Perceptions of senior managers toward knowledge-sharing behaviour

Abstract (summary)
Senior managers have shown an increasing interest in understanding and encouraging knowledge-sharing behaviour in their organizations. However, very few empirical studies have examined senior managers' perceptions of knowledge-sharing behaviour. This study used Ajzen's theory of planned behaviour (TPB) to develop and test a research model to assess the factors that influence encouragement of knowledge-sharing intention and behaviour by senior managers. The data from a survey of senior managers in Taiwan were used empirically to test the proposed research model. Moreover, confirmatory factor analysis (CFA) was conducted to examine the reliability and validity of the measurement model, and the structural equation modelling (SEM) technique was used to evaluate the research model. The analytical results showed that the research model fitted the data well and the main determinants of enterprise knowledge-sharing behaviour were the encouraging intentions of senior managers. Additionally, senior managers' attitudes, subjective norms and perceived behavioural control were found to positively influence intentions to encourage knowledge sharing. Finally, research and practical implications were suggested.

Full text
Headnote
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Abstract Senior managers have shown an increasing interest in understanding and encouraging knowledge-sharing behaviour in their organizations. However, very few empirical studies have examined
senior managers' perceptions of knowledge-sharing behaviour. This study used Ajzen's theory of planned behaviour (TPB) to develop and test a research model to assess the factors that influence encouragement of knowledge-sharing intention and behaviour by senior managers. The data from a survey of senior managers in Taiwan were used empirically to test the proposed research model. Moreover, confirmatory factor analysis (CFA) was conducted to examine the reliability and validity of the measurement model, and the structural equation modelling (SEM) technique was used to evaluate the research model. The analytical results showed that the research model fitted the data well and the main determinants of enterprise knowledge-sharing behaviour were the encouraging intentions of senior managers. Additionally, senior managers' attitudes, subjective norms and perceived behavioural control were found to positively influence intentions to encourage knowledge sharing. Finally, research and practical implications were suggested.

Introduction

In the present business environment, competitive advantage increasingly requires organizational members to share knowledge with others (Nevis et al., 1995; Davenport and Prusak, 1998; Drucker, 1998; Chow et al., 2000). Many organizations have concluded that effective knowledge sharing is the crucial way to leverage their core competencies and gain competitive advantage (Gold et al., 2001). In this view, knowledge sharing becomes crucial for senior managers, because they are key decision makers encouraging a culture of knowledge sharing.

Recent studies have expressed considerable interest in knowledge-sharing practices and organizational factors. For example, Macneil (2001) have suggested that senior managers could contribute significantly to the development of core competencies and skills through their role as facilitators of organization learning in the workplace, specifically by establishing a knowledge-sharing environment in which employees are encouraged to apply their explicit and tacit knowledge to problem-solving situations. Furthermore, Hislop (2003) investigated the impact of organizational commitment on the attitudes to knowledge sharing and related behaviours. Although such studies have provided much useful information on the relationship between organizational factors and knowledge-sharing behaviour, senior managers' perceptions toward knowledge sharing in organizations have been rarely examined empirically.

The aims of this study are to assess the influence of the perceptions of senior managers on intentions to encourage knowledge sharing and to develop a research model based on the theory of planned behaviour (TPB) (Ajzen, 1991). The TPB has been found useful in predicting a wide range of behaviours, and is used widely to predict and explain behavioural intention and actual behaviour in social psychology (Chang, 1998; Fukukawa, 2002; Millar and Shevlin, 2003). Recently, Ryu et al. (2003) applied the TPB model and examined the factors that affected knowledge-sharing behaviour by groups of professionals, they found that professionals’ attitudes and subjective norms strongly affect their intentions to share knowledge. However, the TPB has only rarely been applied to studies senior managers' perceptions of knowledge-sharing behaviour.

