FACTORS INFLUENCING THE IMPROVEMENT OF KNOWLEDGE SHARING: EMPIRICAL STUDY OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND (IEAT)

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A Dissertation Submitted in Partial
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ABSTRACT

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The important of knowledge sharing in knowledge based economy is very critical for the competitiveness of any organizations. 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.

This research was design to investigate the relationship among learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior, and extrinsic motivation on knowledge sharing at Industrial Estate Authority of Thailand (IEAT), and to evaluate both direct and indirect relationships among those selected factors in association with knowledge sharing within IEAT.

Researcher conducted a survey to collect data from full time employee of IEAT. A survey questionnaires 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. 300 questionnaires were distributed to all respondents and researcher received 247 questionnaires.

To analyze data collected form survey, researcher uses (SPSS) program and AMOS program (Analysis of Moment Structure) for hypotheses testing. Through this empirical work, a path model was develop and drawn. Additionally this research also employed a statistical method namely stepwise regression to analyses step by step of variable factors which influencing on knowledge at IEAT.

The result showed that all variables studies (learning organization culture,

individual’s perceived organizational commitment to knowledge sharing, organizational citizenship behavior, and extrinsic motivation) were indicated to have a significant relationship on knowledge sharing at IEAT. Based on the finding of this research learning organization culture was the only factor found to have both direct and indirect positive effects on the extent of the individual sharing knowledge while other three factors namely: individual’s perceived organizational commitment to knowledge sharing, organizational citizenship behavior and, extrinsic motivation, presented only a direct effect on this capability.

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Pitchaya Javakorn

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Within a knowledge-based economy, a number of organizations are rely on knowledge assets as a tool for organizational achievement as well as many scholars and enterprisers have admitted that organization can use their knowledge to increase their competitive advantage. For the past two decade knowledge sharing (at individual level) has gained much attention, according to the fact that organization's knowledge can hardly exist if knowledge at individual level is not be shared among members within the organization.

Meaning of knowledge sharing are called by various but related label for example, "knowledge transfer", "knowledge flows", "knowledge acquisition", and "knowledge mobilization". However, concepts of knowledge sharing and knowledge transfer are not totally the same, knowledge sharing used to describe the flow of knowledge at individual level but knowledge transfer mostly used to explain to flow of knowledge at the unit, departmental, or organizational level.

Within a highly competitive environment it is necessary for every workplaces to prepare its workers to have more knowledge in order to perform challenge and complex tasks. As mentioned above, now the world has stepped in to globalization era, and as competition in business world has increased, knowledge as new kind of capital have become the most powerful resource for enhancing organizational competitiveness. Since every organization composed of its people, the extent to which the organization's members can acquire, use, as well as share, knowledge resources is critical to organization survival and competitiveness.

As result of this, organizations must enhance knowledge processed by their member employees in order to go along with the era of knowledge based economy. Therefore, it is critical for organization development to increase productivity level of knowledge

worker. (Løwendahl, Revang, & Fosstenløkken, 2001) (Burgess, 2005)Specified the utility of knowledge sharing in various ways. As can be seen in the following passage: (Burgess, 2005, p. 325)

> "First, knowledge sharing can support succession planning by ensuring that key new staff members are equipped with essential information and knowledge from those that ignoring to obtain knowledge provided by the organization. Second, knowledge sharing is a tool that creates system and documentation methods instead of becoming stored in isolated parts. Also, information can be shared and available to other employees in the organization. Finally, it is important to maintain the existence of knowledge because this will enhance effective transitions and prevent hindrances in organizational work procedures." (Burgess, 2005, p. 325)

Moreover, knowledge sharing is a tools that employees, at individual level, can contribute to organization knowledge management system, innovation, and in the long run can help organization increase competitive advantage. In other words knowledge sharing transmit knowledge at individual level to organization level. In addition, knowledge sharing allow organization to accumulated knowledge based resources

According to studies done by many scholars, knowledge sharing is one factors which lead to costs reduction, time reduction in development of products, better team performance, increase innovation capacities, and enhance firm's performance (Arthur & Huntley, 2005; Cummings, 2004; Hansen, 2002; Mesmer-Magnus & DeChurch, 2009)

As the statement above already mentioned about the benefits and significant of knowledge sharing with in knowledge economy, this research focuses on a particular organization, The Industrial Estate Authority of Thailand (IEAT) which is a state enterprise under the Ministry of Industry.

Industrial Estate Authority of Thailand (IEAT) a state owner of enterprise that is administered under Ministry of Industry. It was initially formulate by the declaration of the revolutionary council No.339 dating back on 13 December 1972.

Later on the IEAT was gradually developed and established by the first Industrial Estate Authority of Thailand Act (1979). Following by twice revision of the act in 1991 and 1996, the IEAT was finalized and implemented.

Since then IEAT has been served our country as a government instrument in moving forward of industrial sector through the development of industrial estates as well as to value added in the industrial investment. As a result, bringing together of industrial plants places them in one site with systematic management. Furthermore this approach will bring balance economic development into all regions within the country.

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. In order to make the IEAT become competitive in 2020 and beyond, those challenge that the manufacturing has to face as well as business and technology trends must be addressed. Detail bout development of industry 4.0 and road to 2020 plan are explained as follow.

The development of industry 4.0 is all about the integration of the manufacturing factor with the internet of thing (IOT) in to the production system, starting form new material used, machine instruments and automate system. In addition robots will play a key role in various production line. While those robots after equipped with IOT they can link, communicate, and exchange data among themselves. As a result, more efficient production process is expected. For the industry 4.0 development, the cyber physical system (CPS) would have play an important role in connecting the digital and virtual would in to reality. Because of this manufacturing plants, logistic system, and customer can do business in real time manner with income management and operation efficiency.

In 2020 following factors will force the IEAT for necessary adjustment which include:

1) Competitive climate: Business competition will become strong from the drastically change in communication, knowledge transfer, and technology. Operators

will have to accelerate their potential capacity to meet with the market demands in order to keep their opponents behind.

2) Sophisticated customers: Developing and emerging countries both will have their own and more specific demand of products customized to their needs, not like mass production for all.

3) Basis of competition: Innovation and creativity become the most have of all industrial firms in business. The two in combination must be utilized in all process of making the products on services from upstream to downstream.

