



Knowledge sharing, job attitudes and organisational citizenship behaviour

Pei-Lee Teh

Faculty of Management, Multimedia University, Cyberjaya, Malaysia, and

Hongyi Sun

*Department of Manufacturing Engineering and Engineering Management,
City University of Hong Kong, Kowloon, Hong Kong*

Abstract

Purpose – There are very few studies on the impact of job attitude on knowledge sharing. The purpose of this paper is to examine the effects of job involvement, job satisfaction, organisational commitment, and organisational citizenship behaviour (OCB) on employees' knowledge sharing behaviour.

Design/methodology/approach – This research is based on a survey of 116 Information Systems personnel in Malaysia. Structural equation modelling is used to test the hypothesis.

Findings – The results show that job involvement, job satisfaction and OCB are independent and positively related to employees' knowledge sharing behaviour. However, organisational commitment has a negative relationship with knowledge sharing behaviour. It is found that OCB is not a significant mediator between job involvement, job satisfaction organisational commitment and knowledge sharing behaviour.

Research limitations/implications – It is widely reported that knowledge workers may not be willing to share with others since they can always argue that it is not their job to share. Therefore, knowledge sharing can be regarded as an extra job. OCB is an extra-role behaviour which is especially relevant to research on knowledge sharing. Theories and research methods in OCB may be used in future research on knowledge sharing.

Practical implications – Given the importance of knowledge sharing in today's competitive business world, this study provides a broader understanding of different dimensions of job attitudes in relation to employees' knowledge sharing behaviours. Our findings suggest that organisational administrators and managers should look into ways of improving the levels of job satisfaction, job involvement, and OCB in order to facilitate knowledge sharing behaviour.

Originality/value – This study makes two distinct additions to the organisational behaviour and knowledge sharing literature. First, job attitudes appear to be significantly related to knowledge sharing behaviour, addressing a research gap in the literature of knowledge sharing and employee attitudes. Second, this study reveals that OCB directly affects knowledge sharing but it does not mediate employees' job attitudes to promote knowledge sharing behaviours.

Keywords Malaysia, Employees behaviour, Job satisfaction, Job involvement, Knowledge sharing, Organizational commitment, Organizational citizenship behaviour

Paper type Research paper



1. Introduction

Knowledge sharing is regarded as the informal communication process involving the sharing of knowledge between co-workers (Siemens *et al.*, 2008). Organisational members are better equipped with skills and knowledge when they engage in knowledge sharing (Sitko-Lutek *et al.*, 2010). Organisational administrators and managers

presumably value such practices, in part because knowledge sharing among employees makes an individual's job easier, and saves the individual's time for more substantive tasks. However, it is difficult to enforce knowledge sharing because knowledge is created and stored within the organisational members (Chow and Chan, 2008). In the workplace, knowledge sharing problem is relatively common in which the individual employees with knowledge are less inclined to share their knowledge (Ho *et al.*, 2009). Knowledge sharing will not happen if one does not intend to share knowledge (Siemsen *et al.*, 2008). Furthermore, knowledge sharing behaviours are generally unnatural because individuals perceive their knowledge as valuable assets, and open sharing of knowledge with others is limited by their natural tendency to keep information to themselves (Davenport and Prusak, 1998, as cited by Hsu *et al.*, 2007). Therefore, the unwillingness of employees to share knowledge with other colleagues has created problems for organisational survival (Lin, 2007a).

Although knowledge sharing literature is varied, rich and still growing over two decades, many researchers have limited their studies to focus on interpersonal trust (Chai and Kim, 2010; Ford and Staples, 2010; Hsu *et al.*, 2007), reciprocal benefits (Tohidinia and Mosakhani, 2010; Lin, 2007b), cultural factors (Huang *et al.*, 2008; Ardichvili *et al.*, 2006), and organisational issues (Li, 2010; Kankanhalli *et al.*, 2005) in relation to knowledge sharing behaviour. Although the accumulation of research on knowledge sharing has provided useful insights, there has been little formal analysis of the impact of job attitudes on employees' knowledge sharing behaviour, and few attempts to integrate it explicitly with organisational citizenship behaviour (OCB). In other words, a complete picture of the psychology surrounding knowledge sharing behaviour is missing.

On the basis of a review study, Hislop (2003) concluded that the most significant factor influencing knowledge sharing is the employee attitude. In some instances, employee attitudes may impede knowledge sharing behaviour (Yang, 2008). Because knowledge sharing behaviour is regarded as an individualistic behaviour (Brock and Kim, 2002), it is important to understand how the individual attitudinal and behavioural outcomes may have a differential impact on employees' knowledge sharing behaviours. In this regard, this paper aims to fill this gap in the literature by examining how the job attitudes (i.e. job involvement, job satisfaction and organisational commitment) may influence the employees' knowledge sharing behaviours. Our paper is distinctive because we further examine whether OCB mediates the relationship between job attitudes and knowledge sharing behaviour.

In the sections that follow, we review the literature on job involvement, job satisfaction, organisational commitment, OCB and knowledge sharing behaviour that facilitates the development of model and hypotheses. Next, we describe the research methodology employed in this study, and present the statistical results and discussions of the findings. Finally, we discuss both implications and limitations of these findings.

2. Literature review and hypotheses development

2.1 Knowledge sharing

Knowledge sharing is defined as a "social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organisation" (Lin, 2007b, p. 136). In the real world, creating and sustaining knowledge sharing culture can be difficult because one of the challenges faced is that of getting

people to be willing to share their knowledge with other colleagues (Lam and Lambermont-Ford, 2010).

In practice, some employees are interested to share their knowledge with others, while some seem reserved or uninterested. These individual differences in knowledge sharing behaviours may be influenced by individual psychological and/or behavioural outcomes. For example, the organisational members are more inclined to share knowledge when they are happier with their colleagues and the employing organisation (Constant *et al.*, 1994). In most instances, individual psychological outcomes such as higher job involvement and job satisfaction can motivate individuals to share knowledge. It is important to note that, of all possible employees' job attitudes, our focus in this study lies with four variables (i.e. job involvement, job satisfaction, organisational commitment and OCB) that affect the employees' knowledge sharing behaviours.

2.2 Knowledge sharing and job attitudes

2.2.1 Job involvement. Job involvement has been widely studied in psychological research after Allport (1945) first introduced it as a type of job attitude (Reeve and Smith, 2001). Job involvement is the "degree to which a person is identified psychologically with his work, or the importance of work in his total self-image" (Lodahl and Kejner, 1965, p. 24). In other words, job involvement is the degree to which an individual is engaged in his or her present job (Paullay *et al.*, 1994; Kanungo, 1982). Employees with high levels of job involvement are psychologically concerned with the type of work they carry out on their job (Blau, 1986).

