

Factors Influencing the Improvement of Knowledge Sharing: Empirical Study of the Industrial Estate Authority of Thailand (IEAT)

Pitchaya Javakorn*

Abstract

This research was design to investigate cultural aspect (learning organization culture), psychological aspect (organizational citizenship behavior), and behavioral aspect (individual's perceived organizational commitment to knowledge sharing, extrinsic motivation) on knowledge sharing at individual level within an organization. The researcher conducted a survey to collected data from 247 full time employees of Industrial Estate Authority of Thailand (IEAT). Through this empirical work, a path model was developed and drawn. The result showed that all variables studied was found significantly and positively associated with knowledge sharing to some extent. Whereas learning organization culture has its direct and indirect effects on this matter. Meanwhile the other variables; individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and, extrinsic motivation have only direct effect to improve of knowledge sharing. Likewise the research output which provide several important contributions to human resource management field and organization behavior field and a key managerial implication for IEAT are presented.

Keywords: Learning organization culture, Individual's perceived organizational commitment to knowledge sharing, Organizational citizenship behavior, Extrinsic motivation, Knowledge sharing

* School of Management Science, Sukhothai Thammathirat Open University.

E-mail: pitchaya5146@gmail.com

Received: January 29, B.E.2562 Revised: September 9, B.E.2562 Accepted: September 11, B.E.2562

ปัจจัยที่มีผลต่อการถ่ายทอดความรู้: กรณีศึกษา การนิคมอุตสาหกรรมแห่งประเทศไทย

พิชยา ขวากร*

บทคัดย่อ

การศึกษาค้นคว้าครั้งนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยต่าง ๆ ที่ส่งผลต่อการถ่ายทอดความรู้ของบุคลากรในองค์กรกรณีศึกษา การนิคมอุตสาหกรรมแห่งประเทศไทย โดยอ้างอิงตัวแปรทางวัฒนธรรม ได้แก่ วัฒนธรรมองค์กรแห่งการเรียนรู้ ตัวแปรทางจิตวิทยา ได้แก่ พฤติกรรมการเป็นสมาชิกที่ดีขององค์กร และ ตัวแปรทางพฤติกรรม ได้แก่ ทักษะของปัจเจกบุคคลที่มีต่อความรับผิดชอบขององค์กรในการถ่ายทอดความรู้และแรงจูงใจภายนอก การศึกษาในครั้งนี้ใช้วิธีวิจัยเชิงปริมาณในการศึกษา การเก็บรวบรวมข้อมูลใช้แบบสอบถาม จากพนักงานประจำของการนิคมอุตสาหกรรมแห่งประเทศไทยจำนวน 247 คน ผลการศึกษาพบว่าทุกตัวแปรมีความสัมพันธ์ทางสถิติที่สำคัญกับการถ่ายทอดความรู้ โดยวัฒนธรรมองค์กรมีความสัมพันธ์ทางสถิติทั้งในทางตรงและทางอ้อม ในขณะที่ตัวแปรอื่น ๆ ได้แก่ พฤติกรรมการเป็นสมาชิกที่ดีขององค์กร; ทักษะของปัจเจกบุคคลที่มีต่อความรับผิดชอบขององค์กรในการถ่ายทอดความรู้; และแรงจูงใจภายนอกมีความสัมพันธ์ทางสถิติทางตรงเพียงทางเดียว นอกจากนี้ประโยชน์ที่ได้รับจากงานวิจัยทั้งในทางทฤษฎีการบริหารทรัพยากรมนุษย์และทฤษฎีพฤติกรรมองค์กร รวมไปถึงผลประโยชน์ในทางปฏิบัติถูกนำเสนอในบทความนี้

คำสำคัญ: วัฒนธรรมองค์กร พฤติกรรมการเป็นสมาชิกที่ดีขององค์กร ทักษะของปัจเจกบุคคลที่มีต่อความรับผิดชอบขององค์กรในการถ่ายทอดความรู้ แรงจูงใจภายนอก การถ่ายทอดความรู้

* สาขาวิชาวิทยาการจัดการ มหาวิทยาลัยสุโขทัยธรรมาธิราช

อีเมล: pitchaya5146@gmail.com

วันที่รับบทความ: 29 มกราคม 2562 วันที่แก้ไขบทความล่าสุด: 9 กันยายน 2562 วันที่อนุมัติการตีพิมพ์: 11 กันยายน 2562

Introduction

Currently, both practitioners as well as scholars are now insisted that knowledge is powerful resource which can enhance organizational competitive advantage (De Long & Fahey, 2000). Within this knowledge based economy where knowledge are most valuable asset of organizations, knowledge sharing as fundamental part of knowledge management has also received much attention for the past two decades based on the assumption that the knowledge possessed by individuals can hardly be converted into organizational knowledge before it is shared with others. The important of knowledge sharing in knowledge based economy is very critical for the competitiveness of any organizations, many scholars have been tried to investigate the processes of knowledge sharing and tried to find factors that facilitate or hinder the process of knowledge sharing.

In general, there are two groups of scholars. First group believe that knowledge sharing behavior is influenced by several factors such as, individual personal beliefs and attitudes, cultural context which surrounded each individual, specific characteristic of shared knowledge, and lastly personal motivation of each individual. But, knowledge sharing is very complex process and cannot be explained by one or several factors. Therefore, another groups of scholars developed integrated model can try to classify and explain relationship among factors in the conceptual model. For example, according to studies conducted by Ipe (2003), knowledge sharing is determined by four related factors namely, the nature of knowledge, individual motivation to share, opportunities to share, and the culture of the work environment. Whereas Bock et al. (2005), used theory of reasoned action to construct and test their conceptual framework. According to Bock's work, the finding indicated that individual personal attitude toward something as well as organizational environment and climate strongly affected the intention to share knowledge of individual, which later influence the attitude of individual toward sharing knowledge.