4) Development of innovation process technologies: From 2020 onward, we will are scale and scope of production into something we never experience before, starting from the advanced development in technology and innovation.

5) Environmental protection: The environment still remains one of the important factors influencing the business production sectors. Environmental protection must be placed in line with the trend of new development economy. High and advanced technology must be in line in manufacturing sector to avoid environmental damage and degradation.

6) Information and knowledge: The manufacturing segment must have its own data storage with the system design for further analysis as well as introducing such data in to the new format ready for use and working decision.

7) Global distribution: Competing for raw materials and other recourses to make the product will become more aggressive at the global level. Because of every firm and company must be ready and well prepare in advance.

In order to adopt the above new challenges, IEAT is aligned to stimulate all employees to perform even more complex jobs (tasks). More importantly, a unique challenge on the road toward 2020 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 to maintain level of competitiveness, IEAT has to seek a better understanding of its current environmental conditions. Likewise, suitable strategies must be introduced to encourage level of employee’s knowledge as well as to stimulate knowledge sharing among employees.

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 major factors such as, individual personal briefs 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 and 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 factor namely, the nature of knowledge, individual motivation to share, opportunities to share, and the culture of the work environment. Bock and Kim (2002), 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 organizational social capital factors such as learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation factor on individual knowledge sharing have been neglected, which should be further clarify in future research.

According to (Jo & Joo, 2011)

> To increase the generalizability of the previous studies, there is a need for further empirical study based on individual data gathered from a wider variety of firms from different country origins. Including participants with

more diverse demographic backgrounds, locations, cultures, and work settings is recommended.

As mention above, research on knowledge sharing at individual level has faced difficulty, there are more to discover about this topic and news empirical evidences are required in order to understand knowledge sharing process which is a very complex dynamics. Currently, the association between 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 clarify 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 clarify whether the selected factors really serve knowledge sharing in IEAT or not.

1.2 Research Objectives

1) To clarify and examine 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) To compare both direct and indirect relationships among selected factors associated with knowledge sharing within IEAT.

1.3 Scope of Study

1.3.1 The research questions define the scope of this research. Accordingly a detailed review of the literature will be made on the concepts related to research questions and objective: knowledge sharing, organizational social capital, extrinsic motivation and theory of planed behavior.

1.3.2 Second, according to research problems which stated above, the major focus of this research is on clarifying the associations among learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on knowledge sharing. That is, the focus is on individual level of analysis. The frame of sample respondents are permanent workers within IEAT organization.

1.3.3 Third, the scope of this research concerns knowledge sharing at the nodal level. Moreover, the term of knowledge sharing used in this research is focuses only on one side of the knowledge sharing dyad which is the knowledge distribution side or the individual capacity of sharing knowledge.

1.3.4 Lastly, this study will be limited to knowledge sharing of employees in the Industrial Estate Authority of Thailand (IEAT)

1.4 Benefits of the study

Within the knowledge based economy human quality is very critical element for any organization to be successful. Knowledge is valuable asset and is significant to organization survival, both private as well as public organization are considering this issue as critical.

This research focuses on one particular organization named The Industrial Estate Authority of Thailand (IEAT). This research will contribute to the benefit of organizations, management, and theoretical. Moreover, this research will signal the necessity and urgency which lead to the change in policy design and implementation.

1.4.1 Organization Benefits

The results of this research will provide a meaningful direction for future development plans and policies designs to strengthen individual knowledge sharing of the organization.

1.4.2 Management Benefits

The research findings will provide a meaningful guide line for management strategies and policies aiming to develop and improve individual knowledge sharing capacity at the IEAT.

1.4.3 Theoretical Benefits

The outcome from this research widen up to organization behavior field and human resource management field by examining the culture, psychological, and behavior dimensions, including learning organization culture, organization citizenship behavior, individuals perceive organizational commitment to knowledge sharing, and extrinsic motivation that can improve the level of individual's knowledge sharing at IEAT.

CHAPTER 2

LITURATURE REVIEW

In this chapter theories and related studies on knowledge sharing are reviewed. First section, elaborate about concept of knowledge. Second section, discussed about individual knowledge in organization. Third section, discussed about knowledge management. Forth, section discussed the perspective of knowledge sharing in organization. Fifth section, presents concepts and meaning of selected factors as variables influencing on knowledge sharing. And last section, TPB theory and individual knowledge sharing are discussed.

2.1 Defining knowledge

According to Davenport and Prusak (1998) and Ipe (2003)) knowledge is something we learned and gained through experience. According to Nonaka Takeuchi a famous scholar on knowledge management, there are two broad categories of knowledge, explicit knowledge (knowledge that have already been codify in governed with formal rule) and tacit knowledge (personal knowledge, subject hardly explain to other)

Based on Halal (2008) “Knowledge is an intangible asset that increases when shared”. In different meaning, knowledge sharing is passive and active activities which the owner of knowledge can share and learn new knowledge simultaneously. “Both parties would then continue to own their original knowledge, while also having the new knowledge they gained, thereby increasing the total amount of knowledge in use”. This leads to the importance of knowledge sharing. (Halal, 2008)

Knowledge can be divided in to three categories which are, individual knowledge, organization knowledge, and structural knowledge.

1) Individual knowledge: is knowledge that an individual creates, specific to each individual.

2) Organization knowledge: is knowledge of an organization, emerging from share and exchange of knowledge between individual and unit within an organization. Organization knowledge can be used to increase organization advantage.

3) Structural knowledge: is knowledge that has been formed by an organization in to system of sharing, receiving, learning, and recreating of knowledge.

The three categories of knowledge stated above can be both ‘Tacit’ and ‘Explicit knowledge. According to, Polanyi (2009), tacit knowledge is knowledge which emerge within individual and stay within individual (know-how, know-why). Tacit knowledge can be created form experiences or talents. This type of knowledge can be consider as personal advantage of each individual and hardly develop, share, or translated into document. Explicit knowledge, is rational knowledge which can be shared, developed, and documented in form of for example; report, manual, book, which can be easily understand by others.

2.2 Individual knowledge in organization

There are multiple level of knowledge within organization. Generally, organization knowledge can be categorized in to three groups: (1) knowledge at individual level, (2) knowledge at unit or department level, and (3) knowledge at organization level. This research focuses knowledge at individual level. Although individual knowledge is the smallest and acquire only one level of organization knowledge, but sharing knowledge at individual level is very important because it serve as fundamental of knowledge creation, dissemination of knowledge, and management of knowledge at all level within organization.