Increasing job involvement can improve organisational performance by leading employees to be more focused in their job, and making work a more rewarding experience (Brown, 1996). In an empirical study, Keller (1997) found a positive relationship between high job involvement and research and development (R&D) performance for scientists. Probst (2000) further reported that employees who rated their job as important are more satisfied with their work and more committed to the organisation. It is argued that job involvement could make an employee feel more confident and prepared to share knowledge about their work compared with those employees with lower job involvement. As a result, highly involved employees are more inclined to share knowledge. This reasoning leads to the following hypothesis:

H1. Job involvement will have a positive effect on employees' knowledge sharing behaviour.

2.2.2 Job satisfaction. In retrospect, there has been a proliferation of literature on job attitudes after the publication of Roethlisberger and Dickson's *Management and the Worker* and Hoppock's work on job satisfaction in the 1930s (Locke, 1969). Job satisfaction is an emotional reaction and behavioural expression to a job that results from individual assessment of his or her work achievement, office environment and work life (Golbasi *et al.*, 2008). According to Locke (1969, p. 316), job satisfaction is defined as "the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values."

Over the years, a number of organisational research (Wright and Cropanzano, 2000; Petty *et al.*, 1984; Schwab and Cummings, 1970) has found a positive relationship between job satisfaction and job performance. This satisfaction-performance relationship is built on the human relations theory, which emerged from

the Hawthorne studies (Schwab and Cummings, 1970). Organ (1977) later published a reappraisal of the logic behind the satisfaction-performance relationship, linking it to social exchange theory, in which performance is regarded as an appropriate form of reciprocation to the firm in exchange for job satisfaction experienced by an employee (Organ, 1977). In fact, individuals with higher levels of job satisfaction exhibit more of the pro-social, OCB (Bateman and Organ, 1983) such as voluntarily sharing knowledge with other co-workers. In this vein, knowledge sharing behaviour might be viewed as a viable form of reciprocation to the organisation in exchange for job satisfaction attained. Following this rationale, we expect job satisfaction to have a positive relationship with knowledge sharing behaviour, and hypothesis below is proposed:

H2. Job satisfaction will have a positive effect on employees' knowledge sharing behaviour.

2.2.3 Organisational commitment. Organisational commitment is a composite of three elements namely, affective, continuance and normative commitment (Meyer and Allen, 1991). However, studies within the topic of organisational commitment in the workplace setting tend to measure only one element of commitment (Cohen, 2007). In the present study, organisational commitment is viewed as the continuation with an organisation resulting from individual's recognition of the costs associated with leaving the organisation. Therefore, the terms "organisational commitment" and "continuance commitment" are used interchangeably in this study. According to Allen and Meyer (1990), the continuance component of organisational commitment is developed based on the magnitude and/or number of side bets a person makes. This aspect is built on the theoretical work of Becker (1960), in which employees make side bets when they perform an action that raises the costs associated with discontinuing another action (Meyer and Allen, 1991; Allen and Meyer, 1990). For instance, a staff who invests time and efforts acquiring a job skill is "betting" that the time and efforts will pay off, and he or she needs to be employed in the organisation in order to win the bet (Allen and Meyer, 1990).

Past studies (Meyer and Allen, 1991; Meyer *et al.*, 1989) have found negative correlations between continuance commitment and performance. In a related vein, the study of Shore and Wayne (1993) found that continuance commitment is negatively related to OCB. Shore and Wayne (1993) further explained that organisational members who feel bound to their employing organisation because of an accrual of side bets are less inclined to perform OCB. In the workplace, employees' OCB is likely to result in thoughts of sharing knowledge. In the face of previous research evidence (Shore and Wayne, 1993; Meyer and Allen, 1991; Meyer *et al.*, 1989), it is hypothesised that employees with higher organisational commitment are less likely to share knowledge because their high continuance commitment levels lead to lower levels of OCB, which is negatively related to knowledge sharing behaviour. Therefore, the following hypothesis is proposed:

H3. Organisational commitment will have a negative effect on employees' knowledge sharing behaviour.

2.3 The mediating role of OCB

According to Podsakoff *et al.* (2000), the term OCB is first coined by Organ and his associates (Smith *et al.*, 1983; Bateman and Organ, 1983). OCB refers to employee's discretionary behaviour that is not formally rewarded by the organisation's formal award system (Konovsky and Pugh, 1994; Shore and Wayne, 1993).

In a work environment, OCB helps to connect an interrelated work relationship between employees and develop altruistic motive with an organisation (Bolino *et al.*, 2002). For example, altruism involves sharing knowledge with passion (Hsu and Lin, 2008).

In a review of OCB literature, Podsakoff *et al.* (2000) posited that OCB is influenced by positive job attitudes. This is because employees are more likely to offer extra-role behaviour when they are satisfied with their jobs or committed to their organisations (Bolino *et al.*, 2002). A stream of research has studied the influence of employee attitudes on OCB (Manrique de Lara and Rodriguez, 2007). For example, Bateman and Organ (1983) reported that job satisfaction is positively related to OCB. This finding is supported by MacKenzie *et al.* (1998) who posited that job satisfaction motivates employees to perform OCB voluntarily such as helping co-workers solve work-related problems. In a more recent study, Hsu and Lin (2008) postulated that individuals with higher OCB are more willing to share their knowledge. In this regard, we expect OCB to be positively related to knowledge sharing behaviour in the present study.

According to Baron and Kenny (1986, p. 1176), “[. . .] a given variable may be said to function as a mediator to the extent it accounts for the relation between the predictor and the criterion.” Given that past literature has suggested that OCB accounts for the relationships between the independent variables (e.g. job attitude such as job satisfaction) and dependent variable (i.e. knowledge sharing behaviour), OCB may represent a mediator in this study. In other words, the impacts of job involvement, job satisfaction, and organisational commitment on knowledge sharing behaviour may be mediated through OCB. For these reasons, we also hypothesise OCB to serve as a mediator between job involvement and knowledge sharing behaviour, between job satisfaction and knowledge sharing behaviour, between organisational commitment and knowledge sharing behaviour. Based on these assertions, the following hypotheses are proposed:

- H4. OCB will have a positive effect on employees’ knowledge sharing behaviour.
- H5. Job involvement will have a positive effect on employees’ knowledge sharing behaviour when OCB mediates the relationship.
- H6. Job satisfaction will have a positive effect on employees’ knowledge sharing behaviour when OCB mediates the relationship.
- H7. Organisational commitment will have a negative effect on employees’ knowledge sharing behaviour when OCB mediates the relationship.