Though a number of studies related to knowledge sharing such as motivation, individual characteristic, organization context, management support, perception related to knowledge sharing, and environmental factors have been widely examined and studies by number of scholars, the relationship and association between learning organization culture (cultural aspect), individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior (psychology aspect) and extrinsic motivation (behavior aspect) on individual knowledge sharing have been neglected, which should be further clarify in future research.

Currently, the association between organizational learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation toward knowledge sharing at IEAT have not been determined yet. So this

research main objective is to examining factors affecting the level of knowledge sharing within IEAT organization. It is important to study and verify whether the selected factors really serve for knowledge sharing in IEAT or not. Following are the main research questions to address:

1. What are the relationship between learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on knowledge sharing at IEAT?
2. What are direct and indirect relationships among selected factors on the improvement of the knowledge sharing at IEAT?

Literature Review

The concepts of independent and dependent variables namely; knowledge sharing, learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior, and extrinsic motivation are reviewed. Moreover, knowledge management and organization cultures framework in IEAT are also presented.

Concept of Knowledge Sharing

Most of the time the concept of knowledge sharing and transfer are exchangeable. However, this research focuses on knowledge sharing and intend to make distinction between knowledge sharing which is a concept used to explain the flow of knowledge at individual level and knowledge transfer mostly used to explain the flow of knowledge between organization themselves, organization units, departments, or divisions. (e.g., Chakravarthy et al., 1999; Lam, 1997). In general, knowledge sharing can be operationalized as a processes of knowledge exchange between individual, during the processes of knowledge sharing individual exchange and share idea via social interaction and discussion which intern create new knowledge.

Hendriks (1999) Suggested that knowledge sharing involve at least two parties, knowledge sender (knowledge distribution) and knowledge recipient (knowledge acquisition) According to, Gupta and Govindarajan (2000), knowledge sharing can be examined via three levels, at nodal (individual), dyadic (between unit pairs), and systematic levels. In this research knowledge sharing is examined via the nodal level. Moreover, this research is focuses only on one side of knowledge sharing dyad which is knowledge distribution side or individual knowledge sharing capacity.

Knowledge sharing is fundamental part of knowledge management, knowledge sharing is all about "sharing it not hoarding it" (Milne, 2001). Individual knowledge is foundation of organization knowledge, an organization cannot uses their knowledge resource for competitive advantage without the effectiveness of knowledge sharing at individual level.

Concept of Learning Organization

Learning organization refers to “an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights” (Garvin, 1993: 80). A learning organization is an organization that has been structured with systems and norms to enhance a learning process, consist of a supportive environment which enrich creativity, teamwork, and knowledge creation (Confessore & Kops, 1998). Watkins and Marsick (1997) proposed an integrated model. According to them learning organization has seven dimensions. According to Watkins and Marsick’s (1997) “there are seven keys characteristic of learning organization: (a) Continuous learning, (b) Inquiry and dialogue, (c) Team learning, (d) Embedded systems, (e) Empowerment, (f) Connection to environment, (g) Strategic leadership”

In other word, learning organization is a combination of supportive environment and norm which encourage a dynamic learning process within an organization at both individual level and organizational level (Song, Joo & Chermack, 2009).

Concept of Individuals Perceived Organizational Commitment to Knowledge Sharing

Concept of individual’s perceived organizational commitment to knowledge sharing can be explained based on the context of human resource management (HRM) and intraorganizational knowledge transfer. First, according to HRM context, an individual’s perceive organizational commitment to knowledge sharing is a result of strong HRM policies which motivate and change attitude organization members to believe that the act of sharing knowledge is valued and respect in an organization, so all members of organization have commitment to share their knowledge with other (Minbaeva et al., 2012).

The concept of individual’s perceived organizational commitment to knowledge sharing in the context of interorganizational knowledge transfer can be conceptualized as a result of string HRM system which create a share perception of employee that sharing knowledge is valued in my organization, and it is an organizational commitment of every members of organization to do so.

In other words, concept of individual’s perceived organizational commitment to knowledge sharing is the extent to which organization’s members believe that their organization generally agree and value the knowledge sharing activity (Bock et al., 2005; Lin & Lee, 2004; Minbaeva & Pedersen, 2010).

Concept of Organizational Citizenship Behavior (OCB)

Smith, Organ and Near (1983) Stated that OCB is “employee’s behavior exceeding their formal duties and giving a positive contribution in the organization’s effectiveness.” According to

Kuehn and Al-Busaidi (2002), “OCB encompasses behaviors shown by employee which classified as an extra role and not formally assigned or granted by the organization.”

Organ (1988) develop an integrated model from work of which was the first person who initiated the term OCB. According to Organ (1988), five categories of OCB are described as follow:

- *Altruism*: Optional behavior which employee choose to do beyond of their duty.
- *Conscientiousness*: Optional behavior which employee choose to do beyond of their duty and minimum role requirement, for example, in the areas of obeying rules and regulations, attendance, taking breaks, and so on.
- *Sportsmanship*: When employees faces with disfavor circumstances, employees have willingness to tolerate without complaining to avoid “railing against real or imagined slights.”
- *Courtesy*: Optional behavior of employees, willing to avoid work related problems with other colleagues from occurring.
- *Civic virtue*: Act or behavior of organization members which indicated that they have sense of ‘share responsibility’ with their organization, they concern about the wellbeing of their organization.

In addition, OCB is behaviors of employee that are optional, beyond call of duty, and not include in the context of organization’s formal rewards structure. The component of OCB include obedience, participation, and loyalty (Nahapiet & Ghoshal, 1998). OCBs are expected when the actors are more emotionally attached to an organization with which they have membership.