Nonaka and Takeuchi (1995), confirmed the important of individual in organization knowledge creation process. Organization cannot accumulate knowledge resources without individuals sharing their knowledge with other, and more importantly, organization cannot use knowledge resources to increase effectiveness unless knowledge is shared at individual level. According to (Ipe, 2003)

> Knowledge creation should be viewed as a process whereby knowledge held by individuals is amplified and internalized as part of an

organization's knowledge base. Thus, knowledge is created through interaction between individuals at various levels in the organization.

(Lam, 2000, p. 491), give a definition of individual knowledge as "that part of an organization's knowledge which resides in the brains and bodily skills of the individual". Simon (1991), believe tindividual is keys for organization learning and the achievement of knowledge management of an organization. Argyris (1990), confirmed and supported this point of view by suggesting that "organizations learn through individuals and this individual learning is facilitated or inhibited by factors within the organizational learning system." Moreover, Huber (1991), argued that "knowledge could only reside at the individual level because cognition is a function of individuals that cannot be performed by organizations."

According to, (Ipe, 2003)

> At the individual level, (Lowendahl, Revang and Fosstenlokken, 2001.) identified three types of knowledge that are important to value creation in organizations—know-how, know-what, and dispositional knowledge. Know-how included experienced-based knowledge that is subjective and tacit, and know-what included task-related knowledge that is objective in nature. Dispositional knowledge was defined as personal knowledge that included talents, aptitude, and abilities. (Tsoukas and Vladimirou, 2001.) Further emphasized the role of individuals in the creation and sharing of knowledge, while (Polanyi, 1966.) insisted that all knowledge is essentially personal in nature. Others who suggested that knowledge in organizations is found at the level of individuals include (Alvesson, 1995,), (Brown and Woodland, 1999.), (Gupta and Govindarajan, 2000.), (Nonaka, 1994.), (Staples and Jarvenpaa, 2001.), and (Weiss, 1999.).

2.3 Knowledge management (KM)

An organization cannot operate effectively without knowledge management system, according to that KM has attracted lots of attention since the introduction of concept (Davenport, 1997; Nonaka, 1994). KM is a process which as organization generate value form its knowledge resources, help organization to accumulate knowledge capital by identifying knowledge, acquiring knowledge, and lastly distributing and maintaining knowledge that consider to be essential to the organization. With KM organization can sustain competitive advantage and survive in a highly competitive environment. Moreover, KM as a tools for organization in maximizing knowledge and information at all levels and help organization to achieve greatest performances began to receive attention (Hone & El Said, 2016).

Knowledge management are involve with people aspect and information aspect. The main objective of Knowledge management can be divided in to two dimension, first, people aspect which involve with sharing, develop, and receiving, knowledge. Second, information aspect which involve the process of transform data and information in to valuable asset of knowledge, documentation of knowledge, make it accessibility for every member in organization, and using it to enhance organization performance.

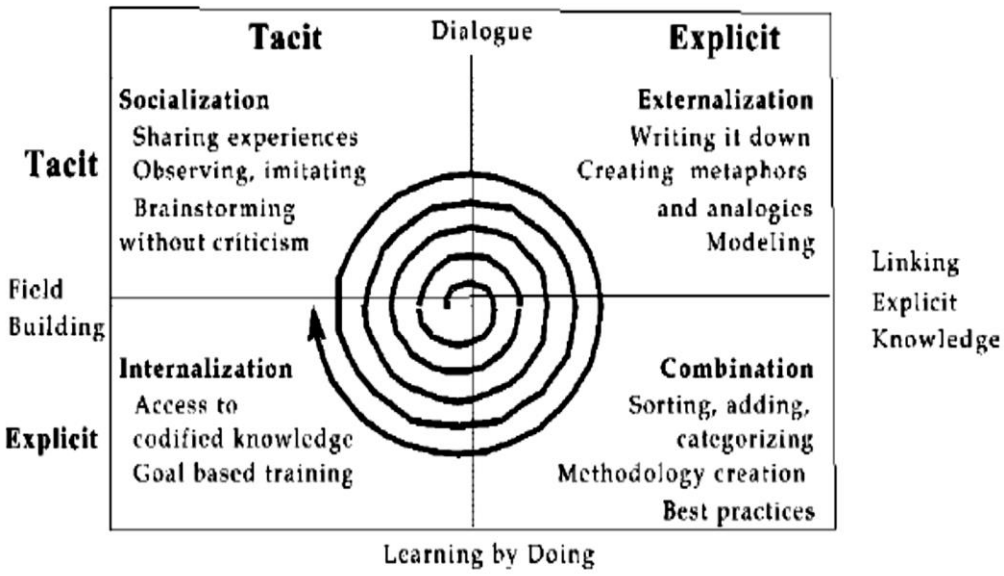


Figure 2.1 Spiral of Knowledge
Source: (Nonaka & Takeuchi, 1995)

Nonaka and Takeuchi (1995) Described process of knowledge management as follow

There are four stages of the conversion process, which are socialization, externalization, combination, and internalization. The first stage is called socialization. Tacit knowledge between individuals in this stage is transferred through observation, practice and imitation. The second stage is called externalization, which is triggered by collective reflection or dialogue. Also, this stage depends on analogy for the purpose of translating tacit knowledge into the form of processes and documents. The third stage is called combination. Combination is the process of reconfiguring explicit knowledge by way of adding, combining, sorting and categorizing procedures. The last stage is called internalization, which translates explicit knowledge into individual tacit knowledge.

According to the work of Szulanski, Cappetta, and Jensen (2004), knowledge management can be explained by model based on communication theory. In this model, knowledge management is a processes of sending or transfers information from knowledge sender to knowledge recipient.