This study examines the influence of the perceptions of senior managers on intentions to encourage knowledge sharing and to develop a research model based on the theory of planned behaviour (TPB) (Ajzen, 1991). The research model and hypothesized relationships are empirically tested using the structural equation modelling (SEM) approach, supported by LISREL 8.3 software. Moreover, the current study contributes to knowledge management research by further clarifying the relationship between perceptions of senior managers toward knowledge sharing and their intentions to encourage knowledge sharing. At a minimum, the findings of this study provide a theoretical basis and empirical evidence of likely directions for predicting and explaining knowledge-sharing intentions by senior managers. From a managerial perspective, the findings of this study may improve understanding and practice of the
organizational management of knowledge sharing. Specifically, this study identified several factors essential to prompt knowledge-sharing intentions by senior managers, and discussed the implications of these factors for formulating organizational strategies that encourage and foster knowledge sharing.

Literature review

Knowledge sharing

Knowledge management was introduced to the business world to help organizations create, share, and use knowledge effectively. Nonaka and Konno (1998) indicated that knowledge management could be defined as a method for simplifying and improving the process of sharing, distributing, creating, and understanding company knowledge. Knowledge management focuses on systematic and innovative methods, practices, and tools for managing the generation, acquisition, exchange, protection, distribution, and utilization of knowledge, intellectual capital, and intangible assets (Montana, 2000).

Knowledge that resides within individuals often is referred to as tacit knowledge. Being inferred from individual action, as well as being hard to verbalize and codify, tacit knowledge is acquired through imitation and practices. In contrast, explicit knowledge can be expressed in codified form and therefore can be diffused throughout an organization in the form of rules and guidelines (Nonaka, 1994). Knowledge is also stored within organizations in the form of common organizational practices and routines. Organizational knowledge is contingent upon the ability to institutionalise individual-based knowledge with the intention of making it available to other organizational members (Szulanski, 1996). Moreover, previous knowledge management research has indicated that information technology often can be an important facilitator of knowledge sharing, such as Internet, intranet, software agents, knowledge bases, and communities of practices (Song, 2002).

Recently, researchers and practitioners increasingly have acknowledged that the success of knowledge-sharing initiatives fundamentally depends on the existence of senior managers promoting knowledge-sharing environments (Gupta and Govindarajan, 2000; Macneil, 2001; Hislop, 2003). Furthermore, Stoddart (2001) identified several essential factors in launching a successful knowledge-sharing strategy, namely that the strategy must fit organization needs, and also must match organization strategic objectives. The key challenge is to transform tacit knowledge into usable information that can be shared to stimulate innovation and create new products and services. To accomplish this, senior managers must change their attitudes toward sharing information and knowledge. However, empirical studies on perceptions of senior managers regarding knowledge-sharing behaviour have not yet been conducted. Consequently, this study focused on senior managers' perceptions as an important antecedent to establishment of organizational knowledge-sharing environment.

Theory of planned behaviour

The theory of reasoned action (TRA) proposed by Ajzen and Fishbein (1980), and more recently extended TPB (Ajzen, 1991) have been used over the past two decades to examine various behavioural intentions and behaviours. The TRA (Ajzen and Fishbein, 1980) assumes that behaviour is determined by the individual intention to perform, or not to perform a given behaviour or otherwise. Meanwhile, intention is determined by the two independent variables, including attitudes and subjective norms. The TPB extends from the TRA by incorporating an additional construct namely perceived behavioural control.

Within Ajzen's theory, attitude toward behaviour "refers to the degree to which a person has a favourable or unfavourable evaluation appraisal of the behaviour in question" (Ajzen, 1991, p. 188). For regarding
attitude toward a given behaviour, behavioural beliefs describe subjective probability that the behaviour in question would result in a particular outcome, and evaluations describe the implicit valuation or payoff that an individual associates with the outcome. Furthermore, subjective norms "refer to the perceived social pressure to perform or not to perform the behaviour" (Ajzen, 1991, p. 188). For subjective norms, the normative beliefs pertaining to individual perceptions of how referent groups view the behaviour and evaluations generally were expressed as the individual motivation to comply with these referent groups. Perceived behavioural control measures individual perceptions of the ease or difficulty of performing behaviour (Ajzen, 1991, p. 188). For perceived behavioural control, control beliefs would include individual perceptions regarding the possession of the necessary skills, resources or opportunities to successfully perform the activity. Meanwhile, the evaluations, commonly referred to as facilitation, would indicate the importance of each skill, resource or opportunity to being successful.

