A Trust-Based Model For Knowledge Sharing In ERP Adopting Organizations

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ABSTRACT:

There has been a growing interest in examining the factors that support or hinder one's knowledge sharing behavior in the ERP adopting organizations. However, still very few studies examined them from both personal and environmental perspectives. In order to explore the knowledge sharing behaviors within the ERP adopting organizations, this study proposed a social cognitive theory (SCT)-based model that includes knowledge sharing self-efficacy and outcome expectations for personal influences, and multi-dimensional trusts for environmental influences. In order to evaluate the proposed research model, an Iranian ERP adopting company was selected which it's products cover the Iranian market as a developing country. The proposed research model was then evaluated with structural equation modeling, and confirmatory factor analysis was also applied to test if the empirical data conform to the proposed model.

Keywords: *Knowledge sharing behavior, ERP adopting organizations, Trust; Self-efficacy; Social cognitive theory*.

1. Introduction

In the knowledge-based economy, internal resources and competencies of companies have become a major focus of management literature (Bamey.,1991; Teece et al ., 1997;Wemerflet.,1984) The analysis of internal resources has transformed to a focus on intangible resources; knowledge is seen as a crucial type (Alavi et al ., 2005;Davenport et al., 1998; Drucker, 1993). However, knowledge is not symmetrically distributed within an organization. Thus, for an organization to develop competitive advantage, identifying, capturing, sharing and accumulating knowledge become crucial (Husted & Michailova.,2002). However, knowledge sharing is a test of human nature(Cabrera & Cabrera., 2002; Frenceh et al ., 1959) and accessing knowledge from colleagues and unknown others can be difficult (Constant et al., 1996). Knowledge sharing is of vital importance to organizations, enabling them to develop skills and competences, increase value, and sustain their competitive advantage. Knowledge is a firm's most Valuable resource because it embodies intangible assets, routines, and creative processes that are difficult to imitate. Considerable research has suggested that knowledge sharing is a prerequisite for developing new technologies and products. As a result, knowledge sharing within organizations very often is not successful and Managerial interventions are needed to encourage and facilitate systematic knowledge sharing (Hsu., 2006 ; Husted & Michailova .,2002).

The ability to share knowledge between units contributes significantly to the organizational performance of firms Performance can be enhanced, when people communicate information, best practices, lessons learned, experiences, insights, as well as common and uncommon sense. Individuals share knowledge through more or less intense interaction. Firms are increasingly utilizing interdisciplinary organizational structures in which employees share knowledge and expertise within and between groups in order to cope with complex tasks (Argote etal .,2001).However, transferring knowledge has proven a rather difficult challenge in practice. What makes individuals share knowledge effectively with others in organizations is a core question. Empirical research suggests that individual cooperation is crucial to knowledge sharing, (Argote et al, 2001; Szulanski, 1996). There has been a growing interest in examining the factors that support or hinder one's knowledge sharing behavior in the ERP adopting organizations. However, still very few studies examined them from both personal and environmental perspectives. In order to explore the knowledge sharing behaviors within the ERP adopting organizations, this study proposed a social cognitive theory (SCT)-based model that includes knowledge sharing self-efficacy and outcome expectations for personal influences, and multi-dimensional trusts for environmental influences. In order to evaluate the proposed research model, an Iranian ERP adopting company was selected which it's products cover the Iranian market as a developing country. The proposed research model was then evaluated with structural equation

modeling, and confirmatory factor analysis was also applied to test if the empirical data conform to the proposed model.

2. Background And Research Model

Knowledge sharing is the behavior when an individual disseminates his acquired knowledge to other members within an organization (Ryu et al., 2003). Prior research has highlighted the various factors that affect individual's willingness to share knowledge, such as costs and benefits, incentive systems, extrinsic and intrinsic motivation, organization climate, and management championship (e.g., Bock and Kim, 2002; Bock et al., 2005; Kankanhalli et al., 2005; Purvis et al., 2001; Wasko and Faraj, 2005). Therefore, we could reasonably assume that individuals' behavior for knowledge sharing will be guided by personal characteristics and the environment they are in. To explore the knowledge sharing behavior in ERP adopting organizations we draw on the SCT (Bandura, 1982, 1986, 1997) to conceptualize a research model for this study(see Figure 1) . SCT is a widely accepted model for validating individual behavior (Compeau and Higgins, 1995a). In the SCT model, personal factors, environmental influence, and behavior act as interacting determinants that will influence each other bidirectionally (Wood and Bandura, 1989). While SCT advocates the relationship of "triadic reciprocality" among the three determinants (Bandura, 1986; Wood and Bandura, 1989; Compeau and Higgins, 1995a), this study concerns with the role of personal factors and environmental influence on individual behavior.