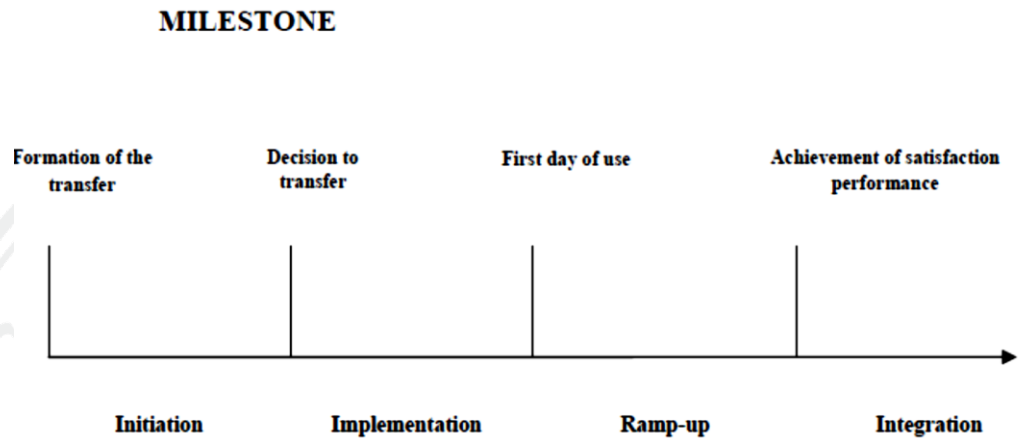


Figure 2.2 Knowledge Transfer Process Model
Source: (Szulanski et al., 2004)

In short, knowledge management comprise of knowledge creation, knowledge sharing, develop and documentation of knowledge, and amplifying or distributing knowledge. In other words knowledge management involve both people on one hand, and information on the other hand. (Evans, Dalkir, & Bidian, 2014)

Knowledge management has major purpose to increase organization performance by implement and design tools, structures systems, cultures and processes to enhance the sharing, creating and use all 3 types of knowledge that are important for decision making.

In other word, knowledge management is the science of managing knowledge's flow from one unit to another, from individual to organization level, and most importantly all of knowledge which have been generate form every entity within organization must be used to increase organization performance.

In line with literatures on knowledge management, the improvement of knowledge management is associated with the improvement of individual knowledge sharing capacity. If an organization want to have a better performance in knowledge

management outcome, it must focuses on the fundamental part of the processes with is individual knowledge sharing capacity.

2.4 Knowledge sharing in organization

This research focuses on ‘knowledge sharing’ which is fundamental part of knowledge management system. Researcher intended to make distinction between knowledge sharing which involve with the sharing of knowledge at individual level and knowledge transfer mostly used to explain the flow of knowledge between organization themselves, organization units, departments, or divisions(Lam, 1997).

Even though, in many time, the concept of share and transfer knowledge are exchangeable, and are hardly separate, but actually those two concepts are not the same and have different perspective to explain process of knowledge flows. First, concept of knowledge sharing is mostly used to explain the flow of knowledge at individual level, for example, employee share his or her knowledge with colleague. Second, concept of knowledge transfer is used to explain the flows of knowledge resource at organization level for example from one organization unit to another unit.

In general, knowledge sharing can be operationalized as knowledge (material, skill, tactic and etc.) that member of an organization share or work together which consequently increase the individual work skill. Within organization, employee willingness to communicate and socialized with colleagues (knowledge sending) as well as willingness to consult with colleagues and learn from them (knowledge collecting) are important component of knowledge sharing processes (Alam, Abdullah, Ishak, & Zain, 2009)

For employees, sharing knowledge is to distribute knowledge with other employees to get work done better, faster, and efficiently. Ming Yu (2002) (Stated that

> Knowledge sharing can help employees to get a new understanding their jobs and bring personal recognition within the department. Knowledge sharing includes people willingness to communicate actively with colleagues (donate knowledge), and actively consults with colleagues to learn from them (collect knowledge) (Alavi & Leidner, 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. In routine working basis activities, a member of an organization (individual) used and applied their knowledge to contribute their work, in this process tacit and explicit knowledge flow automatically across individual level (Ipe, 2003; Lam, 2000; WEISS, 1999). However, these kind of knowledge will fade away when individual member leaves an organization. So it is very important for an organization to initiate an effective process and system (knowledge management system) that recognize, utilize, and document knowledge at individual level. Regarding to this, it is clearly that individual knowledge that arrive form employees and member within an organization are the foundation of organizational knowledge.

As already mention above, knowledge sharing is fundamental part of knowledge management, knowledge sharing is all about “sharing it not hoarding it” (Milne, 2001). Knowledge sharing helps organization increase productivity, maintain intellectual capital, even when employee does not absence in the firms, all of this lead to value added (Lin, 2007). According to Alam et al. (2009), knowledge sharing happens when people exchange personal knowledge with other via social interaction.

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 transfer and 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.

The important of knowledge sharing is very critical because it creates linkage between individual knowledge and organization knowledge, moving knowledge at individual level to the organizational level, where it is transformed into economic and competitive value for the organization (Hendriks, 1999). Cohen and Levinthal (1990), suggested that “interactions between individuals who possess diverse and different knowledge enhance the organization’s ability to innovate far beyond what any one

individual can achieve." Boland Jr and Tenkasi (1995), agreed with this idea and objects that "competitive advantage and product success in organizations results from individuals with diverse knowledge collaborating synergistically toward common outcomes."

According to Assegaff and Kurniabudi (2016), "One of critical challenge in knowledge management success is to motivate people share their knowledge to others." For organization, to maintain effectiveness in knowledge management system, individual knowledge sharing is critical and significant strategies of concern which has always been a challenge.

The following section explains the factors influence knowledge sharing in organizations.

2.5 Factors which influence the improvement knowledge sharing

2.5.1 Concept of independent variables

Factors selected as independent variables in this research are; learning organization culture, organizational citizenship behavior, and individual's perceived organizational commitment to knowledge sharing. The concept and definition of selected factors which influence individual knowledge sharing within organization are presented as follow.

(1) Learning organization culture

Schein (1990), justified culture a phenomenon of basic assumptions investigated, discovered, or developed by specific group. According to, Dalkir (2013) Culture of an organization enhance and guide a behavior of members to be consistency via shared values, organizational norms, and mental models. To become learning organization an organization must create system and culture of learning supportive to facilitate the flow of knowledge and learning practices.

According to Garvin (1993), Learning organization refers to "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights" Learning environment, team work, creativity, collaboration are also part of learning organization (Confessore & Kops, 1998).