3. Research methodology

3.1 Measures

Scale measures of this study are adapted from published research. Job involvement is assessed using the scale developed by Kanungo (1982). The measures of job satisfaction are adapted from a shortened version of Minnesota Satisfaction Questionnaire (Weiss *et al.*, 1967). The survey items for organisational commitment are an adaptation of the items developed by Allen and Meyer (1990). The mediating variable, OCB is measured using items from Williams and Anderson (1991). The measures for knowledge sharing behaviour are adapted from Cheng and Chen (2007). These scale selections are made because these scales have demonstrated good psychometric properties and unidimensionality in numerous studies (Gregory *et al.*, 2010; Karriker and Williams, 2009;

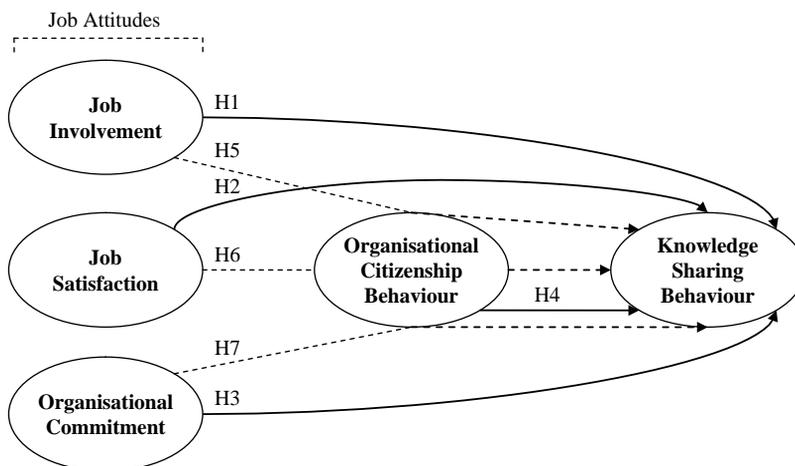
Martin, 2008; Probst, 2000; Yousef, 2002; MacKenzie *et al.*, 1998; Blau, 1986). In the present study, the survey items are scored on a six-point Likert scale. Anchors ranging from 1 – extremely disagreed, to 6 – extremely agreed, are used to measure the variables. The “Appendix” presents the survey items used in this research.

3.2 Sample and procedure

Figure 1 shows the hypothesised model. The research hypotheses are tested using a sample of 116 IS personnel in Malaysia. The respondents are IS personnel working in three multinational companies. These three organisations are selected and viewed as the best and most valid representation of the population in this research for two main reasons. First, the organisations selected in this study are ranked among the most recent list of *Fortune* 500 companies (*Fortune*, 2010). The *Fortune* 500 is a list compiled by *Fortune* magazine ranking the top 500 corporations in the world as measured by their gross revenue (*Fortune*, 2010; *Economy Watch*, 2010). Second, these organisations are chosen because their knowledge management systems are sophisticated and established and their knowledge sharing success stories have been recognised in practitioners’ articles such as *Computerworld*, *IBM Systems Journal*, *HP Journal*, etc.

Data are collected via stratified random sampling procedure. The strata identified in this study are work division and length of service. These strata are concerned because employees’ knowledge sharing experiences are dependent on employees’ job characteristics and tenure. In this study, 240 survey questionnaires are distributed to employees working in IT division and have a minimum of six months employment period with the companies. Data analysis is performed using the 116 completed survey questionnaires. As a result, the response rate for this research is 48.33 percent.

The sample size of 116 is acceptable for analysis in this study. First, according to Hair *et al.* (2010) landmark book, a minimum sample size of 100 is adequate for models comprising five or fewer constructs. In a related vein, Kuncze *et al.* (1975) posited that the number of required sample size in structural equation modelling (SEM) research depends on the number of sample size per measured variables. Kuncze *et al.* (1975)



Note: Dotted lines illustrate the mediating relationship

Figure 1. Research model

suggested that sample size be at least ten times the number of variables in multivariate studies. Given that the present research model contains five measured variables, the sample size of 116 is acceptable. Second, there are a number of simulation studies (Gerbing and Anderson, 1985) that have validated the appropriateness of maximum likelihood estimation executed with small samples within the SEM analysis. Since the maximum likelihood estimation technique is used in the present study, SEM results based on sample size of 116 are reliable. Third, the application of SEM to samples of 116 is compatible with other SEM studies, for example, 107 respondents in the publication of *Personality and Individual Differences* (Gignac, 2006), 112 participants in the publication of *MIS Quarterly* (Davis, 1989). Therefore, the 116 samples in our study can also be used for further analysis.

4. Data analysis

4.1 Profile of respondents

Research participants include 61.2 per cent male and 38.8 per cent female. A majority of these participants are in their 20s. Of these participants, 22.4 per cent are non-executives, 62.9 per cent are executives, 6.9 per cent are assistant managers, and 7.8 per cent are managers. In terms of employees' length of service, 30.2 per cent have worked more than six months but less than one year, 48.3 per cent have between one and three years of service, and 21.5 per cent of the participants have worked more than three years at the current company.

4.2 Scale validation

Table I presents the results of reliability and validity analysis. In this study, internal reliability and validity of the constructs are validated by examining the values of composite reliability and the average variance extracted. Following Bagozzi and Yi (1988), a cut-off criterion of composite value of 0.60 or above is used in assessing the internal reliability of variables. Convergent validity is assumed when a measure of a variable estimates average variance extracted value of 0.50 or higher (Fornell and Larcker, 1981). Referring to Table I, all constructs have composite reliability values ranging from 0.816 to 0.921, which are greater than the desirable threshold of 0.60 recommended by Bagozzi and Yi (1988). Likewise, the resulting average variance extracted for each measure range from 0.598 to 0.700, satisfying the requirement for convergent validity.

Table II shows the correlation matrix and the values for square roots of average variance extracted. According to Fornell and Larcker (1981), discriminant validity is verified when the average variance shared between a scale and its measures are more than the variance shared between the scales and other scales in the hypothesised model. As shown in Table II, the values of square roots of average variance extracted are greater than the off-diagonal measures in the corresponding rows and columns, indicating that discriminant validity is established.