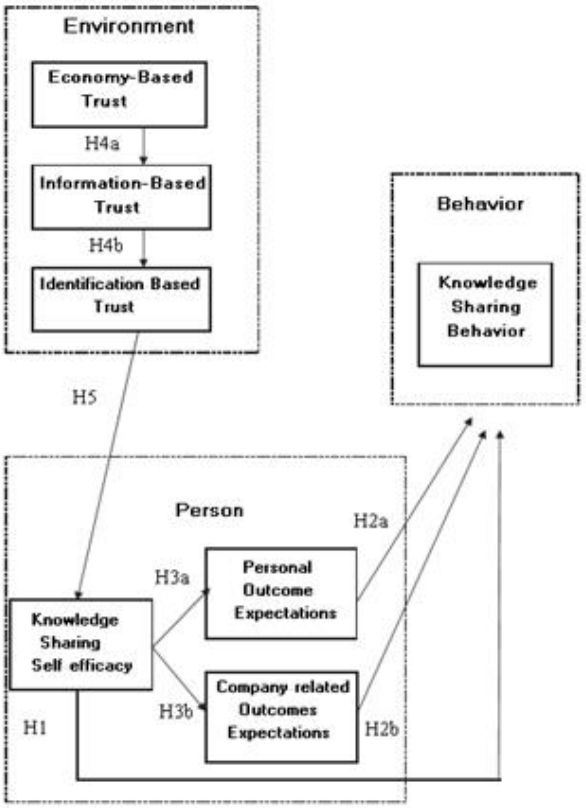

Figure 1: The Research Model

In this study, knowledge is viewed as an object that can be accessed and retrieved by ERP users in adopting organizations (Alavi and Leidner, 2001).Self-efficacy and outcome expectations are seen as predictors of personal factors since both of

them are considered as the main infuences shaping users' behavior (Bandura, 1982, 1986, 1997; Igbaria and Iivari, 1995). On the other hand, trust is treated as a major environmental factor influencing personal factors and behavior, because it may affect the elements of organizational structure (e.g., density, stability)(McEvily etal., 2003), reduce organizational complexity, and create a comprehensive organization for interpersonal interactions (Gefen,2000).

Furthermore, with trust, organizations could form their collective characteristics, such as predictability, reliability, and fairness. Based on SCT, we may reasonably assume that the organizational characteristics and organizational environment shaped by trust should have influence on personal factors and behavior.

2.1. Self-Efficacy And Knowledge Sharing

Self-efficacy is a form of self-evaluation that influences decisions about what behaviors to undertake, the amount of effort and persistence to put forth when faced with obstacles, and finally, the mastery of the behavior. In general, the perceived self-efficacy plays an important role in influencing individuals' motivation and behavior (Ban dura, 1982, 1986; Igbaria and Iivari, 1995). People who have high self-efficacy will be more likely to perform related behavior than those with low self-efficacy. Self-efficacy has been employed by many IS researchers and formed a variety of research streams. One of this research streams is focused on examining the effect of computer self-efficacy (CSE) on computer training performance (e.g., Compeau and Higgins, 1995a, 1999; Johnson and Marakas, 2000) and on IT usage (e.g., Easley et al., 2003; Venkatesh et al., 2003). Another research stream is concentrated on the construct of Internet self-efficacy (ISE). Studies in this line also address the significant relationship between ISE and Internet use (e.g., Hsu and Chiu, 2004; Lam and Lee, 2005). More recently, the concept of self-efficacy has been applied to knowledge management to validate the effect of personal efficacy belief in knowledge sharing, that is knowledge sharing self-efficacy (KSSE). SCT highlights self-efficacy, noting that our expectations of positive outcomes of a behavior will be fruitless if we doubt our capability to successfully execute the behavior. This is perhaps an important issue in knowledge sharing because complexity and knowledge barriers to the exchange of existing knowledge among ERP users in adopting organizations may be construed as self-efficacy deficits. SCT contends that the desire to share knowledge is not sufficient to carry it out. A knowledge producer must also have the perceived capabilities to complete it. These capabilities include authoring knowledge content, codifying knowledge into "knowledge objects" by adding context, contributing personal knowledge to the organizational database, sharing personal knowledge in formal interaction with or across teams or work units, or in informal interactions among individuals. Several researchers have employed KSSE to examine its effect on knowledge sharing intention. For instance, Bock and Kim (2002) propose that self-efficacy could be treated as a major factor of self-motivational source for knowledge sharing.