A famous concept of learning organization was developed by P. M. Senge (2006), According to P. Senge (1990) “The organizational ability that allows one organization to learn faster than its competitors, can ultimately lead an organization to gain a sustainable competitive advantage.” P. Senge (1990), also stated that there are five principles for an organization to maintain it learning status; system thinking, personal mastery, the mental model, shared vision, and team learning

- System thinking, can be described as fundamental part and the most important among five principle. System thinking includes concepts; instrument; and tools which have been established to support organization to see its goals more precisely, and be ready for any changes that occur.
- Personal mastery, refers to a capability and skill of individual to set and balance personal goals with realistic vision.
- Mental model, refer to framework; norm; or a point of view of individual which effect the undertreating of their own organization and the world.
- The shared vision refer to, a share perception about the future that enhance individual commitment to organization rather than obedience.
- According to P. M. Senge and Klostermann (1996), team learning refer to, norm of coordination which expand personal interest to organizational achievement.

Watkins and Marsick (1997), proposed an integrated model, the instrumentation of Dimensions of Learning Organization Questionnaire (DLOQ), to measure learning organization. According to them, the (DLOQ) is comprises of positive environment and supportive culture which facilitate learning system and process. This supportive culture and environment shell activate at to level: at organization level and individual level.

According to (Watkins & Marsick, 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” Seven cultural characteristics of learning organization are summarized in table 2.1.

Table 2.1 Learning Organization's dimensions

Dimension	**Description**
Continuous learning	Organization provides opportunities for education (learning opportunities), members of organization can learn from their jobs (Learning is part in every working processes)
Inquiry and dialogue	Organization has culture which support productive resining skills. Members of organizations are encourage to give feedbacks, experiment new things, and express their views, listens as well as inquire new things from others.
Team learning	Team working, collaboration as well as team learning are valued and support by reward system, organization supports different mode of thinking.
Embedded system	Both high- and low-technology systems are created to support everyone in organization to access and share knowledge.
Empowerment	People are involved in decision making process, policy foundation and implementation. So member of organization share sense of responsiveness.
Connection to environment	Organization and communities are linked together, members of organization are informed the effect of their work (action) to the organization.
Strategic leadership	Applied strategic leadership to support learning in organization.

Source: Adapted from (Marsick & Watkins, 2003, p. 13)

(2) 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."

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. (Organ, 1988) develop an integrated model from work of Schnake and Dumler (1997), which was the first person who initiated the term OCB, Regarding to (Organ, 1988), an organization Citizenship Behavior has five dimensions, "Altruism, Conscientiousness, Civic virtue, Sportsmanship, Courtesy." Table 2.2 summarizes these five categories of OCB.

Table 2.2 five categories of OCB

OCB categories	Definitions
Altruism	Optional behavior which employee choose to do beyond of their duty. For example, helping colleague to deal with relevant task or problem.
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.

Table 2.2 Continued

OCB categories	Definitions
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.

Source: Adapted from: (Organ, 1988)

Bolino, Turnley, and Bloodgood (2002), suggest that OCB can increase social capital in organization, the component of OCB include obedience, participation, and loyalty (Nahapiet & Ghoshal, 1998).

When individuals as member of organization feel emotionally attached to their organization. it can be state that they have OCB. As Lewicki and Bunker (1996) argued, "salient identification enhances frequency of cooperation and cooperative behaviors." When individuals have sense of citizenship with their organizations, individuals will have more willingness to help and join organizational activity and support organizational goals. (Mowday, Steers, & Porter, 1979; O'Reilly, 1980).

(3) Individual's perceived organizational commitment to knowledge sharing

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 (D. B. Minbaeva, Mäkelä, & Rabbiosi, 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 & Kim, 2002; Lim, 2004; D. Minbaeva & Pedersen, 2010).

(4) 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 (D. B. 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).

2.6 Theory of Planed Behavior (TPB) and factors influence individual knowledge sharing capacity

Many scholars for example, (Felin & Hesterly, 2007; Nicolai Juul Foss & Pedersen, 2004; Gupta & Govindarajan, 2000; McDermott, 1999) , agree and confirm on the assumption that deliberate behaviors on the part of the involved parties are required for knowledge sharing between individual. (McDermott, 1999), emphasizes that "sharing knowledge involves an individual making a conscious effort to guide another individual through his or her thinking." Therefore, to understand the drivers of individual knowledge behavior, it is very suitable to base on behavioral perspective (Gagné, 2009).

Individual behavior is one way or another guided by society in which one live in. individual behavior is specific to each individual decision and preference, one may behave in certain way according to specific time and may behave in different way in a

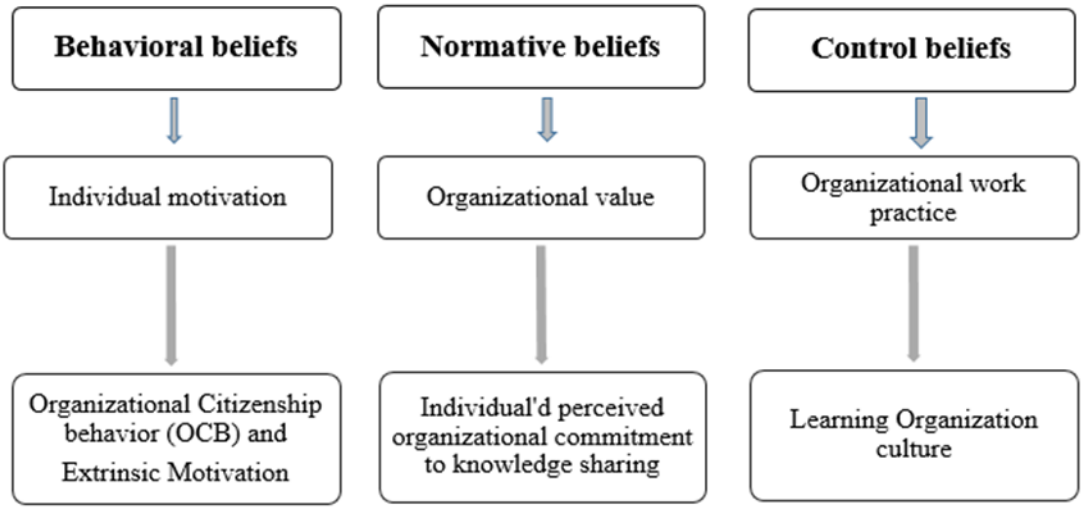
different condition. In other word, individual behaviors are guide by one perception on one thing according to condition and context of the time (Felin & Hesterly, 2007; Nicolai J Foss, Husted, & Michailova, 2010).