Concept of Extrinsic Motivation

In HRM context, extrinsic motivation is conceptualized as incentives or financial rewards which motivate individual to act in a certain way. As Coleman (1990) argues, “extrinsic motivation could be seen as another key ‘individual condition’ that can be influenced through HRM, with practices such as performance management and compensation and reward systems.” According to Minbaeva et al. (2012) “Individuals are extrinsically motivated when their needs are satisfied indirectly, primarily through financial compensation but also through gaining power or recognition (Osterloh, Frost & Frey, 2002)”

In psychology field, extrinsic motivation refers to individual motivation which persuaded by external needs, mostly related to incentive or monetary compensation. Extrinsic motivation is an opposite of intrinsic motivation which persuaded by internal needs, such as, honor, satisfaction, or pride (Frey & Osterloh, 2005: 101-102).

IEAT Knowledge Management and Learning Organization Framework

Industrial Estate Authority of Thailand (IEAT) is a state owner of enterprise with profit making organization under the ministry of industry. Like many other leading organization, The IEAT has no

exception and must find ways to remain in doing business that can generate profits for its goal. That is to achieve economic growth in support Thailand value based economy (Thailand 4.0 model) and to bring the country out of the middle income trap. According to all the new challenges stated above, IEAT is demanded to motivate its employees to perform even more complex tasks. More importantly, a unique challenge is how to develop or install strategy of the organization that would help upgrading employee efficient skills and employee knowledge through the supply chain, as well as making decision more precise.

In order for IEAT to accomplish management and tasks which are more and more complex, it must bring out the most utility from its organization members by increased level of knowledge worker and encourage the flow of knowledge resources within its own organization, by pay attention to the effectiveness of knowledge sharing.

Currently, according to 2020 roadmap, IEAT has focused on knowledge and information management, with an attempt to develop and upgrade its own organization to become a learning organization. Every employees within IEAT must have an opportunity to access to information, be able to process knowledge in various fields, and apply in daily basis operation correctly (fast and suitable for situation). Moreover, IEAT is intended to create vision that change attitude of employees to exchange (share and receive) more knowledge, increase capacity of employees, and rise a sense of organizational citizenship (learning together).

Conceptual Framework and Hypotheses

After reviving the concepts of knowledge sharing, and all the influenced factors, author proposed a conceptual framework indicating the relationship between learning organization culture, an individual's perceived organizational commitment to knowledge sharing, organization citizenship behavior and extrinsic motivation on individual knowledge sharing.

Relationship between learning organization culture and Knowledge Sharing

The association between learning organization culture and knowledge sharing has been proved by numbers of previous studies and researches, according to the finding from previous studies of (Sung & Baek, 2011; Nonaka & Takeuchi, 1995; Robertson & Hammersley, 2000) indicated the important of cultural aspect to knowledge management and the association of organizational culture and individual knowledge sharing behaviors have been proved to be significant. De Long and Fahey wrote an article "diagnosing cultural barriers to knowledge sharing" (De Long & Fahey, 2000), confirmed that, organization culture is important factors associated with knowledge creation, knowledge sharing, and use of knowledge within organization. Because organization culture can

establish norm and environment which support and motivate individual to share their knowledge with others. The possible reason for this is that organization with learning culture has characteristic of hypertext culture egalitarianism and autonomy or organization with organic characteristic positively motivate individual to share more tacit knowledge and turn it to explicit knowledge. Based on the affirmations above, learning organization culture has characteristics which influence the extent of knowledge sharing with organization.

Organizational Citizenship Behavior (OCB) as Mediate Variable between Learning Organization Culture and Knowledge Sharing

Learning Organization Culture and OCB

Previous studies have been confirmed that organization culture significantly and positively influences OCB (Somech & Drach-Zahavy, 2004; Wayne et al., 1997; Werner, 2000; Sung & Baek, 2011). When employees feel that their organization have support culture the degree of OCB will increase. The possible reason behind this is that, according to Somech and Drach-Zahavy (2004), learning organization increase an environment which make employees or members of organization change their focus from personal immediate outcome to continuous learning by the organization as a whole.

OCB and Knowledge Sharing

A positive association of OCB and motivation to share knowledge is expected as previous studied and research indicated that knowledge sharing behavior as a result of OCB, when individual share knowledge with other member in organization it also show some perspective of OCB. Yu and Chu (2007) and Bock and Kim (2002) Also suggest that individual behavior knowledge sharing is a result of OCB. They found that experience workers intended to share their knowledge, experience, and important skills to new workers, participate in an activity beyond their job description without extrinsic rewards because they believe that knowledge sharing would rise the scope and depth of association among members of organization. Through quantitative study, Sung Jun Jo and Baek Kyoo Joo (2011) found that, OCB was positively associated with knowledge sharing intention (path coefficient = .56, $t = 7.21$). According to statement above, confirmed that OCB can enhance and motivate organizational members to participate in knowledge sharing activity.

Individual's Perceived Organizational Commitment to Knowledge Sharing as Mediate Variable

Learning Organization Culture and Individual's Perceived Organizational Commitment to Knowledge Sharing

Joo and Lim (2009), investigated the association of two main factors; contextual characteristics (job complexity and organizational learning culture) and personal characteristics (proactive personality) on organizational commitment and employees' intrinsic motivation. The result of this study indicated that learning organization culture was positively associated with organizational commitment. According to Joo and Lim (2009), "Organizational learning culture was found to be significantly associated with perceived job complexity (path coefficient = .21, $t = 3.13$) and organizational commitment (path coefficient = .38, $t = 6.04$)."

As statement above already show, when employees feel that their organization has characteristic of learning culture (continuous learning, system connection, dialogue and inquiry, and strategic leadership, established system, team learning, and empowerment,), the more employee's perceive commitment to knowledge sharing through psychologically attachment.

Though, number of studies have indicated specific organizational characteristic can increase individual's perceived organizational commitment to knowledge sharing and there is a possible association between organizational commitment and organization culture. But limited studies have investigate the association between learning organization and individual's perceived organizational commitment to knowledge sharing. There is still a gaps which needed to be fulfill (Mathieu & Zajac, 1990).