Their findings reveal that the individual's judgment of his contribution to organization performance has positive influence on knowledge sharing. Kankanhalli et al. (2005) treated KSSE as a factor of intrinsic benefits and combined it with other variables to examine their effect on knowledge contribution behavior. The results show that self-efficacy is positively related to knowledge contribution while using electronic knowledge repositories. Based on studies cited above, we recognize that self-efficacy is a critical determinant for users' behavior in various IT use contexts. With it, ERP users are connected by a common system and form social networks (Ba, 2001) to provide access to other users for combining and exchanging knowledge (Nahapiet and Ghoshal, 1998). Therefore, this study introduces the concept of KSSE as a behavioral control variable to deal with the situations in which people face the challenge of combining and exchanging knowledge among individuals in the ERP adopting organizations. This recognition leads to the following hypothesis.

H1. *ERP Users' KSSE has a positive effect on their knowledge sharing behavior.*

2.2. Outcome Expectations And Knowledge Sharing

Based on the SCT, outcome expectations refer to the expected consequence of one's own behavior (Bandura, 1997; Compeau and Higgins, 1995b). Outcome expecta-tions consist of three major forms: physical effects (e.g., pleasure, pain, discomfort), social effects (e.g., social recognition, monetary rewards, power, applause) and self-evaluation effects (e.g., self-satisfaction, self-devaluation) (Bandura, 1997). Within each form, the positive expectations can be seen as incentives and thus human behavior can be regulated by these different forms of effects (Bandura, 1997). An individual's behavior may lead to positive outcome, because individuals will behave with rational self-interest as asserted in the social economic exchange theory (Bock and Kim, 2002). This is also why knowledge sharing will take place when rewards are greater than cost (Constant et al., 1994). Other researchers (Nelson and Cooprider, 1996; Bock and Kim, 2002; Ryu et al., 2003; Kankanhalli et al., 2005) also provide a reasonable explanation on the importance of incentive systems for successful knowledge management.Compeau and Higgins (1995a, 1999) discussed the role of individuals' belief and reactions about their ability to competently use computers in the

determination of computer use. They identified two types of outcome expectations concerning individuals' computer use: performance-related outcome expectations and personal outcome expectations. Performance-related outcome expectations are associated with improvements in job performance associated with using computers. Personal outcome expectations relate to change in image or status or to rewards, such as promotions, raises, or praise. Their study shows that both types of outcome expectations have a significant effect on computer usage.

As a matter of fact, the two types of outcome expectations advocated by Compeau and Higgins emphasize the individuals' benefits derived from people's actions. Similarly, previous studies have also provided empirical support suggesting that individuals' benefits (e.g., expected association, organization reward, enjoyment in helping others) may act as motivators of knowledge sharing (Bock and Kim, 2002; Kankanhalli et al., 2005).

Knowledge embedded in the ERP systems is considered as organizational good collectively owned and maintained by the organizations (Lee and Cole, 2003;Wasko and Faraj, 2000). The study of Wasko and Faraj (2000) also provide empirical evidence indicating that knowledge sharing in the ERP adopting organizations is motivated primarily by organizational interest and moral obligation rather than by narrow self-interest.

By synthesizing above arguments, we may conclude that User's expected outcomes through knowledge sharing can be divided into two dimensions: personal and company-related expectations. Personal outcome expectations focus on individuals' expectations, such as gaining more recognition and respect, making more friends, or getting better cooperation in return, whereas company-related outcome expectations are defined as an individual's expectations about the impact of his knowledge sharing on organization, such as achieving the goals, enriching knowledge base of organization, or continuing to operate organization. Therefore,

H2a. *Personal outcome expectations have a positive effect on knowledge sharing behavior.*

H2b. *Company-related outcome expectations have a positive effect on knowledge sharing behavior.*

According to Bandura (1997), outcome results from actions and may be anticipated by people while judging how well they can perform in a given situation. In other words, people will judge their expected outcomes before taking actions. Thus, this relationship bridges the belief of personal efficacy and the outcome expectations. While positive outcomes could fortify individual's behavior, for those who doubt their capability or lack the required skill to perform might view their activities or actions as meaningless and futile (Bandura, 1997; Compeau and Higgins, 1999). Moreover, if people believe they will be able to perform action with great skill in the given context (e.g., using ERP system), they may be more likely to expect positive outcomes than those who doubt their capabilities (Compeau and Higgins, 1999).