The Theory of Planed Behavior was originally initiated by Ajzen, the context of TPB theory is very popular and has been applied in various studies in order to understand and investigate deliberate human behavior. According to (Ajzen, 1991, 2002), individual behavior is guided by three perceptions, *behavioral, normative control beliefs.* Table: 3 summarize three kind of perception theoretical definition of terms.

Table 2.3 Theoretical definition of terms

Terms	Definitions
Behavioral Beliefs	Individual beliefs which related to idea that behavior in a certain way will lead to positive or negative results. - Beliefs of the likely consequences of certain behavior.
Normative Beliefs	The beliefs which related to idea that behavior in a certain way will be adjudged by others, (approved or disapproved). - (The normative expectations about whether others will approved or disapproved)
Control Beliefs	Belief related to individual view or perspective about external and internal factors which facilitate or obstruct performing a certain behavior.

Figure 2.3 TPB theory and factors influence knowledge sharing



Source: (Ajzen, 1991, 2002)

Many context of people behaviors have been applied TPB theory for its study. For instance, the TPB was applied in various behavioral studies. In this research author applied TPB in order to understand what facilitate knowledge sharing behavior.

The three types of behaviors in TPB theory resonate very well with variables used in this research as key factors influence knowledge sharing *(learning organization, individuals perceive organizational commitment to knowledge sharing, organizational citizenship behavior (OCB), extrinsic motivation),* which derived from literature review. Figure 2.3 elaborate TPB theory and factors influence individual knowledge sharing.

2.7 Research model and hypotheses

After reviving the concepts of knowledge in organization, individual 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 benefit factor on knowledge sharing at individual level.

2.7.1 Relationship between learning organization culture and Knowledge Sharing

The finding from previous studies 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 & Fahey wrote an article “diagnosing cultural barriers to knowledge sharing” De Long and 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. Regarding (De Long & Fahey, 2000)

> “Culture and particularly subcultures shape our assumptions about what knowledge is, and, hence, which knowledge is worth managing. Culture mediates relationships between individual and organizational knowledge. Culture creates the context for social interaction that ultimately determines how effective an organization can be at creating, sharing, and applying knowledge. Culture shapes the processes by which new organizational knowledge with its accompanying uncertainties is created, legitimated, and distributed.”

Through quantitative study Jo and Joo (2011) confirmed the association between learning organization culture and knowledge sharing intention (path coefficient = .19, t = 3.09).

Through quantitative study, Nonaka and Takeuchi (1995) indicated that organization with hypertext culture or organization with organic characteristic (opposed to bureaucratic characteristic) positively motivate individual to share more tacit knowledge and turn it to explicit knowledge. According to, organization which has egalitarianism and autonomy working environment can contribute more

knowledge sharing and creation of new knowledge within an organization. (Robertson and Hammersley, 2000.)

Based on the affirmations above, learning organization culture has characteristics which influence the extent of knowledge sharing with organization. Accordingly, author put forward the following hypothesis:

Hypothesis 1: Learning organization culture will be positively and directly related to the extent of knowledge sharing.

Along with the aforementioned, researchers argue that individual knowledge sharing is further influenced by two more mediating variables which are organizational citizenship behavior (OCB) and employee perceive commitment to knowledge sharing.

2.7.2 Organizational citizenship behavior (OCB) as mediate variable

2.7.2.1 Learning organization culture and Organizational citizenship behavior

Previous studies have been confirmed that organization culture influences with OCB (Somech & Drach-Zahavy, 2004; Wayne, Shore, & Liden, 1997; Werner, 2000). (Werner, 2000), hypothesize that organization culture positively associated with the degree of employee's engagement in contextual performance, which is defined as according to (Werner, 2000, pp. 4-5), "Individual efforts that are not directly related to their main task functions but are important because they shape the organizational, social, and psychological context that serves as the critical catalyst for task activities and processes".

Wayne et al. (1997), confirmed that employee's perceive organization support culture is positively associated with OCB. In different meaning, when employees feel that their organization have supportive culture the degree of OCB will increase. According to this, learning organization and its core values for example, team learning; supporting environment; and embedded system can enhance level of OCB.

Moreover, this argument also advocated by social exchange theory, which explain that, individual who is surrounded by a supportive environment within the organization are more likely to has high level of citizenship behavior.

Somech and Drach-Zahavy (2004), stated that, 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.

According to, (Jo & Joo, 2011),

> Organizational learning values expand employees' perspectives beyond their formal tasks and further encourage organizational members to help their colleagues in circumstances when the organizational performance level is threatened in order to achieve an organizational goal. The significant relationship between these two constructs (learning organization and OBC) suggests that an organization can improve OCB by paying attention to specific characteristics of its learning culture.

(Jo & Joo, 2011), try to find an association between learning organization culture, organizational citizenship behaviors, and organizational commitment. The finding of this research have been found the association between Learning organization culture OCB (path coefficient = .34, t = 4.63).

2.7.2.2 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 & Chu, 2007). According to (Jo & Joo, 2011)

> "Knowledge sharing is a form of OCB in that the knowledge-sharing process involves automatic, discretionary, and altruistic behaviors that are not requested. They conclude that an effective environment can be created to share knowledge via OCB."

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, (Jo & 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. Accordingly, author proposed the following hypothesis:

Hypothesis 2: Organizational citizenship behavior positively mediates the relationship between learning organization culture and the extent of knowledge sharing.

2.7.3 Individual perceive organizational commitment to knowledge sharing as mediate variable

1) Learning organization culture and individual perceived organizational commitment to knowledge sharing

Through quantitative study Lim (2004), confirmed the moderate but significant association between sub-constructs of organizational learning and organizational commitment.

According to (Lim, 2004)

Using a sample of 669 employees from five subsidiaries of a Korean conglomerate, this research found that…organizational commitment, except for continuance commitment, was found to be moderately and positively related to learning organization culture and job satisfaction.

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 & 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).

2) 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. According to Hislop (2003), when worker has high organization commitment they are more likely to be motivate to share their knowledge and participate more in knowledge management related activities.

According to (D. B. Minbaeva et al., 2012)

> An individual who perceives organizational commitment to knowledge sharing as high is more likely to behave in ways that are aligned with such norms and expectations. In other words, engagement in knowledge exchange is dependent upon the extent to which the individual believes that his/her

immediate group and the organization as a whole generally agree that it is a valued activity (Bock & Kim, 2002; Lin, 2007; D. Minbaeva & Pedersen, 2010).