An Individual's Perceived Organizational Commitment to Knowledge Sharing and Knowledge Sharing

An individual's perceived organizational commitments to knowledge sharing and knowledge sharing intention are two factors which have been postulated to have positive relationship. Minbaeva et al. (2012), did quantitative study about individual level's knowledge transfer and HRM, the result of this research has shown that, the independent variable "*individual's perception of organizational commitment to knowledge sharing*" significantly and positively effect on knowledge exchange across employee groups (path coefficient = 0.36, $t = 8.17$).

Relationship between Extrinsic Motivation and Knowledge Sharing

The association between extrinsic motivation and level of knowledge sharing have been proved to be significant by various research and studies, for example, (Björkman, Rasmussen & Li, 2004; Bock et al., 2005; Bartol & Srivastava, 2002; Foss et al., 2009; Cabrera & Salgado, 2006; Osterloh & Frey, 2000) According to previous studies from various scholars, incentive reward or financial compensation directly encourage employees to share knowledge with their colleagues.

O'Reilly and Pondy (1980), did a research on organizational communication and according to them, individual knowledge sharing behavior is affected by rewards and penalties. Moreover, O'Reilly and Pondy (1980), argue that, members of an organization are motivated to share more knowledge with their colleagues when they know that they will receive rewards such as, promotion or incentive in return.

According to various scholars for example, (Gupta & Govindarajan, 2000; Quinn et al., 1996; Dyer & Nobeoka, 2000; Earl, 2001; Liebowitz, 1999) also support the relationship between incentive reward and level of knowledge sharing. Regarding to finding of researches when there is a significant change in incentive reward system individual will share more knowledge, especially via technology-based networks in organizations.

According to the statement above, research model and 4 hypotheses are proposed. Figure (1) summarizes the research model of this study.

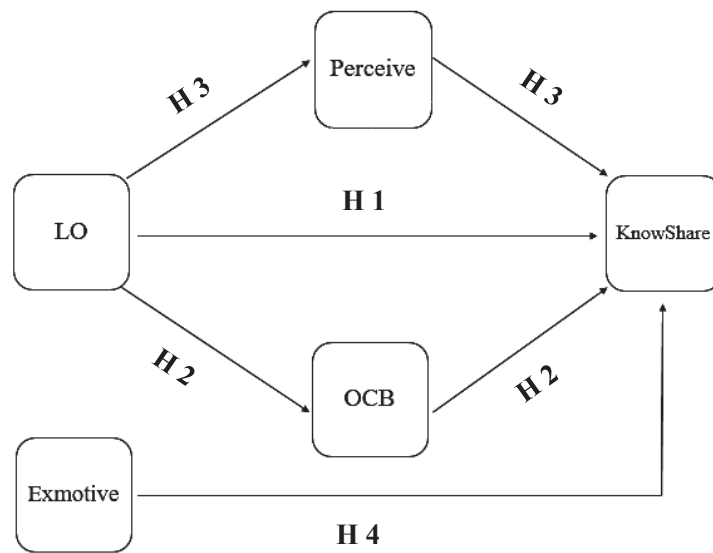


Figure 1. Research Model and Hypotheses

****Note:** LO = Learning organization culture

Perceive = Individual's perceived organizational commitment to knowledge sharing

KnowShare = Knowledge sharing

OCB = Organizational citizenship behavior

Exmotive = Extrinsic motivation

H1: Learning organization culture will be positively and directly related to the extent of knowledge sharing.

H2: Organizational citizenship behavior positively mediates the relationship between learning organization culture and the extent of knowledge sharing.

H3: An individual's perceived organizational commitment to knowledge sharing positively mediate the relationship between learning organization culture and the extent of knowledge sharing.

H4: Extrinsic motivation will be significantly related to the level of knowledge sharing

Research Methodology

In order to answer all three research questions as well as four hypotheses tested, a survey was assigned to those employees working full time with Industrial Estate Authority of Thailand (IEAT). This research employ quantitative methods including descriptive statistics, path analysis, Pearson Correlation and Collinearity Diagnostics, and stepwise regression analysis to validate and analyze the data obtained.

Sampling Design and Demographic Information

The target population of the study was full time employees from IEAT, a state own profits making organization. A survey was conducted utilizing questionnaires distributed to various working departments with kindly approved and handled by IEAT head office together with staff members. For this research the sample size was determined and suggested by Krejcie & Morgan (1970), with the allowance for sampling error of 5% at 95% confidential level, the sample size required of 593 employees at IEAT should be 234 respondents. 300 questionnaires were distributed to employees at IEAT and 247 questionnaires were returned. After revision, all questionnaires were entered into data based using SPSS program for further analysis.

Measurement and Operationalization

Measurement and operationalization used in this research as well as evaluation including reliability and validity of measures are summarized and tabulated in the following sections. A 5 point Linkert Scale was applied through all the questionnaires as when individual respondent did in a survey study. Scores from all respondents obtained were categorized, complied and computerized accordingly.

(1) Dependent Variables

As appeared in table (1), 4 variables factors known to influence on knowledge sharing intention are listed together with how to measure each of them quantitatively.

Table 1. Illustrate operationalization, measurement of dependent variables

Variable	Operationalization	Measurement	References
Learning organization culture (LO)	“Ability of employees in an organization to learn faster than workforce in other organization, which constitutes to competitive advantage.”	DLOQ scale, 21 questionnaires, 5-point Likert scale.	Watkins and Marsick, (1997)
Extrinsic motivation	“Individual-level responsiveness to incentives to share more knowledge and information.	2 questionnaires, 5-point Likert scale.	Dana B. and other, (2012)
Organizational citizenship behavior (OCB)	“A behavior of employees, represent loyalty to the organization, done without formally commanded and beyond job description”	16 questionnaires, 5-point Likert scale.	Lee and Allen, (2002)
Individual’s perceived organizational commitment to knowledge sharing	Dana B. and other, (2012.) “The extent to which the individual believes that his/her immediate group and the organization as a whole generally agree that knowledge sharing is a valued activity.”	3 questionnaires, 5-point Likert scale.	Dana B. and other, (2012.)