Prior IS studies have provided strong supports for the significant relationship between self-efficacy and outcome expectations. For instance, Compeau and Higgins (1995a,b, 1999) showed that CSE exerts a significant positive influence on performance-related outcome expectations and personal outcome expectations. Johnson and Marakas (2000) found that CSE has a significant effect on performance, which in turn has a significant influence on outcome expectancy. This linkage of self-efficacy to outcome expectations seems to be applicable to KSSE to outcome expectations. Therefore,

H3a. *ERP users' KSSE has a positive effect on their personal outcome expectations.*

H3b. *ERP users' KSSE has a positive effect on their Company-related outcome expectations.*

2.3. Trust Development In ERP Adopting Organizations

Trust is important to interpersonal and commercial relationships. This is evidenced by the plethora of research efforts in various disciplines such as social psychology (Lindskold, 1978), sociology (Strub and Priest, 1976), economics (Dasgupta, 1988) and marketing (Moorman et al., 1992). There are literally dozens of definitions of trust. Here, we adopt Mayer et al.,s (1995) definition of trust: "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party".

Many studies have recognized that trust is a multi-dimensional construct and have also examined the types of trust; most of them were conducted in organizational settings or electronic commerce (Abrams et al., 2003; Corritore, 2003; Gefen et al., 2003; McAllister, 1995; Parkhe, 1998; Paul and McDaniel, 2004; Ratnasingam, 2005; Zucker, 1986). From the perspective of professional ERP adopting organizations, the willingness of individuals to share with others the knowledge they have acquired or created are major concerns (Bock et al., 2005), and trust has been seen as a valuable means to enhance knowledge sharing (McEvily et al., 2003). Hence, developing a comprehensive framework of trust for knowledge sharing in ERP adopting organizations becomes an important issue to be addressed.Trust has been identified in different forms, accompanied with different relationships, and has a bandwidth that varies in both scope and degree (Rousseau et al., 1998; Paul and McDaniel, 2004). Even though the different types of trust may be separable and vary independently with each other, they are nonetheless related to each other (Mayer et al., 1995). Moreover, many scholars suggest that trust is developed through repeated interactions with time or through social network that people established (Ring and Van de Ven, 1992; Zaheer et al., 1998; Ba, 2001). Siau and Shen (2003) propose that cultivating trust in electronic commerce is a dynamic and time-consuming process that involves initial trust formation and repeated trials until a firm loyalty is established. Many researchers explore the relationship of different type of trust, and the trust stage is discussed commonly, especially in how trust is changed with the passage of time. Jarvenpaa and Leidner (1999) posit that a person in organization will go through two stages of trust in the potential interactions with other users' initial stage and mature stage. Paul and McDaniel (2004) argue that different types of trust may evolve into another deeper type of trusts. Other researchers have proposed similar ideas, with the initial creation of trust paving the way for the equivalent of relational trust development (Rousseau et al., 1988; Lewicki and Bunker, 1996). Following Boon and Holmes (1991), Shapiro et al. (1992), and Lewicki and Bunker (1995, 1996), several researchers (Ba, 2001; Lander et al., 2004; Panteli and Sockalingam, 2005) argue that trust is dynamic and distinct in character at different stages of any relationship, whether professional or personal. They propose that an awareness of trust development can help better understand how professional relationships change and evolve over time. Trust is not only time-consuming to engender, but also fragile and easily destroyed, therefore, continuous trust development deserves special attention (Siau and Shen, 2003). Consequently, Panteli and Sockalingam (2005) suggest three stages of trust that are linked in a sequential iteration and the achievement of trust at one level enables the development of trust at the next level. With reference to prior literature related to trust development, we further expand trust into three stages as economy-based, information-based and identification-based trust. Trust in ERP adopting organizations is built upon obtainable economic benefit, mature IT infrastructure, and sound managerial mechanism, which will attract users to participate and trust the organization. In other words, trust in the ERP adopting organizations is built upon obtainable economic benefit at the beginning stage. As the relationship develops, the economy-based trust will move to knowledge-based trust, eventually identification-based trust. The stage of economy-based trust is also termed calculative process trust (Luo and Najdawi, 2004), deterrence-based trust (Doney and Cannon, 1997; Ba, 2001; Lander et al., 2004), and calculus-based trust (Lewicki and Bunker, 1995, 1996). It is based on economic benefit and fear of punishment for the violation of trust (Panteli and Sockalingam, 2005), Therefore, it can be shaped by rational assessments of the costs and benefits due to a trustee's cheating or cooperating in the relationship (Gefen et al., 2003). According to Ratnasingam (2005), economic benefits refer to something derived from direct savings in costs, in time derived from technical efficiencies and security solutions, and in something derived from a calculative process via a cost benefit analysis.The stage of information-based trust is also termed knowledge-based trust (Lander et al., 2004; Panteli and Sockalingam, 2005).It is based on the familiarity of the other party that their behavior is predictable and the sense of uncertainty and risk is reduced (Ba, 2001). Information-based trust relies on information rather than fear of punishment or rewards of being trustworthy (Lander et al., 2004). According to Ratnasingam and Pavlou (2002), information-based trust arises among trading partners because of adherence to technical standards, security procedures,and protection mechanisms. Ratnasingam (2005) also indicates that information-based trust refers to the subjective probability that the underlying technology infrastructure and control mechanisms are capable of facilitating transactions according to its confident expectations.The identification-based trust is also termed transference-based trust (Ba, 2001). Trust exists because the parties understand and appreciate the other's wants, and this mutual understanding is developed to the point that each can effectively act for the other (Lander et al., 2004).