TPB has been used extensively to predict and explain behavioural intention and actual behaviour in social psychology (Chang, 1998; Fukukawa, 2002; Millar and Shevlin, 2003), marketing (Shim et al., 2001), and the adoption information systems (Taylor and Todd, 1995; Harrison et al., 1997; Liao et al., 1999). In the knowledge-sharing area, Ryu et al. (2003) employed the TPB has been to predict belief factors that affect knowledge-sharing behaviour of groups of professionals. The explanatory power of TPB makes it a useful model for understanding senior managers’ encouragement of knowledge-sharing behaviour in organizations. For example, Ryu et al. (2003) demonstrated professionals' knowledge-sharing behaviour is affected by their attitudes, subject norms, and perceived behavioural control. Therefore, in this study the research model based on Ajzen's TPB suggests that encouraging knowledge-sharing intentions of senior managers affects actual company knowledge-sharing behaviour, and senior managers' intentions to encourage knowledge sharing is jointly determined by their attitudes, subject norms, and perceived behavioural control.

Research model and hypotheses

This study focused on senior managers because they could contribute significantly to establishing a knowledge-sharing environment. Senior managers who are effective facilitators utilize their own learning and interpersonal skills to encourage learning opportunities through knowledge sharing in their organizations (Macneil, 2001). This study was limited the behavioural preferences of these managers because of the desire to focus on the role of individual actors within organizations.

Research has demonstrated that TPB can effectively model and explain organizational behaviours (Kurland, 1995; Chang, 1998; Santhanam, 2002; Millar and Shevlin, 2003). This study attempts to apply TPB to predict and explain organizational knowledge-sharing behaviour. Therefore, this investigation examined the extent to which TPB can predict knowledge-sharing behaviour, and whether the effect of values on behaviour is mediated by the more immediate determinants (attitudes, subjective norms, perceived behavioural control, and intentions) of TPB. Figure 1 show the suggested research model for this study, which is based on TPB and knowledge-sharing concepts.

According to TPB, higher behavioural intention also exhibits stronger behaviour decision-making studying behaviour in an organizational context (Chang, 1998; Santhanam, 2002; Millar and Shevlin, 2003). In this study, intentions to encourage knowledge sharing refer to the belief of senior managers their company will promote knowledge-sharing actions. Previous research suggests that senior managers are important in the development and promotion of organizational culture (Macneil, 2001). Such opinions may suggest a positive relationship between senior managers' behavioural intentions and actual company behaviour in a knowledge-sharing context. Consequently, this study investigates the following hypothesis:
H1. Senior managers' intentions to encourage knowledge sharing will positively affect corporate knowledge-sharing behaviour.

Attitudes toward knowledge sharing

In the TPB, attitude factors have been tested and shown to be significant predictors of organizational behavioural intentions. For example, Chang (1998) argued that attitude toward moral behaviour significantly influences behavioural intentions. Moreover, Bock and Kim (2002) have investigated the positive effect of attitudes toward knowledge sharing on the knowledge-sharing intentions. More recently, in individual's professional groups, physician attitudes toward knowledge sharing have affected knowledge-sharing intentions (Ryu et al., 2003).

In this study, attitudes toward knowledge sharing refer to senior managers' positive or negative evaluations of encouraging knowledge-sharing behaviour. Effective knowledge networks allow organizations to increase efficiency, reduce training costs, and reduce risks due to uncertainty (Song, 2002). Consequently, senior managers tend to have positive intentions to encouraging knowledge-sharing practices. Based on these assertions regarding senior managers' attitudes toward knowledge sharing and their intention to encourage knowledge sharing, the following hypothesis was formulated:

H2. Senior managers' attitudes toward knowledge sharing will positively affect intentions to encourage knowledge sharing.