(2) Independent Variable

In this study, knowledge sharing was assigned as the independent variable (Table 2). This parameter was estimated by the act of survey questionnaires with 5 Point Linkert Scale. Scores obtained under this measurement from all respondents (N=247) were analyzed against those 4 variables factors using a stepwise linear regression. Likewise correlation coefficients derived from the effect of variable factors on knowledge sharing were brought back in to a path model for further analysis.

Table 2. Illustrate operationalization, measurement of independent variables.

Variable	Operationalization	Measurement	References
Knowledge Sharing	“knowledge which employees within organization work or share to improve individual work skill”	7 questionnaires, 5-point Likert scale.	De Vries et al. (2006); Goh (2002); Argote and Ingram (2000); and the Garvin (1993)

The Validity of the Measurement

The scale of this study was reviewed and approved by the advisor and committee members. The scales were originally all in English. When the researcher translated them into the Thai language in order to be used in the study, an expert translator was in charge to give great assistance with the back translation process to ensure the correct meaning of the questionnaire’s items. Additionally, factor analysis was used to test the construct validity, to identify the groups of inter-related variables, to reduce the number of variables, and to confirm for the researcher which variables belonged to which group.

Based on the results of factor analysis indicated that the scale measuring learning organization culture, extrinsic motivation, organizational citizenship behavior (OCB), individual’s perceived organizational commitment to knowledge sharing regarding knowledge sharing, had factor loading scores of 0.551–0.940, which indicated that all of the items carried qualified questions for the improvement of individual capability in knowledge sharing.

Moreover, researcher also conducted the Kaiser-Meyer-Olkin (KMO) and Bartlett’s Sphericity tests. As regard to the result of KMO, all of the values are exceed 0.5, which can guarantee sample adequacy of the research. According to (Kaiser, 1974: 35), when the KMO’s result are not lower than 0.5 it is indicate that a sample is large enough to provide the required precision of the survey or test results Furthermore, the Barlett test confirmed that variables used in this research were uncorrelated in the population.

The Reliability of Measurement

To test reliability of questionnaires, this research used SPSS program together with Cronbach's alpha, which is a model of internal consistency based on the average inter-item correlation applied. All scale items used in this study have their Cronbach's Alpha value ranged between 0.867 to 0.959. According to Sekaran (2003: 202) this demonstrated high adequate levels of reliability.

Correlation Matrix of the Independent Variables

Multicollinearity is a common problem that can occur when conducting a linear models. In order to investigate the multi-collinearity problem, Pearson Coefficients are conducted by the researcher to determine the relationships among independent variables. According to the result of Pearson correlation analysis, there was no multi-collinearity problem in this research. The coefficients between the Independent Variables were lower than 0.80, which indicate that a level of correlation value is acceptable (Kumari, 2008: 91).

Additionally, in order to guarantee that there was no multi-collinearity problem. Researcher also applied the tolerance and variance inflation factor tests (VIF) to quantify collinearity level of all independent variables. (O'Brien, 2007: 647). Regarding to the results the tolerance of the independent variables ranged from 0.412-0.777 and the smallest tolerance was 0.412. According to Kumari (2008: 93), to avoid multi-collinearity problem, tolerance value must be exceed 0.10. Moreover, the VIF value of all independent variables also assurance that there was no multi-collinearity problem because all value were higher than 10 (Kumari, 2008: 93).

Results

Based on the result of the path model for independent and dependent variables in relation to knowledge sharing of IEAT was developed and presented in Figure (2). Based on the analysis of this model, all four hypotheses tested (Hypotheses 1, 2, 3 and 4) were confirmed as supported by those correlation coefficient values which are illustrated in Table (4). Likewise each hypothesis testing result is highlighted as follows: Hypothesis 1: Learning Organization Culture was found significantly associated with knowledge sharing. Hypothesis 2: Organizational Citizenship Behavior (OCB) was positively mediated the relationship between learning organization culture and the extent of knowledge sharing. Hypothesis 3: An individual's perceived organizational commitment to knowledge sharing positively mediating the relationship between learning organization culture and the extent of knowledge sharing. Similarly with hypothesis 4: Extrinsic motivation was significantly related to the level of knowledge sharing.

The overall results of effects of factors on knowledge sharing intention are presented in Table (3). It was found that variable factors like learning organization culture held a positive effect on knowledge sharing. Its Beta value of 0.174 was recorded with significant at the level of 0.05 level. Moreover this learning organization factors still influenced the knowledge sharing indirectly via OCB factors. The coefficient value at 0.188 was found. While another indirectly positively affect via individual's perceives organizational commitment to knowledge sharing was added (Beta= 0.153). Because of this the total effect of learning organization culture had contributed to knowledge sharing at highest magnitude (Beta=0.689). As expected extrinsic motivation also added some directly input on knowledge sharing with its coefficient value at 0.115. Likewise both OCB and individual's perceived organizational commitment to knowledge sharing were found to hold quite strong positive relationships on knowledge sharing as well. Their Beta value are reported at 0.382 and 0.247, respectively.