On the other hand, the veracity of relationships among constructs in self-report survey is vulnerable to the problem of common method variance (CMV). Therefore, Harman's single-factor test is conducted to address the issue of CMV. The assumption for this test is that if CMV is present, a single factor would suffice in the factor analysis (Podsakoff *et al.*, 2003). Our test results show that the largest factor accounted for 40.77 percent of the total variance, suggesting that CMV would not be significant in this study.

Constructs	Items	Loadings	Reliability CR ^a	Validity AVE ^b
Job involvement (JIN)	JIN1	0.755	0.921	0.700
	JIN2	0.892		
	JIN3	0.847		
	JIN4	0.888		
	JIN5	0.794		
Job satisfaction (JSA)	JSA1	0.810	0.912	0.598
	JSA2	0.830		
	JSA3	0.749		
	JSA4	0.829		
	JSA5	0.733		
	JSA6	0.702		
	JSA7	0.750		
Organisational commitment (OCM)	OCM1	0.800	0.904	0.655
	OCM2	0.853		
	OCM3	0.811		
	OCM4	0.814		
	OCM5	0.765		
Organisational citizenship behaviour (OCB)	OCB1	0.890	0.892	0.675
	OCB2	0.852		
	OCB3	0.797		
	OCB4	0.739		
Knowledge sharing behaviour (KSB)	KSB1	0.852	0.816	0.598
	KSB2	0.751		
	KSB3	0.709		

Notes: ^aComposite reliability; ^baverage variance extracted

Table I.
Results of reliability and validity analysis

	JIN	JSA	OCM	OCB	KSB
JIN	<i>0.837</i>				
JSA	0.598*	<i>0.773</i>			
OCM	0.724*	0.597*	<i>0.809</i>		
OCB	0.572*	0.510*	0.397*	<i>0.809</i>	
KSB	0.241*	0.383*	0.343*	0.373*	<i>0.773</i>

Notes: All correlations are significant at the *0.01 level (two-tailed); the italicised values in the diagonal row are square roots of the AVE; JIN, job involvement; JSA, job satisfaction; OCM, organisational commitment; OCB, organisational citizenship behaviour; KSB, knowledge sharing behaviour

Table II.
Correlation analysis

4.3 Hypotheses testing

We tested the hypothesised model using SEM. The software package used to analyse the data is AMOS 16.0.

Table III shows a summary of model fit indices for all structural models. The goodness fit indices used in this study include the chi-square (χ^2) test statistics/degrees of freedom (df) ratio, goodness-of-fit (GFI) index, adjusted goodness-of-fit (AGFI) index, root mean square error of approximation (RMSEA), normed fit index (NFI), comparative

Table III.
Model fit indices for
the structural models

	$\chi^2/df \leq 2^a$	GFI $\geq 0.80^{b,c,d}$	AGFI $\geq 0.80^{b,c}$	Model fit indices RMSEA $\leq 0.05^e$	NFI $\geq 0.80^{b,d}$	CFI $\geq 0.95^f$	TLI $\geq 0.95^f$
Structural model 1	1.143	0.874	0.823	0.035	0.894	0.985	0.981
Structural model 2	1.004	0.895	0.852	0.006	0.900	1.000	0.999
Structural model 3	1.050	0.868	0.822	0.021	0.879	0.993	0.992

Notes: Desirable range recommended by ^aRyu *et al.* (2003); ^bForza and Filippini (1998); ^cShimizutani *et al.* (2008); ^dSoch and Sandhu (2008); ^eBrowne and Cudeck (1993) and ^fHu and Bentler (1999)

fit index (CFI), and Tucker-Lewis index (TLI). A χ^2/df ratio of two or less indicates a good model fit (Ryu *et al.*, 2003). More recently, several studies (Shimizutani *et al.*, 2008; Soch and Sandhu, 2008; Forza and Filippini, 1998) have accepted the value of GFI, AGFI and NFI between the ranges of 0.80 and 0.90 as an indication of good fit. An RMSEA value falling below the boundary of 0.5 suggests a close approximate fit (Browne and Cudeck, 1993). According to Hu and Bentler (1999), a value greater than 0.95 for CFI and TLI indicates a good fit. The TLI has two strengths that provide rationale for its significant evaluation in this study. First, in a simulation study on over 30 indices, Marsh *et al.* (1998) reported that the TLI was the only popular used index that was relatively independent of sample size. Second, TLI represents a relatively unbiased indicator of fit (McDonald and Marsh, 1990). In this study, the TLI values in all models (Table III) are above 0.95, suggesting well-fitting models. As shown in Table III, there is a good model fit for all data because the goodness fit indices of the models have exceeded the acceptance levels recommended by past studies (Shimizutani *et al.*, 2008; Soch and Sandhu, 2008; Ryu *et al.*, 2003; Hu and Bentler, 1999; Forza and Filippini, 1998; Browne and Cudeck, 1993).

All the parameter estimates of job involvement, job satisfaction, organisational commitment, and OCB have acceptable statistical significance levels. As shown in Table IV, the hypothesis testing results of structural model 3 indicate that job satisfaction ($\beta = 0.711$, $p < 0.001$) is reported to have a significant and positive relationship with knowledge sharing behaviour. Job satisfaction ($\beta = 0.297$, $p < 0.01$) is positively related to knowledge sharing behaviour. On the other hand, organisational commitment ($\beta = -0.370$, $p < 0.05$) is negatively related to knowledge sharing behaviour. OCB ($\beta = 0.403$, $p < 0.001$) is found to have a significant and positive direct relationship with knowledge sharing behaviour.

We accomplished hypothesis testing by performing the statistical mediation analysis using the classic three-step approach recommended by Baron and Kenny (1986), with three regression equations to test for mediation. First, the independent variables must be significantly associated with the mediator (i.e. OCB) in structural model 1. Second, the independent variables must affect the dependent variable (i.e. knowledge sharing behaviour) in structural model 2. Third, the mediator must be shown to affect the dependent variable in structural model 3. Full mediation model holds if the relation between the independent variable and the dependent variable, controlling for mediator is zero. Sobel (1982) test is performed to test the significance of mediated effect. Referring to Table V, it is found that OCB is not a mediator between job involvement and knowledge sharing behaviour; job satisfaction and knowledge sharing behaviour; organisational commitment and knowledge sharing behaviour. As a result, hypotheses *H1* through *H4* are statistically supported. However, *H5* through *H7* are not statistically supported.