Subjective norms about knowledge sharing

According to TPB, the antecedent most closely related to social pressure is named the "subjective norm." Subjective norm is often measured directly by asking respondents to indicate whether "important others" (that is, self-selected referents) would approve or disapprove of their performing a particular behaviour (Ajzen, 1991). Studies using TPB have often found subjective norms significantly impact in predicting behavioural intentions than the other factors of the models (Kurland, 1995; Chang, 1998). For example, Ajzen and Fishbein (1980) proposed that the significance of the factors in their model would vary with the behavioural intentions tested and the subgroup or population investigated. Chang (1998) found that subjective norm significantly affected moral behavioural intention. Ryu et al., (2003) indicated that individual professional groups, physician subject norms regarding knowledge sharing have affected knowledge-sharing intentions.

In this study, subject norms about knowledge sharing refer to the social pressure created by senior managers to encourage or discourage knowledge-sharing behaviour. Senior managers were likely to be influenced in deciding whether to encourage knowledge-sharing behaviour by peer opinions or suggestions. Therefore, this study formulated the following hypothesis:

H3. Senior managers' subjective norms regarding knowledge sharing will positively affect intentions to encourage knowledge sharing.

Perceived behavioural control

Perceived behavioural control factors are individual dispositional factors and include the amount of
information a person has, along with the skills, abilities, emotions, and compulsions of that person concerning a specific behaviour (Ajzen, 1991). Taylor and Todd (1995) indicated that perceived behavioural control (self-efficacy, resource facilitating conditions, and technology facilitating conditions) significantly affected technology usage intentions. Moreover, Chang (1998) proposed that perceived behavioural control significantly influenced moral behavioural intention. This study focused on whether senior managers had the knowledge, experience, and abilities required to promote knowledge sharing in organizations. Consequently, this study proposed the positive effect of perceived behavioural control on the encouraging knowledge-sharing intentions by the TPB, stated as a hypothesis:

H4. Senior managers' perceptions of behavioural control will positively affect intentions to encourage knowledge sharing.

Research methodology

Sampling and data collection

This study population consisted of senior managers in Taiwanese companies. Senior managers, the key decision-makers, were selected because they are likely to be familiar with multiple aspects of their organizations. The survey questionnaire was sent to 720 senior managers of organizations randomly selected from the top 2,000 firms list published by Common-Wealth magazine in 2000, which listed the 2,000 largest firms in Taiwan. The Common-Wealth magazine provided a sufficient sample of senior managers in Taiwan to permit analysis using structural equation modelling. Additionally, the final questionnaires were mailed to the 720 senior managers in the summer of 2002. A cover letter explaining the study objectives and a stamped return envelope were enclosed. Follow-up letters also were sent about three weeks after the first mailings.

A total of 154 usable questionnaires were returned, for a response rate of 21.4 per cent. The respondents came from diverse industries, with manufacturing accounting for 48.1 per cent of respondents, banking/finance/insurance for 17.5 per cent, computers/communication for 8.4 per cent, and other industries such as real estate, construction, health and transportation accounting for the remainder. Finally, 14.9 per cent of the responding companies had fewer than 100 employees, 22.7 per cent had between 100 and 500 employees, 22.8 per cent had between 500 and 1000 employees, and 39.6 per cent had over 1000 employees. The respondents themselves had senior representation, with 83 percent assuming the position of chief information officer, chief operating officer, vice president, or chief executive officer.

Measures

Table I lists the construct definitions of instruments and the related literature. In this study, items used to operationalize the constructs included in each investigated model were mainly adapted from previous studies and modified for use in knowledge-sharing context. This study measured five constructs: knowledge-sharing behaviour, intentions to encourage knowledge sharing, attitudes toward knowledge sharing, subject norms related to knowledge sharing, and perceived behavioural control of knowledge sharing. All constructs were measured using multiple items. All items were measured using a seven-point Likert-type scale (ranging from 1 = strongly disagree to 7 = strongly agree). The Appendix lists all of the survey items. Knowledge-sharing behaviour was measured using four items adapted from the work of Lee (2001). Moreover, intentions to encourage knowledge sharing were measured using a three-item scale adapted from Bock and Kim (2002). Terms such as "likely", "acceptable", and "needed" were used to assess senior managers' intentions to encourage knowledge sharing. Attitudes toward knowledge sharing
were measured using a four-item measure modified from Bock and Kim (2002) that assessed the extent to which senior managers positively evaluate the encouragement of knowledge-sharing behaviour. Additionally, subject norms related to knowledge sharing were defined as the extent to which senior managers’ perceived social pressure to encourage or discourage knowledge-sharing behaviour. Furthermore, a four-item measure taken from Ryu et al. (2003) was modified to assess subject norms about knowledge sharing. Finally, perceived behaviour control was measured using four items derived from Chau and Hu (2001), which focused on senior manager perceptions of the ease or difficulty of encouraging knowledge-sharing behaviour.