Table 3. Direct, Indirect, and Total Causal Effects of factors on knowledge sharing

Independent Variable	Direct	Indirect	Total
Learning Organization Culture (LO)	0.174	(Via OCB : $0.494 \times 0.382 = 0.188$), (Via Perceive: $0.621 \times 0.247 = 0.153$)	0.515
Individual's perceived Organizational Commitment to Knowledge Sharing (Perceive)	0.247	-	0.247
Organizational Citizenship Behavior (OCB)	0.382	-	0.382
Extrinsic Motivation (Exmotive)	0.115	-	0.115

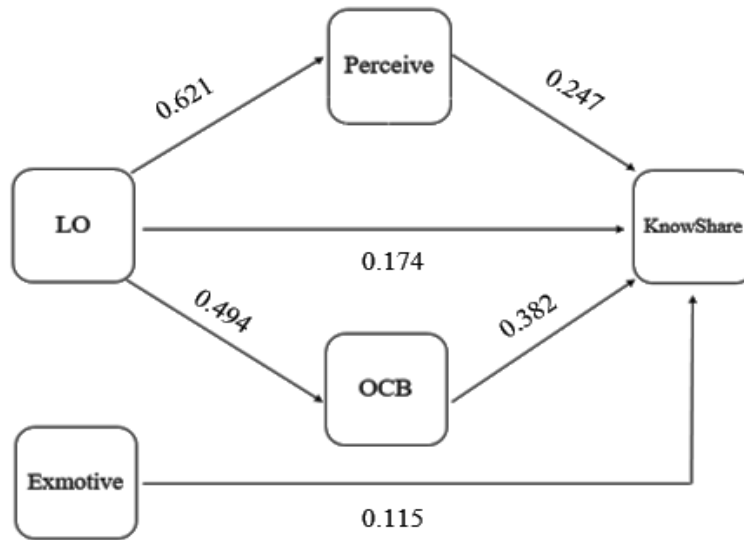


Figure 2. Path Model for Independent and Dependent Variables In relation to Knowledge Sharing of IEAT Employees (N = 247)

****Note:** Coefficients were significant at the .05 level.

LO = Learning organization culture

Perceive = Individual's perceived organizational commitment to knowledge sharing

KnowShare = Knowledge sharing

OCB = Organizational citizenship behavior

Exmotive = Extrinsic motivation

Figure (2) illustrate the direct and indirect effect of learning organization culture, organizational citizenship behavior, individual's perceived organizational commitment to knowledge sharing, and extrinsic motivation on the extent of knowledge sharing at IEAT.

Discussion

In this section, research finding are discussed in detail, followed by the theoretical implication for research in organization behavior and human resource management (HRM) fields. Furthermore a key managerial implication for IEAT to improve level of individual knowledge sharing. Lastly, a recommendation for future research based on limitation of this research are also proposed.

Research Findings

This research mainly attempted to clarify and examine the association between learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation to individual knowledge-sharing

intention. Via quantitative methods to determine these variable factors and their effects on knowledge sharing as described in previous sections, the research findings are presented as follow.

First, according to the result of this research, participants will have higher level of knowledge sharing intention when they perceive that their organization exhibit a higher level of learning organization culture and when they carry out a higher level of OCB. These results are in line with the findings confirmed by various previous literatures for example, (Brock & Kim, 2002; Nonaka & Takeuchi, 1995; De Long & Fahey, 2000), organization culture is main factor which determine how organizational knowledge is shared, created, speeded, applied, and used. Moreover, this research finding is also in agreeable with Hislop's (2003) report suggesting knowledge sharing intention of individual is contributed and reinforced by OCB. Knowledge sharing is an indicator of strong OCB within organization. Since the process of knowledge sharing is consisted of voluntary act which is not requested and beyond duty, OCB can create environment of organizational solidarity that foster knowledge sharing behavior. Thus, when individuals have physiologically attachment to their own organization, they will automatically motivate to share more knowledge. A members of organization who are internalized with their organizations shell cooperate with their colleagues and share more knowledge in order to accomplish organizational goals.

Second, consistent with a findings of the previous studies of Joo and Lim (2009), this research significantly confirmed association between learning organization culture and OCB. Thus, OCB was proved to fully mediating the association between learning organization culture and knowledge-sharing. Learning organization culture and its sub dimension which include for example, team learning; supporting environment; and embedded system can increase level of OCB. The core value of learning organization culture expand individual perspective to grow beyond their own interest (from personal goal to organizational goal) and foster all members of an organization to help their coworker without hesitation whenever their organizations are at risk or threatened. According to this, learning organization culture create an environment in which individual feels more attachment with their organization or OCB.

Third, this research also found that learning organization culture is significantly and indirectly influence level of knowledge sharing through the individual's perceived organizational commitment to knowledge sharing. Learning organization help create a share perception that sharing knowledge is valued in an organization and according to Minbaeva et al. (2012), when members of organization perceive that knowledge sharing is valued in their organization, each member will automaticity motivate to share more knowledge and according to that the extent of knowledge sharing will increase. In different meaning, knowledge sharing activities is related to individual perception about his/her organizational norm; value; and share perception.

Lastly, this research confirmed the association between extrinsic motivation (incentive and reward) and knowledge sharing did exist. Again the outcome is in line with Kankahali et al. work, which indicate that it is nature of individual that extrinsic benefit can motivate their behavior, including knowledge sharing behavior. Moreover, this also supported by Cabrera and Cabrera which found that individuals are more willing to cooperate and contributing in knowledge sharing activities when they know that they will get reward or incentive in return. However, this result controverts with Minbaeva et al. (2012) finding which found that the direct association between extrinsic motivations to knowledge sharing was weakly significant when compare to others factors for example intrinsic motivation or social interaction.

Theoretical and Practical Implications

As regards to theoretical and practical implications, this research contributed the understanding of knowledge sharing in organization by integrating cultural, psychological, and behavioral aspects of knowledge sharing of individuals. The research output provide several important contributions to human resource management field, organization behavior field and a key managerial implication for IEAT.

Implication to Organization Behavior Field

First, this research agreed with the perspective that learning organization culture has positive relationship with organizational citizenship behavior (OCB). Organization culture which support learning, social collectivity, empowerment, shared vision, and team work can produce organization citizenship behavior (Nahapiet & Ghoshal, 1998). When the level of group solidarity is higher members of organization will be more willing to sacrifice their own goals for the collective value. Moreover, this research also presented a confirmation that organization citizenship behavior (OCB) is affected by learning organization culture which promotes learning processes and mindset of organization as a whole.

Second, another equivalent implication of this research is the association of organization culture on knowledge sharing become an essential bond. Organization culture create an environment which indicate individual's perception and action that are related to creating, sharing, and use knowledge (De Long & Fahey, 2000). This research confirmed that learning organization culture has direct relationship with knowledge sharing. These results confirmed that learning organization culture is an equivalent factor which generate a condition which increase individual motivation to share more knowledge.