5. Discussions and implications

5.1 Discussions of the results

First, our findings show that job involvement has a direct and positive effect on employees' knowledge sharing behaviours. In addition, OCB is not a significant mediator for job involvement and knowledge sharing behaviours. One possible explanation is that the IS employees with higher levels of job involvement are in a stronger position to understand their job task. As a result, these highly involved employees in our survey

are more confident and willing to engage in knowledge sharing behaviours. On the other hand, this result can be explained from an employee's orientation towards collectivism. According to Moorman and Blakely (1995), employees who show high levels of collectivism may go beyond their in-role requirement. In fact, the sample collected in this study are IS personnel from Malaysia. Because the Malaysian work teams are found to be collectivists (Schermerhorn and Bond, 1997), these IS personnel would value job involvement in team, and they are more likely to share knowledge with other colleagues.

Second, our results show that job satisfaction exerts a positive influence on employees' knowledge sharing behaviours. Our findings reveal that the impact of job satisfaction on knowledge sharing behaviour is not mediated through OCB. These findings indicate that IS personnel who exhibit high levels of job satisfaction are more likely to share knowledge. Supporting this line of reasoning is that IS personnel who are satisfied with their jobs will be more likely to engage in knowledge sharing behaviours which might be regarded as a form of reciprocation to the organisation in exchange for job satisfaction experienced.

Third, the most notable aspect of the findings is that organisational commitment is negatively related to employees' knowledge sharing behaviour. Our results also do not support the mediating effect of OCB on relationship involving organisational commitment and knowledge sharing behaviour. This finding is inconsistent with an empirical study by Lin (2007a) which reported that organisational commitment positively influences knowledge sharing. However, our result is partially consistent with the findings of Shore and Wayne (1993) in which continuance commitment was a negative predictor of OCB. Continuance commitment reflects the employees'

Causal path	Parameter estimates	SE	Critical ratios	p-value
JIN → KSB	0.711	0.161	4.404	0.000***
JSA → KSB	0.297	0.100	2.968	0.003**
OCM → KSB	-0.370	0.154	-2.407	0.016*
OCB → KSB	0.403	0.108	3.7226	0.000***

Table IV.
Parameter estimates for structural model 3

Notes: * $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$; JIN, job involvement; JSA, job satisfaction; OCM, organisational commitment; OCB, organisational citizenship behaviour; KSB, knowledge sharing behaviour

Constructs	Sobel test statistic	Coefficients of SM 1 (IV → Mediator)	Coefficients of SM 2 (IV → DV)	Coefficients of SM 3 (IV → DV, mediator controlled)
Job involvement	2.850**	0.673***	0.190	0.711***
Job satisfaction	2.324*	0.300**	0.093	0.297**
Organisational commitment	-2.020*	-0.348*	0.010	-0.370*
Organisational citizenship behaviour	Nil	Nil	Nil	0.403***

Table V.
Mediation analysis

Notes: * $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$; SM, structural model; mediator – organisational citizenship behaviour; DV, dependent variables; IV, independent variables

intention of continuing the employment with the same organisation (Martin, 2008). Since continued employment in an organisation is important for employee who exhibits high levels of continuance commitment, the relationship between organisational commitment and on-the-job behaviour is highly dependent on the implication of that behaviour for individual's employment (Meyer and Allen, 1991). Our findings imply that individuals with high organisational commitment are more sensitive to knowledge sharing. For these IS personnel, knowledge sharing may be considerably less important because they will stay with the organisation in the long run. Another, more likely, explanation is that these IS personnel might perceive their knowledge is valuable and thus they indicate an unwillingness to share knowledge with other colleagues so that they maintain a competitive advantage while they remain in the employing organisation.

Last, we have provided additional evidence that OCB is positively related to employees' knowledge sharing behaviours. This result is supported by a notion made by Hsu and Lin (2008), in which individuals with higher OCB are more willing to increase the welfare of others, thereby they will be more favourable to share knowledge. In this regard, OCB is found to be the predicted variable that facilitates the knowledge sharing behaviours among the IS personnel.

5.2 Research and theoretical implications

From an academic perspective, our research model provides a different view of knowledge sharing landscape from the organisational behaviour's standpoint. Our findings highlight the importance of employees' job attitudes namely, job involvement and job satisfaction and organisational commitment in influencing knowledge sharing behaviours. Furthermore, this paper adds value by showing that OCB does not mediate the employees' job attitudes to promote knowledge sharing behaviours. To the best of our knowledge, there have been no reports of research that describe how job attitudes and OCB interact to drive employees' knowledge sharing behaviours. In this view, this paper has bridged the gap in the literature of job attitudes and knowledge sharing.

5.3 Practical implications

Much is known about the extrinsic and intrinsic motivations which lead to knowledge sharing behaviours. Far less is known about the role of job attitudes in predicting individuals' knowledge sharing behaviours. For this reason, the present study would be valuable to industrial practitioners because the proposed model can serve as a practical assessment tool for measuring the employees' job attitudes, and relating those measurements to employees' knowledge sharing behaviours. Based on this assessment, management can then identify which job attitude constitutes a barrier, and direct their resources and efforts at improving the associated job attitude.

Our study shows that attitude factors (i.e. job involvement and job satisfaction) are positively related to knowledge sharing behaviour. Hence, managers should recognise the importance of human resource management programs to monitor and improve employees' job attitudes. Within service-oriented organisations, rules and job descriptions can turn into barriers to nurture OCB (Wat and Shaffer, 2005). Since empowerment is viewed as a process of enabling from the aspect of social exchange theory (Conger and Kanungo, 1988), IS personnel should be empowered to exercise discretion when they carry out their job functions and engage in good citizenship

behaviours such as sharing work-related knowledge with other colleagues. Narrowly defined rules and regulations as well as job descriptions should be reduced to facilitate knowledge sharing behaviours.

According to Siemsen *et al.* (2008), knowledge sharing is an informal process and therefore employees will be able to share knowledge if they have adequate slack time at work. From this aspect, management can create a work environment favourable for employees' knowledge sharing such as making time available, and providing employees with more autonomy to adjust their work hours. IS employees with higher levels of job involvement and job satisfaction are more encouraged to engage in knowledge sharing if they are not entirely occupied by their regular work-related tasks.

Special attention should be given to the IS personnel who exhibit high level of organisational commitment but these employees are unwilling to share knowledge. Organisational administrators and managers can address this issue in a proactive manner. One possible strategy might be approaching the IS personnel individually and communicating the organisational goals with them. Such communication to each organisational member can help to change their thinking that knowledge sharing is beneficial and it will not hinder their efforts to distinguish themselves relative to their colleagues.