Identification-based trust consists of the emotional bonds between individuals. People make emotional investments in trust relationships, express genuine care and concern for the welfare of partners, believe in the intrinsic virtue of such relationships, and believe that these sentiments are reciprocal (McAllister,1995).In such case, people have

developed strong inter-relationships and shared identify that will enable people to work together and create collective strengths (Panteli and Sockalingam, 2005). Therefore, in this study, identification-based trust is defined as users'trust due to emotional interaction among users in ERP adopting organizations.At the beginning of knowledge sharing relationship in ERP adopting organizations, newly employed users may have little experience and knowledge about other users of the ERP adopting organizations, and the network ties between new users and the experienced ones are weak. Economy-based trust can be shaped by assessing the costs and benefits resulted from the cooperation relationship. As the relationship developed through interactions over time, new users get more information about involved users via their experience(Ba,2001; Panteli and Sockalingam,2005). Thus, process of trust development moves to the next level-information-based trust.As interactions increase over time, the users will perceive the trustworthy of other people (Gabarro, 1978; Tsai and Ghoshal, 1998), which in turn may enhance social network density for ERP adopting organizations(McEvilyetal.,2003). Accordingly,the identification-based trust may facilitate the sharing of valuable tacit knowledge and enhance the possibility of new knowledge creation (Panteli and Sockalingam, 2005). As a result, we may conclude that movement of trust will happen with increasing interactions among ERP users in the organizations, that is, the former trust has casual relationship with the latter trust. Therefore,

H4a. *ERP user's perception of economy-based trust has a positive effect on information-based trust.*

H4b. *ERP user's perception of information-based trust has a positive effect on identification-based trust.*

As we mentioned before, trust is a feature of environment and is crucial to the ERP adopting organizations. Therefore, this study emphasizes the trust development and treats trust as an environmental factor. Comparing our research model with the SCT, trust could be viewed as an environmental factor and KSSE as a personal factor. According to the SCT, personal factor is influenced by environment factor. While trust in each stage may have influence on knowledge sharing behavior and self-efficacy, this study does not intent to validate the effect of trust in each stage on these two determinants. Rather, our aim is to conceptualize how identification-based trust affects knowledge sharing behavior and how identification-based trust impacts KSSE. Previous empirical research has also found the causal relationship between trust and self-efficacy (e.g., Cheung and Chan, 2000; Pavlou and Fygenson, 2006). Cheung and Chan (2000) use SCT and other theory to examine social-cognitive factors in donating money to charity. Pavlou and Fygenson (2006) extend the theory of planned behavior to explain the process of e-commerce adoption by consumers. They propose that trust is an antecedent of perceived behavioral control, which is a higher-order factor formed by two underlying dimensions: self-efficacy and controllability. Although only the effect of trust on controllability is examined, this study will also prove that trust influences behavior and perceived behavioral control. Therefore,

H5. *ERP user's perception of identification-based trust has a positive effect on KSSE.*

3. Research Methodology

3.1. Sample And Procedure

Population in this research consists of ICT consultant firms in Iran as a developing country. This type of firms are selected for testing the research model Because of their knowledge intensive activities and also high educated personnel.

One of top level firms named TETA Co.(Communication research and development) is selected for data gathering. TETA Co. is an ICT leading company in the market of Iran and it's products and services are in the field of telecommunication, e-business solutions (such as ERP) and NGN(next generation networks).

