, mediated through trust

The direct effect of expected benefit on knowledge sharing behavior was tested as a first step. Here the path was significant (Figure 3). After introducing the mediator variable (i.e. trust at workplace), this path became insignificant (Figure 2), indicating that trust has a fully mediating effect on employees' knowledge sharing behavior.

In sum, all conditions were met for demonstrating that trust mediates the link between expected personal benefit through sharing knowledge and knowledge sharing behavior. First, the employee expected benefit has a positive impact on their knowledge sharing behavior when trust was not included in the testing model (Figure 3). However, the significance effect of expected benefit on knowledge sharing (i.e. the outcome variable) disappeared after trust (i.e. the mediating variable) was included (Figure 2). Additionally, as the trust is the mediating position in the testing model, expected benefit demonstrates a positive and significant impact on the mediator trust, and the mediator has a significant influence on knowledge sharing. Therefore, the study concludes that trust at workplace mediates the relationship between expected benefit and knowledge sharing within high tech organizations.

While the empirical data collected have largely supported the proposed model, it is necessary to point out the limitations of this research. One limitation involves the potential for measurement error in the self-reported survey. Even though the responding individuals consisted of well-informed and active knowledge contributors/recipients of the participating technological companies, the existence of possible biases or personal differences for knowledge sharing mechanisms and work environments cannot be discounted (e.g. organizational culture, leadership styles, the preference of communication and collaboration and so on). Furthermore, it is evident that the reward structure, technological infrastructure, content knowledge, and hardware equipment used can differ among these companies in different areas (e.g. suburban areas), countries, or even those in the same urban area offering dissimilar knowledge

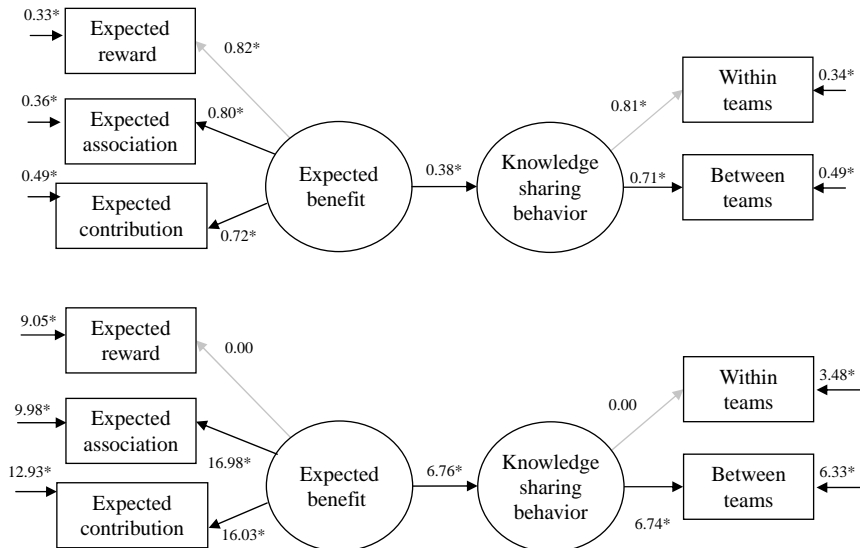


Figure 3. Analytical results of expected benefit and knowledge sharing

Note: Significant at: * $p < 0.001$ ($|t| > 3.29$)

management exchange mechanisms. Therefore, the current data collected from the particular organizations in Taiwan may not be fully representative of other scenarios.

5. Discussion, implications, and future studies

The findings of this study clearly extend prior understanding regarding knowledge sharing, especially in a high-tech industrial context under a unique national culture; unfolding that trust does play an important role on knowledge sharing within technological companies. The concept of trust as an influencing factor of organizational knowledge sharing is simple, but its mediating effect on knowledge sharing is not clear from prior research as to how it influences the effect of the employee's expected benefit in relation to knowledge sharing on the behavior of knowledge sharing. This study identifies the relationship between employee's expected benefit in relation to knowledge sharing and knowledge sharing behavior by providing evidence to show that trust plays a mediating role. Thus, the present study contributes to this field by offering a deeper understanding of the mediate effect of trust on employee expected benefit for the purpose of knowledge exchange behavior within teams and among teams. These findings have important implications both at theoretical as well as managerial level.

On the theoretical level, this study provides empirical evidence showing that trust plays an important part on organizational knowledge sharing behavior in two ways:

- (1) enhancing the development of trust within organizations; and
- (2) employees' perception of personal benefit through sharing knowledge.

The present study emphasises more the importance of extrinsic motivational factors (i.e. pay, promotion, etc.) as well as intrinsic motivational factors (i.e. enjoyment of helping others, improved organizational capability, etc.) in understanding the dynamics of knowledge sharing in a high-tech context. As Hansen *et al.* (1999) pointed out, incentives, whether tangible or intangible, are an integral part of the knowledge management process. Because incentives can be used to motivate employee to share knowledge they otherwise might keep to themselves.