More importantly, management must be attentive to the role of OCB in affecting the employees' knowledge sharing behaviour. In today's world, OCB will not necessarily be encouraged by establishment of more procedurally human resource practices. Instead, management may select and develop managers or supervisors who exhibit active constructive leadership as a means to encourage OCB by promoting an understanding and appreciation of the instrumentality of OCB for organisational effectiveness (Jiao *et al.*, 2011).

6. Conclusion and research limitation

The research investigates the impact of work attitude on knowledge sharing behaviour. It is found out that job involvement, job satisfaction and OCB are independent and positively related to employees' knowledge sharing behaviour. However, organisational commitment has a negative relationship with knowledge sharing behaviour. OCB is found to be a non-mediator between job involvement, job satisfaction organisational commitment and knowledge sharing behaviour. This finding implies that the employees are motivated to share knowledge when they experience higher job involvement and job satisfaction, and not to be influenced by the mediating effect of OCB. This is a new result for further research in this field.

This study has some research limitations that should be acknowledged. In fact, identification of these limitations should provide direction for future studies. First, cross-sectional data are used to test the model. It would be worthwhile for future studies to conduct experimental or longitudinal research in which the temporal priority of one variable over another can be tested more clearly. Second, this study does not incorporate moderating variable in examining the relationships between job attitudes and knowledge sharing behaviours. Future research should attempt to include the moderators (e.g. individual or situational factors) in order to account adequately for the relationships between job attitudes and knowledge sharing behaviours. Third, this finding is based on a sample collected from IS personnel in Malaysia. We recommend that future studies test the proposed model in other professional groups or/and

countries. Fourth, the relationship between organisational commitment and knowledge sharing behaviour depends on continuance commitment examined. Future research would benefit from further investigation of joint effects of the different commitment components (e.g. affective, continuance and normative commitment) on employees' behaviour.

Although this research has these limitations, it has provided theoretical and empirical justification for expecting employees' job attitudes to be related to knowledge sharing behaviour. In other words, IS employees' propensity to share knowledge is found to depend on their job involvement, job satisfaction, organisational commitment and OCB. Given the substantial role of IS personnel in today's business world, we hope that our findings may help the organisational administrators and managers to attain a collective understanding regarding IS personnel's job attitude and its ramifications in knowledge sharing behaviours.

References

- Allen, N.J. and Meyer, J.P. (1990), "The measurement and antecedents of affective, continuance and normative commitment to the organization", *Journal of Occupational Psychology*, Vol. 63 No. 1, pp. 1-18.
- Allport, G.W. (1945), "The psychology of participation", *Psychological Review*, Vol. 53 No. 3, pp. 117-32.
- Ardichvili, A., Maurer, M., Li, W., Wentling, T. and Stuedemann, R. (2006), "Cultural influences on knowledge sharing through online communities of practice", *Journal of Knowledge Management*, Vol. 10 No. 1, pp. 94-107.
- Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Baron, R.M. and Kenny, D.A. (1986), "The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-82.
- Bateman, T.S. and Organ, D.W. (1983), "Job satisfaction and the good soldier: the relationship between affect and employee 'citizenship'", *Academy of Management Journal*, Vol. 26 No. 4, pp. 587-95.
- Becker, H.S. (1960), "Notes on the concept of commitment", *The American Journal of Sociology*, Vol. 66 No. 1, pp. 32-40.
- Blau, G.J. (1986), "Job involvement and organizational commitment as interactive predictors of tardiness and absenteeism", *Journal of Management*, Vol. 12 No. 4, pp. 577-84.
- Bock, G.W. and Kim, Y.G. (2002), "Breaking the myths of rewards: an exploratory study of attitudes about knowledge sharing", *Information Resources Management Journal*, Vol. 15 No. 2, pp. 14-21.
- Bolino, M.C., Turnley, W.H. and Bloodgood, J.M. (2002), "Citizenship behaviour and the creation of social capital in organizations", *Academy of Management Journal*, Vol. 27 No. 4, pp. 505-22.
- Brown, S.P. (1996), "A meta-analysis and review of organizational research on job involvement", *Psychological Bulletin*, Vol. 120 No. 2, pp. 235-55.
- Browne, M.W. and Cudeck, R. (1993), "Alternative ways of assessing model fit", in Bollen, K.A. and Long, J.S. (Eds), *Testing Structural Equation Models*, Sage, Newbury Park, CA, pp. 136-62.

- Chai, S. and Kim, M. (2010), "What makes bloggers share knowledge? An investigation on the role of trust", *International Journal of Information Management*, Vol. 30 No. 5, pp. 408-15.
- Cheng, C.M. and Chen, L.J. (2007), "A study on the knowledge sharing of health technology for technological college students' mobile learning", *International Journal of Education and Information Technologies*, Vol. 1 No. 1, pp. 24-9.
- Chow, W.S. and Chan, L.S. (2008), "Social network, social trust and shared goals in organizational knowledge sharing", *Information & Management*, Vol. 45 No. 7, pp. 458-65.
- Cohen, A. (2007), "An examination of the relationship between commitments and culture among five cultural groups of Israeli teachers", *Journal of Cross-Cultural Psychology*, Vol. 38 No. 1, pp. 34-49.
- Conger, J.A. and Kanungo, R.N. (1988), "The empowerment process: integrating theory and practice", *Academy of Management Review*, Vol. 13 No. 3, pp. 471-82.
- Constant, D., Kiesler, S. and Sproull, L. (1994), "What's mine is ours, or is it? A study of attitudes about information sharing", *Information Systems Research*, Vol. 5 No. 4, pp. 400-21.
- Davenport, T.H. and Prusak, L. (1998), *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston, MA.
- Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-40.
- Economy Watch (2010), *Fortune 500 Company*, available at: www.economywatch.com (accessed December 26, 2010).
- Ford, D.P. and Staples, S. (2010), "Are full and partial knowledge sharing the same?", *Journal of Knowledge Management*, Vol. 14 No. 3, pp. 394-409.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Fortune (2010), "The world's largest corporations", *Fortune*, Vol. 162 No. 2, pp. F1-F10.
- Forza, C. and Filippini, R. (1998), "TQM impact on quality conformance and customer satisfaction: a causal model", *International Journal of Production Economics*, Vol. 55 No. 1, pp. 1-20.
- Gerbing, D.W. and Anderson, J.C. (1985), "The effects of sampling error and model characteristics on parameter estimation for maximum likelihood confirmatory factor analysis", *Multivariate Behavioral Research*, Vol. 20 No. 3, pp. 255-71.
- Gignac, G.E. (2006), "Self-reported emotional intelligence and life satisfaction: testing incremental predictive validity hypotheses via structural equation modelling (SEM) in a small sample", *Personality and Individual Differences*, Vol. 40, pp. 1569-77.
- Golbasi, Z., Kelleci, M. and Dogan, S. (2008), "Relationships between coping strategies, individual characteristics and job satisfaction in a sample of hospital nurses: cross-sectional questionnaire survey", *International Journal of Nursing Studies*, Vol. 45, pp. 1800-6.
- Gregory, B.T., Albritton, M.D. and Osmonbekov, T. (2010), "The mediating role of psychological empowerment on the relationships between P-O fit, job satisfaction, and in-role performance", *Journal of Business Psychology*, Vol. 25 No. 4, pp. 639-47.
- Hair, J.F. Jr, Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis: A Global Perspective*, 7th ed., Pearson Education, Upper Saddle River, NJ.
- Hislop, D. (2003), "Linking human resource management and knowledge management via commitment: a review and research agenda", *Employee Relations*, Vol. 25 No. 2, pp. 182-202.
- Ho, C.T.B., Hsu, S.F. and Oh, K.B. (2009), "Knowledge sharing: game and reasoned action perspectives", *Industrial Management & Data Systems*, Vol. 109 No. 9, pp. 1211-30.