With establishing content validity, the questionnaire was refined through rigorous pre-testing. The pre-testing focused on instrument clarity, question wording and validity. During the pre-testing, five MIS doctoral students and three MIS professors were invited to comment on the questions and wordings. The comments of these eight individuals then provided a basis for revisions to the construct measures.

Statistical analysis

The research model shown in Figure 1 was analysed primarily using structural equation modelling, supported by LISREL 8.3 software. Numerous researchers have proposed a two-stage model-building process for applying structural equation modelling (Hoyle, 1995; Joreskog and Sorbom, 1996; Hair et al., 1998; Maruyama, 1998), in which the measurement models (or confirmatory factor models) were tested before testing the structural model. The measurement models specify how hypothetical constructs are measured in terms of the observed variables (such as attitudes, subject norms, perceived behavioural control, intentions, and behaviour). Furthermore, the structural models specify causal relationships among the latent variables. This study is employed to describe the causal effects and amount of unexplained variance (Anderson and Gerbing, 1988).

Data analysis and results

Measurement model

The research instrument used confirmatory factor analysis (CFA) to examine the reliability and validity. The measurement model includes 19 items describing five latent constructs: attitudes (ATT), subjective norms (SN), perceived behavioural control (PBC), intentions (IN), and behaviour (B). Table II lists the results of measurement model CFA.

Calculating the composite reliability assessed the internal consistency of the measurement model. Construct reliability can be calculated as follows: (square of the summation of the factor loadings)/(square of the summation of the factor loadings) + (summation of error variances). The interpretation of the resultant coefficient is similar to that of Cronach’s alpha, except that it also takes into account the actual factor loadings rather than assuming that each item is equally weighted in the composite load determination. From Table II, the composite reliability of all latent constructs exceeded the benchmark of 0.6 recommended by Bagozzi and Yi (1988). Because each latent construct was measured using the multi-items, construct validity tests were performed (Straub, 1989). Convergent validity refers to the extent to which multiple measures of a construct agree with one another. Bagozzi and Yi (1988) suggest that weak evidence of convergent validity exists when item factor loading is significant. Moreover, strong evidence exists when the factor loading exceeds 0.7. From Table II, the factor loading for all items
exceeds the recommended level of 0.7, and all factor loadings are statistically significant at p < 0.001.

Additionally, examination of the examining the correlations of potentially overlapping constructs was used to assess discriminant validity. The correlations of any pair of measures did not exceed the criterion (0.9 and above) suggested by Hair et al. (1998), as listed in Table III, implying that no multicollinearity exists among the various constructs.

The overall model fit was assessed in terms of six common measures: chi-square/degree of freedom, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), non-normed fit index (NNFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). The CFA indicated that the measurement model fitted the data, as listed in Table IV. All the model-fit indices exceed the respective common acceptance levels indicated by previous research (Chau and Hu, 2001), demonstrating that the measurement model exhibited a fairly good fit with the data collected.

**Structural model**

The casual structure of the hypothesized research model (see Figure 1) was tested using structural equation modelling (SEM). Model testing was based on estimating the over-all fit indices of the structural model, as listed in Table V. All the model-fit indices exceeded their respective common acceptance levels, suggesting that the model displayed fitted the data well.

The statistical significance of all of the structural parameter estimates was examined to determine the validity of the hypothesized paths. Table VI lists the structural parameter estimates and the hypothesis testing results.