The relationship among reward (i.e. expected benefit), trust and knowledge sharing behavior have been largely ignored and unexplored in past researches (Bartol and Srivastava, 2002). The finding of this study supplies evidence supports the correlation of employee expected benefit and knowledge sharing indirectly. The finding indicates that trust plays an important role in organizational knowledge sharing. In fact, a number of studies have identified trust as a precondition of knowledge sharing (Yoon and Wang, 2011; Chiang *et al.*, 2011), or as a mediator of the relationship of other factors (e.g. social capital, information technology system) and knowledge sharing (Abdullah *et al.*, 2011; Ho *et al.*, 2012). Previous studies have also tried to understand reward, trust and knowledge sharing behaviors from a different angle. Among the few evidence concerning reward, trust and knowledge sharing, Reychar and Sharkie (2010), for example, contended that perceptions of trust in management, psychological support, management values and rewards were strong antecedents of employee contribution of their intellectual capital in a non-profit setting. Moreover, Adel *et al.* (2007) concluded that interpersonal trust, communication between staff, information systems, rewards and organization structure are positively related to knowledge sharing in organizations. These evidences demonstrate a number of factors (including

trust and reward system) are antecedents of knowledge sharing, without their order of importance in terms of the degree of influential effect on knowledge sharing.

In addition, past researchers have different views concerning the relationship among reward, trust and knowledge sharing. For example, Bartol and Srivastava (2002) argued that employee contribution of knowledge sharing, especially in an informal setting, is primarily based on the premise of social exchange. Particularly, trust is a major facilitator of the process of social exchange of knowledge, and reward simply aids the relationship between trust and knowledge sharing. However, our finding indicates that reward alone has a direct and significant effect on knowledge sharing in a high-tech context. When trust comes into the middle of reward and knowledge sharing, reward loses its direct influence on knowledge sharing, which means trust aids the relationship between reward and knowledge sharing. Similar argument are found in Pinnington *et al.*'s (2009) work in which they argued knowledge sharing in a highly competitive work environment was primarily accomplished through trust in work relationships, and individual reward was seen as lower priority. Zhang and Sundaresan's (2010) examined the relationship among knowledge providers' best signalling strategies, organization's optimal designs of reward structures, and trust. They found that an organization's proper reward structure and information technology support can improve the development of trust so as to increase knowledge transfer. Kankanhalli *et al.* (2005) suggested that contextual factors, such as generalized trust, moderate the impact of codification effort, reciprocity, and organizational reward on online knowledge sharing behaviors in organizations. They also argued that extrinsic benefits, such as monetary or non-monetary organizational reward, impact knowledge sharing contingent on particular contextual factors whereas the effects of intrinsic benefits, such as knowledge self-efficacy and enjoyment in helping others on knowledge sharing, are not moderated by contextual factors, which is partially in line with the finding of the present study.

Practically, for managers promoting knowledge sharing, this paper emphasises the need to foster a trusting culture as indicated in recent studies (Kristen *et al.*, 2004) that trust is the basis of a highly cooperative work environment, such as a high-tech environment in a developing country, which is conducive to knowledge sharing. Acknowledging trust's central role in knowledge sharing process is vital. It is evident that trust is the most critical prerequisite for knowledge exchange (Snowden, 2000), knowledge initiatives is likely to fail without trust (Davenport and Prusak, 1998). Thus, in order to help employees overcome their unwillingness to share their knowledge, trust in others and trust in organizations as a whole have to be nurtured accordingly (Hinds and Pfeffer, 2003), which may foster a healthy context for knowledge transactions. In addition, the study identifies that proper planned benefit is key to support the development of trust at work. As Stevens (2000) contended that there unless some type of positive incentive system is in place, otherwise employees will be less likely to make extra effort to contribute relevant knowledge. The results of the present study recommends managers promoting knowledge sharing carefully consider the provision of extrinsic and intrinsic incentives contingent on knowledge sharing behavior as aids to enhance a trusting environment within organizations.

Due to the constrains of the field of companies and the national culture, the future research might provide a more comprehensive population sample or a more complete inventory of variables and extent the study in these areas. Future research should also consider different measurements for reward system, such as career and learning

opportunities, as well as knowledge sharing, such as figures for actual documents shared and other details of communication. Additionally, questions arise concerning incentives for both long-term and short-term employees. For example, which types of incentives work best to promote knowledge sharing behavior? Therefore, a study that measures employee's attitudes and performance would also help answer this question. Finally, this study provides empirical evidence showing trust is an important aspect in knowledge sharing and employee expected benefit is an important aspect in development of trust. Future research might include these aspects or could extend these aspects to examine other phenomena that influence organizational knowledge transactions, formal and informal. The above shortcomings may stimulate others to conduct further empirical research in this area and encourage management initiatives to promote knowledge sharing in organizations.

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