Third, despite the important role of learning organization culture to knowledge sharing, this research also emphasizes the significant role of OCB in association with the improvement of knowledge sharing. Researchers believe that an individual decision to share knowledge, which is a behavior in which an individual must sacrifice a monopoly position of knowledge, is dependent upon the knowledge owner. Individuals with a higher level of OCB will cordially and voluntarily share their knowledge with colleagues without any hesitation or expectation of reward in return.

Implication to Human Resource Management Field (HRM)

The main research finding provides statistical evidence in support of the argument that the strong human resource management system, for example performance management, incentive and reward system, is significantly associated to individual knowledge sharing behavior. According to research findings, individuals are motivated to share knowledge when they know that they will receive extrinsic benefits (financial compensation or promotion) in return. Further, this research explicitly compares two main factors (organizational climate-based factors and incentives-based) which gave the result indicating that organizational environment or climate which supports a strong pro-knowledge-sharing culture can enhance the level of individual knowledge sharing better than reward-based incentive.

Moreover, this research also confirmed the role of individual perceived organizational commitment to knowledge sharing that encourages and influences the extent of knowledge sharing. Coleman (1990) argues that, these individual perceptions or individual conditions of action can shape individual decisions of action, for example, to share or not to share knowledge. When members of an organization believe that their organization has commitment and norms which value knowledge sharing, individuals within such an organization will automatically behave in the way that are aligned with such expectations. The implication for this is that, HRM systems can contribute to create a strong signal that knowledge sharing activities are respected and valued. As a result of this, when the level of a share perception is higher, the level of knowledge sharing within an organization will also increase.

Managerial Implication for IEAT

For managerial implications for IEAT, this research also highlighted the significance of organization culture and norms as well as appropriate performance management in knowledge sharing. First, to enhance knowledge sharing, IEAT needs to emphasize more on how to create organization culture and norms that enhance the level of knowledge sharing at all levels, because knowledge sharing cannot be achieved by only adopting high technology in knowledge management systems or by initiating new policies and strategies to improve individual knowledge sharing capacity. Knowledge management policies can be implemented more effectively in a supportive environment of learning culture and norms. Thus, it is not surprising that in this research learning organization

culture has positive and significant correlation with individual's perceive organizational commitment to knowledge sharing and OCB as well as knowledge-sharing intention. To summarize, HR professionals can increase level of individual knowledge sharing in their organization by create a sense of organizational citizenship and by developing an organizational climate that increases and facilitates learning in organization.

Second, another critical implication for management is IEAT should make sure that their human resource management (HRM) system and practice are in line with organizational objective, in this case is to facilitate knowledge sharing. For instance, performance management (training and development, compensation and rewards, and talent management) which is a key mechanisms in HRM must support and contributing members of organization to share more knowledge and initiate a strong signal that knowledge sharing behavior is valued. Knowledge sharing behavior should be included in a key performance indicators (KPI), Compensation and reward system must be in line to motivate individual to share more knowledge with their colleagues, in addition training and development processes must not serve only as tools to increase individual improvement performance but must also support the creation of informal networks across different department of organization to advocate knowledge sharing, and focus on knowledge-sharing behavior as a major condition for talent-pool inclusion.

Limitations and Recommendations for Future Research

In terms of methodology, several limitations appeared. First, this study relied only on a survey questionnaire which were distributed to various working departments according to the approval and scrutinize of the IEAT head office. Distribution of the whole set of questionnaires was kindly handled by IEAT. As regard, the generalizability of this research is weaken. For instance, sampling method used in this research was unevenly collected from IEAT. Moreover, the number of female population in this empirical study was tremendously exceeded the total male population. According to the uneven distribution, result of research could be affect from a large female-oriented biased. Biased data inhibit researchers to conduct comparison analysis. Another limitation is this research has conducted a cross-sectional survey method which can be further investigate on causality among the variables. Lastly, the sample applied in this research was limited to employees in the IEAT cultural setting which have similar demographic characteristics.

To overcome these limitations, the generalizability of the present study must be increased, the convenient sampling should be avoided. Future research should be based on a longitudinal study with rigorous sampling strategy. Data should be distributed to proportionally match the target population, including participant with various demographic backgrounds, for example, different location, work setting, and culture.

Moreover, future research could adapt and apply other factors which did not propose in this research to study the association between those other factors and individual knowledge sharing. For example, variables such as communication, information technology, leadership, environment of knowledge sharing, and nature of knowledge (tacit and explicit) should be investigated in future research to see potential effect relating to individual knowledge sharing. Apart from that, more practical implications are needed for knowledge sharing field. In order to have a comprehensive result, future research should study more precisely in the private sector. Additionally, because of learning organization culture was confirmed to be the most equivalent factors which enhance the improvement of knowledge sharing, future researches are required to investigate what are the key factors which facilitate the implementation of learning organization culture for the improvement of the knowledge sharing. Lastly, even though the knowledge sharing was an interesting variable to study, but there are different dimension in the field of knowledge management that still have room for further investigation for example, knowledge transfer (within and between organizational level), and knowledge exchange (knowledge sender and receiver).