The analytical results supported the research model based on Ajzen's theory of planned behaviour. H1 predicts a positive relationship between senior managers' intentions to encourage corporate knowledge-sharing behaviour. The analytical results supported H1, with a significant path coefficient of 0.41 (p < 0.05). Moreover, H2 predicts a positive relationship between senior managers' attitudes toward knowledge sharing and intentions to encourage knowledge sharing. The knowledge-sharing attitudes variable produced a path coefficient of 0.43 (p < 0.01), supporting H2. Among the independent variables, the knowledge-sharing attitudes variable was positively related to encouragement of knowledge-sharing intentions. H3 predicts a positive relationship between senior managers' subjective norms regarding knowledge sharing and intentions to encourage knowledge sharing. The analytical results supported H3. The relationship between senior managers' subjective norms for knowledge sharing and intentions to encourage knowledge sharing generated a significant path coefficient of 0.45 (p < 0.01). H4 predicts that, as senior managers' perceived behavioural control increases, encouragement of knowledge-sharing intention also increases. The analytical results supported H4, with a significant path coefficient of 0.22 (p < 0.01). Furthermore, Figure 2 schematically represents the structural model, including the path coefficients and standard errors.

**Discussion**

The main aim of this study was to assess the applicability of social psychological theories, specifically the
theory of planned behaviour, for predicting senior manager knowledge-sharing behaviour. In this study, a research model identified cognitive predictors of senior managers' intentions to encourage knowledge sharing and company knowledge-sharing behaviour. The research results indicated that the research model fitted the data well, and demonstrated that senior managers' intentions to encourage knowledge sharing would positively affect corporate knowledge-sharing behaviour. Furthermore, senior managers' encouragement of knowledge-sharing intentions was positively attitudes, subjective norms, and perceived behavioural control. These outcomes provide an important behavioural perspective on knowledge sharing and highlight the potential of TPB for organization research.

This study examining the use of senior managers' intentions to encourage knowledge sharing to predict company knowledge-sharing behaviour, obtains similar findings to previous studies (Blue et al., 2001; Bock and Kim, 2002; Millar and Shevlin, 2003). Specifically, this study finds that by actively encouraging knowledge-sharing behaviour, senior managers can establish an organizational culture of knowledge sharing. That is, unlike middle managers and other professionals, senior managers are in a strong position (owing to their autonomy, prestige, and power) to promote knowledge-sharing mechanisms in business environments and cultures.

Consistent with Ajzen's (1991) theory, senior managers' attitudes predicted intentions. Senior managers with the strongest intentions to encourage knowledge sharing also had more positive attitudes towards knowledge-sharing behaviour. This finding agrees with other studies of knowledge sharing using TPB (Bock and Kim, 2002; Ryu et al., 2003).

Subjective norms predicted knowledge-sharing intentions. This study found that senior managers with the greatest influence factors on intentions to encourage knowledge sharing also had more positive attitudes towards knowledge-sharing behaviour. This finding agrees with other studies of knowledge sharing using TPB (Bock and Kim, 2002; Ryu et al., 2003).

Although attitudes and subjective norms were major effects on intentions to encourage knowledge sharing in this sample of senior managers, perceived behavioural control also positively affected knowledge-sharing behaviour. The finding presented here, namely that perceived control influenced encouraging knowledge-sharing intentions, coincides with Ajzen's (1991) proposition. Furthermore, the result accords with the finding of previous studies on IT adoption (Taylor and Todd, 1995; Riemenschneider et al., 2003), predicting unethical behaviour (Chang, 1998), and professional knowledge-sharing behaviour (Ryu et al., 2003). Consequently, the knowledge, experiences, and abilities of senior managers impacted their promotion of organizational knowledge-sharing behaviour.

Conclusions

The literature on knowledge-sharing issues is extensive (e.g. Macneil, 2001; Bock and Kim, 2002;
Ardichvili et al., 2003; Ryu et al., 2003). However, little empirical research exists that focuses specifically on senior managers' perceptions of knowledge-sharing behaviour. This study examined the applicability of TPB in explaining senior managers' intentions to encourage knowledge sharing. The analytical results demonstrated that the research model fitted the data well, and the main determinants of actual company knowledge-sharing behaviour were the encouraging intentions of senior managers. Additionally, senior managers' attitudes, subjective norms and perceived behavioural control positively influenced intentions to encourage knowledge sharing. The implications for practitioners and researchers and the limitations of this study are discussed below.