D. Minbaeva and Pedersen (2010), did quantitative study about individual level's knowledge transfer and HRM, the result of this research has shown that, the independent variable "individual perception of organizational commitment to knowledge sharing" significantly and positively effect on knowledge exchange across employee groups (path coefficient = 0.36, t = 8.17). Accordingly, researcher give the following hypothesis:

Hypothesis 3: an employee perceive commitment to knowledge sharing positively mediate the relationship between learning organization culture and the extent of knowledge sharing.

2.7.4 Relationship between extrinsic motivation and knowledge sharing

The association between extrinsic motivation and level of knowledge share have been proved to be significant by various research and studies, for example, (Bartol & Srivastava, 2002; Björkman, Barner-Rasmussen, & Li, 2004; Cabrera, Collins, & Salgado, 2006; Nicolai J Foss et al., 2010; Lim, 2004; Osterloh & Frey, 2000). According to previous studies from various scholars, incentive reward or financial compensation directly encourage employees to share knowledge with their colleagues (Bartol & Srivastava, 2002; Björkman et al., 2004; Bock & Kim, 2002; Cabrera et al., 2006; Lim, 2004; Mesmer-Magnus & DeChurch, 2009; Osterloh & Frey, 2000).

According to, (Assegaff & Kurniabudi, 2016)

> Evaluates the relationship between extrinsic motivation and knowledge sharing intention…Output from the p value calculation of the two tailed test shows P value is less than 0.0029. It can be summarized by conventional criteria and this difference is considered as extremely significant statistically. All of paths were found significant and support the previous hypotheses.

Detail discussion related with the hypotheses testing will present in discussion section.

Through quantitative study, Cabrera and Cabrera (2002) argue that “the process related to decisions about whether or not to engage in knowledge sharing bears resemblance to cost-benefit analysis.” When member of organizations notice that there are link between knowledge sharing behavior and rewards they will be more participate in knowledge sharing activities (Cabrera et al., 2006). Accordingly, to increase motivation it is necessary to make employees feel it beneficial by restructuring the payoff. (Foss et al., 2009).

O’Reilly and Pondy did a research on organizational communication and according toO’Reilly (1980), “rewards and penalties for individuals that come from sharing and not sharing knowledge also influence the knowledge-sharing process.” Moreover, O’Reilly and Pondy also stated that “the probability that organizational members will route information to other members is positively related to the rewards and negatively related to the penalties that they expect to result from sharing.” (Dyer & Nobeoka, 2000; Earl, 2001; Gupta & Govindarajan, 2000; Quinn, Anderson, & Finkelstein, 1996), 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. Accordingly, author put forward the following hypothesis:

Hypothesis 4: Extrinsic motivation will be significantly related to the level of knowledge sharing

Table 2.4 Summary of hypotheses

	HYPOTHESIS
1	Learning organization culture will be positively and directly related to the extent of knowledge sharing.
2	Organizational citizenship behavior positively mediates the relationship between learning organization culture and the extent of knowledge sharing.
3	An individual perceive organizational commitment to knowledge sharing positively mediate the relationship between learning organization culture and the extent of knowledge sharing.
4	Extrinsic motivation will be significantly related to the level of knowledge sharing

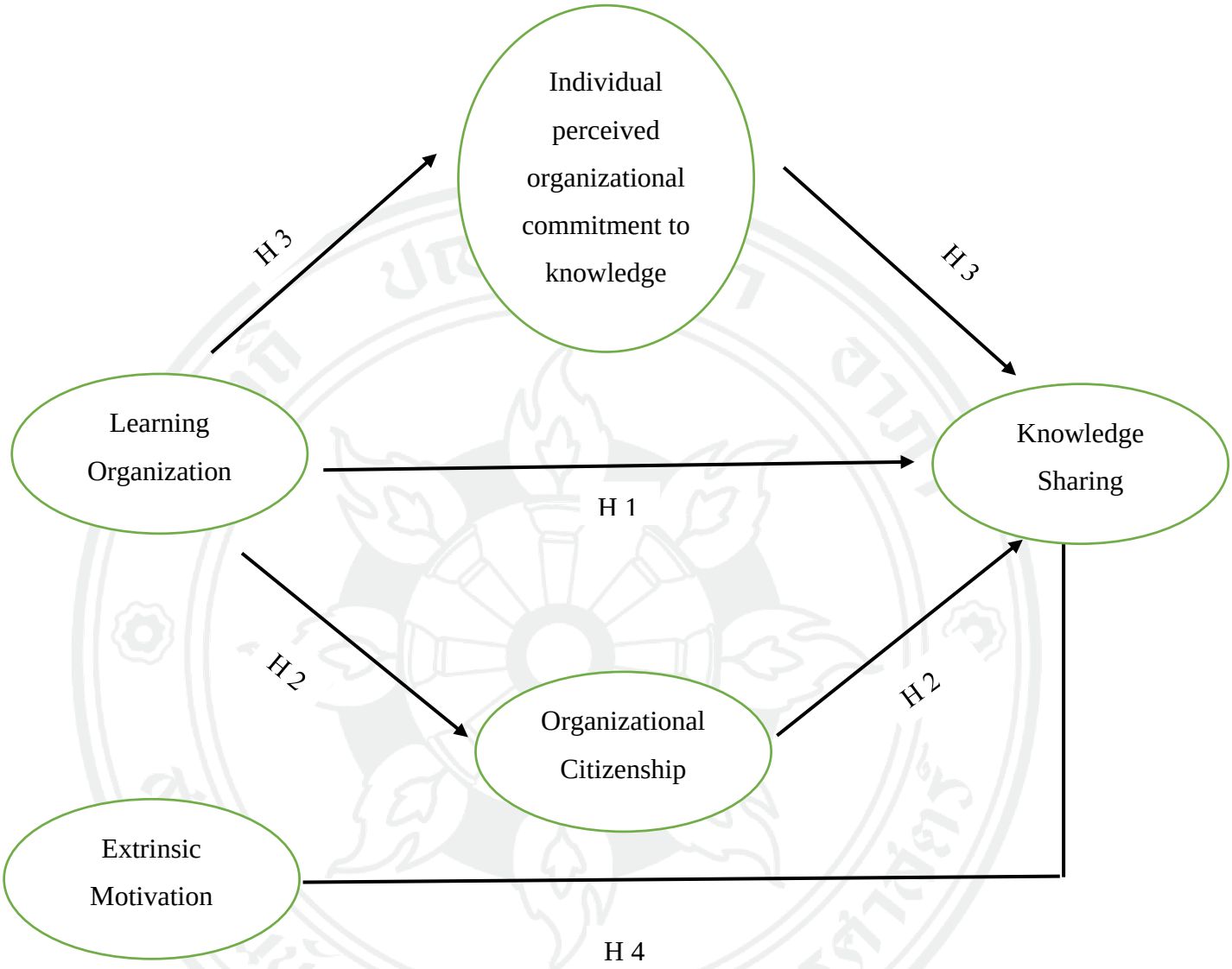


Figure 2.4 Conceptual framework

CHAPTER 3

INDUSTRIAL ESTATE AUTHORITY OF THAILAND (IEAT)