-
- Hsu, C.L. and Lin, J.C.C. (2008), "Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation", *Information & Management*, Vol. 45, pp. 65-74.
- Hsu, M.H., Ju, T.L., Yen, C.H. and Chang, C.M. (2007), "Knowledge sharing behavior in virtual communities: the relationship between trust, self-efficacy, and outcome expectations", *International Journal of Human-Computer Studies*, Vol. 65, pp. 153-69.
- Hu, L.T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling*, Vol. 6 No. 1, pp. 1-55.
- Huang, Q., Davison, R.M. and Gu, J. (2008), "Impact of personal and cultural factors on knowledge sharing in China", *Asia Pacific Journal of Management*, Vol. 25, pp. 451-71.
- Jiao, C., Richards, D.A. and Zhang, K. (2011), "Leadership and organizational citizenship behavior: OCB-specific meanings as mediators", *Journal of Business and Psychology*, Vol. 26 No. 1, pp. 11-25.
- Kankanhalli, A., Tan, B.C.Y. and Wei, K.K. (2005), "Contributing knowledge to electronic knowledge repositories: an empirical investigation", *MIS Quarterly*, Vol. 29 No. 1, pp. 113-43.
- Kanungo, R.N. (1982), "Measurement of job and work involvement", *Journal of Applied Psychology*, Vol. 67 No. 3, pp. 341-9.
- Karriker, J.H. and Williams, M.L. (2009), "Organizational justice and organizational citizenship behavior: a mediated multifoci model", *Journal of Management*, Vol. 35 No. 1, pp. 112-35.
- Keller, R.T. (1997), "Job involvement and organizational commitment as longitudinal predictors of job performance: a study of scientists and engineers", *Journal of Applied Psychology*, Vol. 82 No. 4, pp. 539-45.
- Konovsky, M.A. and Pugh, S.D. (1994), "Citizenship behaviour and social exchange", *Academy of Management Journal*, Vol. 37 No. 3, pp. 656-69.
- Kunce, J.T., Cook, D.W. and Miller, D.E. (1975), "Random variables and correlational overkill", *Educational and Psychological Measurement*, Vol. 35, pp. 529-34.
- Lam, A. and Lambermont-Ford, J.P. (2010), "Knowledge sharing in organisational contexts: a motivation-based perspective", *Journal of Knowledge Management*, Vol. 14 No. 1, pp. 51-66.
- Li, W. (2010), "Virtual knowledge sharing in a cross-cultural context", *Journal of Knowledge Management*, Vol. 14 No. 1, pp. 38-50.
- Lin, C.P. (2007a), "To share or not to share: modeling knowledge sharing using exchange ideology as a moderator", *Personnel Review*, Vol. 36 No. 3, pp. 457-75.
- Lin, H.F. (2007b), "Effects of extrinsic and intrinsic motivation on employee knowledge sharing intention", *Journal of Information Science*, Vol. 33 No. 2, pp. 135-49.
- Locke, E.A. (1969), "What is job satisfaction?," *Organizational Behavior and Human Performance*, Vol. 4 No. 4, pp. 309-36.
- Lodahl, T.M. and Kejner, M. (1965), "The development and measurement of job involvement", *Journal of Applied Psychology*, Vol. 49 No. 1, pp. 24-33.
- McDonald, R.P. and Marsh, H.W. (1990), "Choosing a multivariate model: noncentrality and goodness of fit", *Psychological Bulletin*, Vol. 107 No. 2, pp. 247-55.
- MacKenzie, S.B., Podsakoff, P.M. and Ahearne, M. (1998), "Some possible antecedents and consequences of in-role and extra-role salesperson performance", *Journal of Marketing*, Vol. 62 No. 3, pp. 87-98.