In order to gather data relevant to research model, 250 copies of questionnaire were sent to technical people of TETA Co and 223 copies were collected which 7 copies of them were void leaving us 183 valid copies of questionnaire. The effective response rate was 89%.

3.2. Measurement Instruments

Most of the items measuring the three stages of trust are adapted from prior related research conducted in the fields of e-commerce, and are modified to fit the knowledge sharing context. Part of the items on economy-based trust are based on the definitions of Ratnasingam (2005) and part are adapted from Gefen et al.'s (2003) items on calculative-based trust to reflect costs and benefits in adopting organization. Items on information-based trust are measured by items on privacy and security from Smith (1996) and McKnight et al. (2002). Finally, the measures for identification-based trust are adapted from items on integrity and benevolence proposed by Ridings et al.(2002), McAllister (1995) and Kanawattanachai and Yoo (2002). Items for measuring company-related outcome expectations and personal outcome expectations are adapted from Compeau and Higgins's (1999) study. Knowledge sharing behavior is measured by the frequency of knowledge transmission (sending or presenting knowledge to a potential recipient) (Davenport and Prusak, 1998). In the instructions, we explaine to the respondents what "knowledge sharing activities" are, including posting personal opinions of interest to a ERP system, uploading materials, giving critiques while uploading, and sharing information through an electronic bulletin board system. For the aforementioned measures, a Seven-point Likert scale is used, with anchors ranging from strongly disagree (1), neither agree nor disagree (4), and strongly agree (7). Items measuring the KSSE are grounded on the

de_nition of (Socialization, Externalization, Combination, and Internalization (SECI)) knowledge conversion process (Nonaka et al., 2000) as well as Compeau and Higgins's (1995a) prevalidated instrument. The measure presents a variety of confidence that may be associated with knowledge sharing behavior, such as "providing related experiences, insights or expertise", "articulating knowledge in written forms", "authoring knowledge as an article" and so on. Participants are asked to rate their confidence in their ability to perform a behavior under a variety of circumstances with anchors ranging from 0 to 100%. A pretest of the questionnaire is performed, using three experts in the IS area to assess logical consistencies, ease of understanding, question item sequence adequacy, and context fitness. Comments from them lead to several minor modifications of the wording and the question item sequence. Table 1 provides the revised questionnaire.

Table1: Summary Of Measurement Scales

Construct		Measure	Mean	SD	Loading(λ)	Reference
Economy-based trust(Cronbach's α=0.91)						Ratnasingam (2005) Gefen et al(2003)
	ET1	By using this ERP system,I will save time in getting information	5.42	1.18	0.761	
	ET2	By using this ERP system, I will save costs in getting information	5.5	1.17	0.753	
	ET3	I can get specific information from this ERP system	5.41	1.19	0.912	
	ET4	The information I get from this ERP system will help me improve my capabilities	5.48	1.24	0.757	
Information-based trust(Cronbach's α=0.87)						Smith (1996) McKnight et al.

					(2002)
	IT1	This ERP system has enough safeguards to make me feel comfortable to divulge personal information	5.66	1.06	0.801
	IT2	This ERP system protects personal information from unauthorized access	5.72	1.06	0.812
Identification-based trust(Cronbach's α= 0.94)					Ridings et al. (2002) McAllister (1995) Kanawattanachai and yoo(2002)
	DT1	I can talk freely to the ERP users about my personal issues	5.5	1.12	0.907
	DT2	If I share my problems with an ERP user, I know he/she will respond constructively and caringly	5.6	1.09	0.845
	DT3	I know most ERP users will do every thing within their capacity to help others	5.57	1.08	0.857
	DT4	I know most ERP users are honest	5.57	1.13	0.851
Personal outcome expectations(Cronbach's α=0.92)					Compeau and Higgins (1999)

		ERP users, the tie between them and me will be strengthened			
	EP3	If I share my knowledge with other ERP users, I will get better cooperation and benefits in return	5.52	1.1	0.907
Company-related outcome expectation(Cronbach's α= 0.96)					Compeau and Higgins (1999)
	EC1	My knowledge sharing would help the organization to achieve its goals or visions	5.64	1.06	0.896
	EC2	My knowledge sharing would help the organization maintain its competitive position	5.68	1.09	0.847
	EC3	My knowledge sharing would help the organization improve its processes	5.66	1.09	0.883
	EC4	My knowledge sharing would help the organization accumulate or enrich its knowledge base	5.66	1.08	0.888
	EC5	My knowledge sharing would	5.71	1.09	0.813