References

- Bartol, K. M., & Srivastava, A. (2002). Encouraging knowledge sharing: The role of organizational reward systems. *Journal of Leadership & Organizational Studies*, 9, 64-76.
- Bock, G. W., & Kim, Y. G. (2002). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing. *Information Resources Management Journal*, 15(2), 14-21.
- Bock, G., Zmud, R., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing. *MIS Quarterly*, 29(1), 87-111.
- Björkman, I., Rasmussen, W. B., & Li, L. (2004). Managing knowledge transfer in MNCs: The impact of headquarters control mechanisms. *Journal of International Business Studies*, 35, 443-455.
- Cabrera, W. C. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, 17, 245-264.
- Chakravarthy, B., Zaheer, A., & Zaheer, S. (1999). *Knowledge Sharing in Organizations: A Field Study*. St. Paul, MN: Strategic Management Resource Center, University of Minnesota.
- Coleman, J. S. (1990). *Foundations of Social Theory*. Cambridge, MA, and London: The Belknap Press of Harvard University Press.
- Confessore, S. J., & Kops, W. J. (1998). Self-directed learning and the learning organization: Examining the connection between the individual and the learning environment. *Human Resource Development Quarterly*, 9(4), 365-375
- De Long, D. W., & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *The Academy of Management Executive*, 14(4), 113-127.
- Dyer, J. H., & Nobeoka, K. (2000). Creating and managing a high-performance Knowledge-sharing network: The Toyota case. *Strategic Management Journal*, 21(3), 345-367.
- Earl, M. (2001). Knowledge management strategies: Towards a taxonomy. *Journal Management Information Systems*, 18, 215-233.
- Frey, B. S., & Osterloh, M. (2005). Yes, managers should be paid like bureaucrats. *Journal of Management Inquiry*, 14, 96-111.
- Foss, N. J., Minbaeva, D., Pedersen, T., & Reinholt, M. (2009). The impact of autonomy, task identity, and feedback on employee motivation to share knowledge. *Human Resource Management*, 48, 871-893
- Garvin, D. A. (1993). Building a learning organization. *Harvard Business Review*, 7(1), 78-91.
- Gupta, A. K., & Govindarajan, V. (2000). Knowledge management's social dimension: Lessons from Nucor Steel. *Sloan Management Review*, 42(1), 71-80.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management*, 6(2), 91-100.
- Hislop, D. (2003). Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee Relations*, 25, 182-202.

- Ipe, M. (2003). *Knowledge sharing in organizations: A conceptual framework*. *Human Resource Development Review*, 2, 337-359.
- Joo, B., & Lim, T. (2009). The impacts of organizational learning culture and proactive personality on organizational commitment and intrinsic motivation: The mediating role of perceived job complexity. *Journal of Leadership & Organizational Studies*, 15, 48-60.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36.
- Krejcie, R. V., & Morgan, D. W. (1970). *Determining Sample Size for Research Activities*. Educational and Philological Management.
- Kuehn, K. W., & Al-Busaidi, Y. (2002). Citizenship behavior in a non-Western context: an examination of the role of satisfaction, commitment and job characteristics on self-reported OCB. *International Journal of Commerce & Management*, 12(2), 107-125.
- Kumari, S. S. S. (2008). Multicollinearity: Estimation and elimination. *Journal of Contemporary Research in Management*, 3(1), 87-95.
- Lam, A. (1997). Embedded firms, embedded knowledge: Problem of collaboration and knowledge transfer in global cooperative ventures. *Organization Studies*, 18(6), 973-996.
- Liebowitz, J. (1999). Key ingredients to the success of an organization's knowledge management strategy. *Knowledge and Process Management*, 6(1), 37-40.
- Lin, H., & Lee, G. (2004). Perceptions of senior managers toward knowledge-sharing behavior. *Management Decision*, 42, 108-125.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108, 171-194.
- Milne, P. (2001). Rewards, recognition and knowledge sharing: seeking a causal link. *Australian Academic Research Libraries*, 32(4), 321-332.
- Minbaeva, D. B., Makela, K., & Rabbiosi, L. (2012). Linking HRM and knowledge transfer via individual mechanism. *Human Resource Management*, May-June 2012, 51(3). 387-405.
- Minbaeva, D., & Pedersen, T. (2010). What drives knowledge sharing behavior of individuals? *International Journal of Strategic Change Management*, 2, 200-222.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23, 242-266.
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- O'Brien, R. M. (2007). A caution regarding rule of thumb for variance inflation factors. *Quality and Quantity*, 41, 673-690.
- O'Reilly, C., & Pondy, L. (1980). Organizational communication. In Kerr, S. (Ed.). *Organizational Behavior*. Columbus, OH: Grid.
- Organ, D. W. (1988). *Organizational Citizenship Behavior: The Good Soldier Syndrome*. Lexington, MA: Lexington Books.

- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science*, 11, 538-550.
- Osterloh, M., Frost, J., & Frey, B. (2002). The dynamics of motivation in new organizational forms. *International Journal of the Economics of Business*, 9, 61-77.
- Quinn, J. B., Anderson, P., & Finkelstein, S. (1996). Leveraging intellect. *Academy of Management Executive*, 10, 7-27.
- Robertson, M., & Hammersley, G. (2000). Knowledge management practices within a knowledge-intensive firm: The significance of the people management dimension. *Journal of European Industrial Training*, 24, 241-253.
- Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach*. New York: John Wiley.
- Song, J. H., Joo, B., & Chermack, T. J. (2009). The dimensions of learning organization questionnaire (DLOQ): A validation study in Korean context. *Human Resource Development Quarterly*, 20, 43-64.
- Somech, A., & Drach-Zahavy, A. (2004). Exploring organizational citizenship behavior from an organizational perspective: The relationship between organizational learning and organizational citizenship behavior. *Journal of Occupational and Organizational Psychology*, 77, 281-298.
- Sung, J. J., & Baek, K. J. (2011). Knowledge sharing: The influences of learning organization culture, organizational commitment, and organizational citizenship behavior. *Journal of Leadership & Organizational Studies*, 18(3) 353-364.
- Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68, 655-663.
- Watkins, K. E., & Marsick, V. J. (1997). *Dimensions of the Learning Organization*. Warwick, RI: Partners for the Learning Organization.
- Wayne, S., Shore, L., & Liden, R. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal*, 40, 82-111.
- Werner, J. M. (2000). Implications of OCB and contextual performance for human resource management. *Human Resource Management Review*, 10, 3-24.
- Yu, C., & Chu, T. (2007). Exploring knowledge contribution from an OCB perspective. *Information & Management*, 44, 321-331.