- ManriqueLara, P.Z. and Rodriguez, T.F.E. (2007), "Organizational anomie as moderator of the relationship between an unfavorable attitudinal environment and citizenship behavior (OCB): an empirical study among university administration and services personnel", *Personnel Review*, Vol. 36 No. 6, pp. 843-66.
- Marsh, H.W., Hau, K.-T., Balla, J.R. and Grayson, D. (1998), "Is more ever too much? The number of indicators per factor in confirmatory factor analysis", *Multivariate Behavioral Research*, Vol. 33 No. 2, pp. 181-220.
- Martin, S.S. (2008), "Relational and economic antecedents of organisational commitment", *Personnel Review*, Vol. 37 No. 6, pp. 589-608.
- Meyer, J.P. and Allen, N.J. (1991), "A three-component conceptualization of organizational commitment", *Human Resource Management Review*, Vol. 1 No. 1, pp. 61-89.
- Meyer, J.P., Paunonen, S.V., Gellatly, I.R., Goffin, R.D. and Jackson, D.N. (1989), "Organizational commitment and job performance: it's the nature of the commitment that counts", *Journal of Applied Psychology*, Vol. 74 No. 1, pp. 152-6.
- Moorman, R.H. and Blakely, G.L. (1995), "Individualism-collectivism as an individual difference predictor of organizational citizenship behavior", *Journal of Organizational Behavior*, Vol. 16 No. 2, pp. 127-42.
- Organ, D.W. (1977), "A reappraisal and reinterpretation of the satisfaction-causes-performance hypothesis", *Academy of Management Review*, Vol. 2 No. 1, pp. 46-53.
- Paullay, I.M., Alliger, G.M. and Stone-Romero, E.F. (1994), "Construct validation of two instruments designed to measure job involvement and work centrality", *Journal of Applied Psychology*, Vol. 79 No. 2, pp. 224-8.
- Petty, M.M., McGee, G.W. and Cavender, J.W. (1984), "A meta-analysis of the relationships between individual job satisfaction and individual performance", *Academy of Management Review*, Vol. 9 No. 4, pp. 712-21.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Podsakoff, P.M., MacKenzie, S.B., Paine, J.B. and Bachrach, D.G. (2000), "Organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research", *Journal of Management*, Vol. 26 No. 3, pp. 513-63.
- Probst, T.M. (2000), "Wedded to the job: moderating effects of job involvement on the consequences of job insecurity", *Journal of Occupational Health Psychology*, Vol. 5 No. 1, pp. 63-73.
- Reeve, C.L. and Smith, C.S. (2001), "Refining Lodahl and Kejner's job involvement scale with a convergent evidence approach: applying multiple methods to multiple samples", *Organizational Research Methods*, Vol. 4 No. 2, pp. 91-111.
- Ryu, S., Ho, S.H. and Han, I. (2003), "Knowledge sharing behavior of physicians in hospitals", *Expert Systems with Applications*, Vol. 25 No. 1, pp. 113-22.
- Schermerhorn, J.R. Jr and Bond, M.H. (1997), "Cross-cultural leadership dynamics in collectivism and high power distance settings", *Leadership & Organization Development Journal*, Vol. 18 No. 4, pp. 187-93.
- Schwab, D.P. and Cummings, L.L. (1970), "Theories of performance and satisfaction: a review", *Industrial Relations*, Vol. 9 No. 4, pp. 408-30.
- Shimizutani, M., Odagiri, Y., Ohya, Y., Shimomitsu, T., Kristensen, T.S., Maruta, T. and Iimori, M. (2008), "Relationship of nurse burnout with personality characteristic and coping behaviors", *Industrial Health*, Vol. 46, pp. 326-35.

-
- Shore, L.M. and Wayne, S.J. (1993), "Commitment and employee behaviour: comparison of affective commitment and continuance commitment with perceived organizational support", *Journal of Applied Psychology*, Vol. 78 No. 5, pp. 774-80.
- Siemsen, E., Roth, A.V. and Balasubramanian, S. (2008), "How motivation, opportunity, and ability drive knowledge sharing: the constraining-factor model", *Journal of Operations Management*, Vol. 26 No. 3, pp. 426-45.
- Sitko-Lutek, A., Chuanchaoen, S., Sukpitikul, A. and Phusavat, K. (2010), "Applying social network analysis on customer complaint handling", *Industrial Management & Data Systems*, Vol. 110 No. 9, pp. 1402-19.
- Smith, C.A., Organ, D.W. and Near, J.P. (1983), "Organizational citizenship behavior: its nature and antecedents", *Journal of Applied Psychology*, Vol. 68 No. 4, pp. 653-63.
- Sobel, M.E. (1982), "Asymptotic confidence intervals for indirect effects in structural equation models", *Sociological Methodology*, Vol. 13, pp. 290-312.
- Soch, H. and Sandhu, H.S. (2008), "Does customer relationship management activity affect firm performance?", *Global Business Review*, Vol. 9 No. 2, pp. 189-206.
- Tohidinia, Z. and Mosakhani, M. (2010), "Knowledge sharing behavior and its predictors", *Industrial Management & Data Systems*, Vol. 110 No. 4, pp. 611-31.
- Wat, D. and Shaffer, M.A. (2005), "Equity and relationship quality influences on organizational citizenship behaviors: the mediating role of trust in the supervisor and empowerment", *Personnel Review*, Vol. 34 No. 4, pp. 406-22.
- Weiss, D.J., Dawis, R.V., England, G.W. and Lofquist, L.H. (1967), "Manual for the Minnesota satisfaction questionnaire", *Minnesota Studies in Vocational Rehabilitation*, Vol. 22, University of Minnesota, Minneapolis, MN, pp. 32-5.
- Williams, L.J. and Anderson, S.E. (1991), "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors", *Journal of Management*, Vol. 17 No. 3, pp. 601-17.
- Wright, T.A. and Cropanzano, R. (2000), "Psychological well-being and job satisfaction as predictors of job performance", *Journal of Occupational Health Psychology*, Vol. 5 No. 1, pp. 84-94.
- Yang, J. (2008), "Individual attitudes and organizational knowledge sharing", *Tourism Management*, Vol. 29 No. 2, pp. 345-53.
- Yousef, D.A. (2002), "Job satisfaction as a mediator of the relationship between role stressors and organizational commitment: a study from an Arabic cultural perspective", *Journal of Managerial Psychology*, Vol. 17 No. 4, pp. 250-66.

(The Appendix follows overleaf.)

Corresponding author

Pei-Lee Teh can be contacted at: peilee_t@yahoo.com

Table AI.

Construct	Survey items
Job involvement	<ol style="list-style-type: none"> 1. The most important things that happen to me involve my present job 2. Most of my interests are centered around my job 3. I have very strong ties with my present job which would be very difficult to break 4. I like to be absorbed in my job most of the time 5. The most important things that happen in life involve work
Job satisfaction	<ol style="list-style-type: none"> 1. The chance to make use of my abilities and skills 2. The feeling of accomplishment I get from the job 3. The way my job provides for steady employment 4. The way my supervisor and I understand each other 5. The way my co-workers get along with each other 6. The chance to help people 7. The chance to be "somebody" in the community
Organisational commitment	<ol style="list-style-type: none"> 1. I would be very happy to spend the rest of my career with this organisation 2. I feel emotionally attached to this organisation 3. Too much in my life would be disrupted, if I decided that I wanted to leave my organisation now 4. It would be very hard for me to leave my organisation right now, even if I wanted 5. I was taught to believe in the value of remaining loyal to one organisation
Organisational citizenship behaviour	<ol style="list-style-type: none"> 1. I help others who have been absent 2. I help others who have heavy work loads 3. I take time to listen to co-workers' problems and worries 4. I go out of way to help new employees
Knowledge sharing behaviour	<ol style="list-style-type: none"> 1. I will, depending on necessity, share with others any knowledge obtained from other members in the organisation 2. I will immediately share with my good colleagues any knowledge obtained from other members in the organisation 3. I will share knowledge with my good colleagues using e-mail.