Implications for practitioners

This study has the following implications for practitioners initiating or currently conducting knowledge-sharing activities. First, the senior manager perceptions regarding knowledge sharing examined here provide practitioners with the potentially important considerations. Notably, senior manager facilitation of knowledge-sharing intentions should address their positive attitudes, subjective norms and perceived behavioural control. That is, senior manager perceptions are an important antecedent to establishing an organizational knowledge-sharing culture. Second, a number of studies indicated that it is increasingly important for organizations to incorporate knowledge-sharing environment into corporate strategy (Bartol and Srivastava, 2002; Ardichvili et al., 2003). Furthermore, Macneil (2001) proposed that executives are part of the organizational power structure, and thus can facilitate organization learning. Consequently, this study suggests that perceptions of senior manager encouragement of knowledge-sharing intentions are necessary for creating and maintaining a positive knowledge-sharing culture in organizations.

Implications for researchers

Future studies should focus on four areas to overcome the limitations of the present study. First, future studies could seek a deeper understanding of the effects of senior managers' intentions to encourage knowledge sharing through structured interviews and case studies of senior executives dealing with ongoing or recently adopted knowledge-sharing practices. Second, future researchers could consider more general managerial behavioural factors such as manager personality traits, leadership styles, organizational commitment, and mutual trust. Third, this study was focused on examining the perceptions of senior managers regarding knowledge-sharing behaviour. Research shows that effectiveness and value of knowledge sharing depends on active employee participation (Hislop, 2003). Therefore, further research could include measures of employee attitudes toward knowledge-sharing practices, extent of employee participation in knowledge-sharing practices, and employee loyalty to their organization regard to knowledge-sharing behaviour. Finally, a longitudinal examination of multiple aspects of explanation knowledge-sharing behaviour in corporate based on TPB required.

Limitations

This study had some limitations. First, the subjects were senior managers in Taiwan, meaning the finding maybe influenced by cultural differences Taiwan and other countries. Second, although there would be senior managers' role perception factors that promote knowledge-sharing intentions as Macneil (2001) suggested, this study did not consider other factors like manager personality traits and task structure. Third, this study obtained just 154 completed questionnaires for a 21.4 per cent response rate. The limited number of respondents in the survey is also concerning. The study findings thus should be verified with a larger sample to increase generalizability. Finally, the sampling population only included large enterprises in Taiwan. However, large firms and SMEs differ significantly in leadership styles and business processes (Duhan et al., 2001). Similar studies, targeting small and medium-sized enterprises, should be pursued to
examine these differences.

**References**


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Appendix
Appendix. Questionnaire items

Behaviour (B)

B1. Employees in my company share know-how from work experience with each other.

B2. Employees in my company share expertise obtained from education and training methods.

B3. Employees in my company share business knowledge obtained informally (such as news stories and gossip).

B4. Employees in my company share business knowledge from partners (such as customers, suppliers and allies).

Intentions (IN)
I feel that my company encouraging employees to share knowledge with colleagues is:

IN1: very unlikely ... very likely.
IN2: very unacceptable ... very acceptable.
IN3: very needless ... very needed.

Attitudes (ATT)

ATT1.
Encouraging knowledge sharing with colleagues is an important component of the policy of my company.

ATT2.
Encouraging knowledge sharing with colleagues is a good idea.

ATT3.
Encouraging knowledge sharing with colleagues is valuable.

ATT4.
Encouraging knowledge sharing with colleagues is beneficial.

Subjective norms (SN)

SN1. Those who influence my decisions think that I should encourage employees to share their knowledge with colleagues.

SN2. Those who influence my decisions think that I should share knowledge with colleagues.

SN3. Those who are important to me think that I should encourage employees to share their knowledge with colleagues.

SN4. Those who are important to me think that I should share knowledge with colleagues.

Perceived behavioural control (PBC)

PBC1. My past experience has increases my confidence in my ability to make decisions encouraging employees to share knowledge with colleagues.

PBC2. Encouraging knowledge sharing with colleagues is within my control in my company.

PBC3. I have the resources, abilities, and knowledge to make a decision facilitating employees in sharing knowledge with colleagues.

PBC4. I am always likely to share knowledge.
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