	providing your experiences, insights or expertise as an example?			
SE2	To share your knowledge in this ERP system, how confident are you in providing your experiences, insights or expertise by engaging in dialogue with others?	5.46	1.1	0.827
SE3	To share your knowledge in this ERP system, how confident are you in providing your ideas and perspectives to others through participating in discussion?	5.50	1.09	0.875
SE4	To share your knowledge in this ERP system, how confident are you in articulating yourself in written,verbal or symbolic forms?	5.47	1.1	0.884
SE5	To share your knowledge in this ERP system, how confident are you in authoring an article or posting a	5.50	1.1	0.864

	comments to messages or articles posted by others?				
SE7	To share your knowledge in this ERP system, how confident are you in answering questions, giving advice or providing examples to questions or inquiries from others?	5.48	1.1	0.859	
Knowledge sharing behavior(Cronbach's α= 0.92)					Davenport and Prusak (1998)
BE1	I frequently participatein knowledge sharing activities in this ERP system	5.55	1.02	0.808	
BE2	I usually spend a lot of time conducting knowledge sharing activities in this ERP system.	5.56	1.05	0.820	
BE3	When using this ERP system, I usually actively share my knowledge with others	5.52	1.08	0.871	
BE4	I usually involve myself in discussions of various topics	5.55	1.05	0.751	

Data analysis is carried out in accordance with a two-stage methodology- the measurement model and the structure model (McDonald and Ho, 2002). The first step in the data analysis is to assess the construct validity for the seven measurement elements (i.e., economy-based trust, information-based trust, identification-based trust, self efficacy, personal outcome expectations, company-related outcome expectations, and knowledge sharing behavior) with LISREL confirmatory factor analysis.

As shown in Table 1, reliability is examined using the Cronbach's alpha values. All of these are above 0.85, representing a commonly acceptable level for exploratory research. Convergent validity of the resulting measures is verified by the three criteria suggested by Fornell and Larcker (1981): (1) all indicator loadings (l) should be significant and exceed 0.7, and (2) construct reliabilities should exceed 0.8. As shown in Table 1, all λ are higher than 0.70 benchmark.

4.2. Structural Model

The hypotheses, the paths between the items, and the latent construct are examined with the structural model. The fit indices are within accepted thresholds. For models with good fit, chi-square normalized by degrees of freedom (χ^2/df) should not exceed five, non-normed fit index (NNFI), comparative fit index (CFI), and goodness-of-fit index (GFI) should exceed 0.9 (Bentler, 1983, 1988; Browne and Cudeck, 1993). The commonly accepted value of root mean square error of approximation (RMSEA) should not exceed 0.05 (Browne and Cudeck, 1993), and mediocre value should be lower than 0.08 (Jo ¨ reskog and So ¨ rbom, 1993; Dudgeon, 2004). For the current structural model, (χ^2/df) is 2.96 (χ^2 = 734.39, df = 248), NNFI was 0.91, CFI is 0.94, and RMSEA is 0.045. While GFI is 0.90. The path significance of each hypothesized association in the research model and the variance explained (R2) by each path are examined. Fig. 2 shows the standardized LISREL path coefficients. Knowledge sharing behavior is predicted by KSSE (β= 0.35, t value = 5.15), thus hypothesis 1 is supported. This study provides empirical evidence to support that self-efficacy is a significant predictor of knowledge sharing behavior. This result is in line with several prior studies demonstrating the influence ofself-efficacy on knowledge sharing behavior(Bock andKim, 2002; Kankanhalli et al., 2005) and IT use behavior (e.g., Compeau and Higgins, 1995a, 1999; Easley et al.,2003; Hsu and Chiu, 2004).

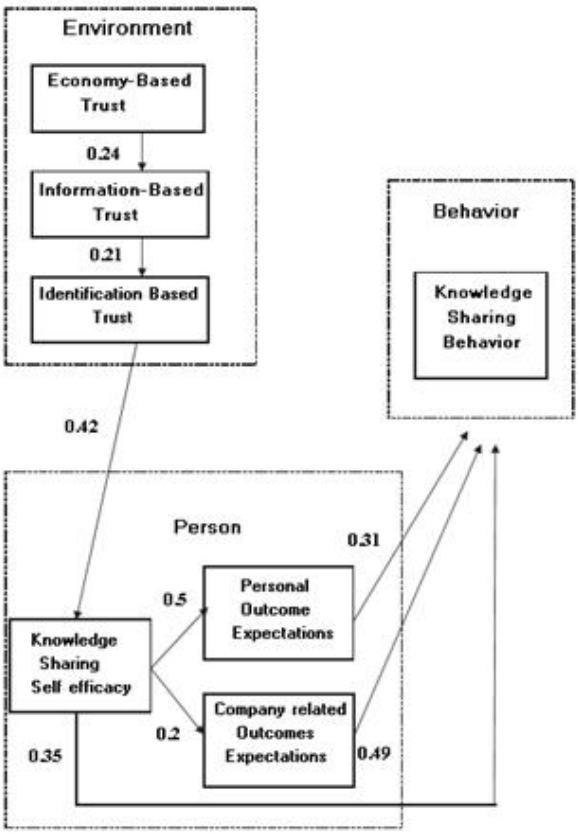

Figure 2: SEM Analysis Of Research Model

Knowledge sharing behavior is also predicted by personal outcome expectations (β= 0.31, t value = 5.11), and Hypothesis 2a2 is supported. However, the path between company-related outcome expectation and knowledge sharing behavior is insignificant (β= 0.49, t value = 7.94). Hence, Hypothesis 2b is supported.Besides, KSSE positively influence personal outcome expectations (β= 0.5, t value = 7.92) and company-related outcome expectation (β = 0.2, t value =3.30).Thus, Hypothesis 3a and b are both supported. These results confirm the relationship between self-efficacy and outcome expectations in the SCT (Bandura, 1986), which posits that self-efficacy judgment will influence outcome expectation because such expected outcomes are derived from the judgment about how well they can perform necessary activities. In the trust dimension, economy-based trust (β = 0.24, t value = 2.15) has strong effects on information-based trust, and information-based trust (β = 0.21, t value = 3.0) also has strong effects on identification-based trust. Thus, Hypothesis 4a and b are both supported. Our findings show that economy-based trust has strong effects on information-based trust, which in turn has positive relationship with identification-based trust. These findings imply that trust is a complex concept in ERP systems and provide insight into the trust building processes.

Identification-based trust exhibits a significant effect on KSSE (β = 0.42, t value = 6.45). Thus, Hypothesis 5 is supported. This finding generally supports the contention of SCT (Bandura, 1986, 1997); individual's characteristic and behavior will be affected by the environments they exist. The findings are consistent with Cheung and Chan's (2000) study.

5. Conclusion

SCT has been widely used and validated for human behavior in numerous contexts, but it still has not been applied to knowledge sharing. This study aims to shed light on the knowledge sharing behavior in ERP adopting organizations and is the first study that applied SCT-based model to investigate the determinants of knowledge sharing behavior. This study validates the proposed research model and the findings presented herein respond to the research questions. First of all, the results indicate that self-efficacy has both direct and indirect effects on knowledge sharing behavior, implying that self-efficacy plays a critical role in guiding individuals' behavior. From the practitioners' standpoint, management of ERP adopting organizations should provide some strategies (e.g., training programs, support mechanism and many others) to increase users' self-efficacy so that people would believe they will be able to share their knowledge in the ERP systems.

Second, our findings show that personal outcome expectations have significant influence on knowledge sharing behavior. This finding is consistent with Bock and Kim_s study (2002). They argue that if individuals believe they could improve relationships with others by offering their knowledge, they would develop a more positive attitude toward knowledge sharing. The greater the anticipated reciprocal relationships are, the more favorable the attitude toward knowledge sharing will be (Bock et al., 2005). Therefore, users who think knowledge sharing would increase the scope and depth of associations among ERP users tend to share knowledge with others. Moreover, it may be necessary for managers of ERP adopting organizations to offer reward mechanisms (e.g., award of best knowledge contributor, ranking of knowledge sharing) to raise individuals' positive personal expectations. Once individuals in the ERP adopting organizations perceive the future reward, they would be likely to contribute knowledge with others.

Third, our findings suggest that company-relatedoutcome expectations have significant influence on knowledge sharing behavior. A possible explanation for this finding is that ERP aopting organizations have formal and power rules, routines and procedures to guide the users' knowledge sharing behaviors as asserted in the institutional theory (Purvis et al., 2001).

Fourth, our findings reveal that economy-based trust and information-based trust has to be established first, and then develop identification-based trust. Only by forming these kinds of trusts, mutual trust will be formed. Trust is not a single or unidimensional concept and develops gradually as the parties move from one stage to another in an organization context (Boon and Holmes, 1991; Lander et al., 2004; Panteli and Sockalingam, 2005). Several researchers (Ba, 2001; Luo and Najdawi, 2004) also argue that trust building stages exist in online environment.

From a practical perspective, managers should assist ERP users to move from economy-based trust to information-based trust.

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