This chapter discusses the general information about I-EA-T, including its formation and development, philosophy, value system, major tasks, vision and mission, statement of decoration, and type of business. Furthermore, in this chapter knowledge management and learning organization framework at I-EA-T are also presented.

3.1 General Information about I-EA-T

3.1.1 Formation and Development of Industrial Estate

Industrial Estate Authority of Thailand (I-EA-T) is a state owner of enterprise with profit making organization under the ministry of industry. It was initially formulate by the declaration of the revolutionary council No.339 dating back on 13 December 1972. Later on the I-EA-T was gradually developed and established by the first Industrial Estate Authority of Thailand Act (1979). Following by twice revision of the act in 1991 and 1996, the I-EA-T was finalized and implemented.

Since then this state enterprise has been served our country as a government instrument in moving forward of industrial sector through the development of industrial estates as well as to value added in the industrial investment. As a result, bringing together of industrial plants places them in one site with systematic management. Furthermore this approach will bring balance economic development into all regions within the country.

The development of industrial estates is required to promote sustainable economic growth in parallel with efficient environmental management. Later the act was amended (Amendment 4. 2007) enabling the estate to widening its scope of responsibility from industrial area development to service sector.

3.1.2 Industrial Estate and Its Role

Industrial estate is a big piece of land which is assigned for a group of industrial plants to be placed together inside in proportionally. The overall land/area consists of industrial zones, facilities, utilities and other infrastructures such as roads, rewerage systemic, wastewater treatment plants, flood control system, power supply, tap-water, and telephone communication system. Beside other services must be provided, those include post office, banking, department stores, housing for workers, and gas station etc**.**

3.1.3 Philosophy

The I-EA-T stands for Industrial Estate Authority of Thailand. Whereas “I” means integrity of which the organization personnel and stakeholders and always adhered to honor and dignity. Which “EA” is for seeking for excellence achievements in doing the business. While “T” is tributary means giving back all the best to society as much as possible.

3.1.4 Value Systems

Five of E (E1, E2, E3, E4, and E5) were adopted and implemented at all level within the organization. This state enterprise is a profit making organization so the economic growth is a main target (E1) and must go for it through creativity mode. Whereas distribution of prosperity equally to different regions within the country must carry by (E2). While doing the business by minimizing of all kind of risks together with environmental conservation (E3) is in mind as well as energy savings. The organization likewise puts more focus on education (E4) of knowledge sharing and learning ability among partnerships and extending to cover communities and society. Last but not least, promoting a sense of sharing, caring and responsibility back to society and country through (E5) ethics.

3.1.5 Major Tasks of I-EA-T

The organization holds its responsibility as require by law and as assignment through the government policy. The main focus tasks to carry include the development of land, utilities, infrastructure, and facilities for those industrial operators, in order to promote, provide, and support the development of industrial sector as well as service sector for economic growth security. In parallel, I-EA-T has to regulate the environmental condition as well as safeguarding within the industrial estate not to course harmful effect to community.

Following are major tasks in summary:

1. provide the land and develop into the ready stage of estate (establishment) as well as provide funding in part (joint venture) of the estate to be established covering both industrial sector and service in line with the government strategy and policy.
2. Establish the industrial port to provide logistic and management within the estate where the country has its targeting area.
3. Provide and supply all kind of facilities and utilities required within the estate in order to make the estate functions properly.
4. Provide approach, permission and regulating industries of operators within the estate by convenient means of fast, transparency, and accountability.
5. Provide as much of all special rights and benefits in line with the need of operator requested.
6. Control, regulate and coordinate of all issues about environmental and safety at the estate site to compliance with the laws and gain confidence by publics.

Furthermore the I-EA-T still aims to focus on its strategic and policy of five years plan (2017-2021). That includes to convert this organization into the establishment of eco-industrial town for future economy. By doing that the existing industrial estate must be upgraded to be eco industrial estate. Under this transformation program the manufacturing plant environment is within the acceptable standard, and reducing the impact on society and community. Likewise the quality of life of the people in the community is enhanced as well as raising confidence

acceptance from the community and society as a whole. Whereas a balance in development for sustainable living in harmony of three parties; industrial, service, and social sectors is accomplished.

In addition by adding targeted industrial in to the eco-industrial town, this will contribute to the value based economy development under Thailand 4.0 initiative designed to bring Thailand out of the middle income trap and to enhance service level with advanced technology and innovation based industrial. At the same time the organization will promote personal's capability up to their full potential in support the rapid change with strong commitment to ethics and transparency.

3.1.6 Vision of I-EA-T

The I-EA-T has set its own vision to become a leader in the establishment of Eco industrial town foe future economy. This can be used as guideline for the organization to operate during a five year plan during 2017-2020. This include:

1) Leading Organization: to become a leader in bringing together the organization and community for development of eco-industrial town.
2) Eco Industrial Town: means the industrial estate which consists of well balance in physical, economic, social, environmental being developed, and manage under good governance
3) To drive economic growth for the future: the IEAT that play a key role in making the economic growth in the future. These selected industries must have good potential to the value based economy according to the Thailand 4.0 initiative to bring the country out of the middle income trap.

3.1.7 Mission of I-EA-T

The IEAT lay down its mission for a better achievement as follows. First, Country: Become a national leader in development of eco industrial estates to support the new S curves industries and to link/networking the Asean community as well. Second, Communities and society: To build up the growth of the industrial sector, communities and society as whale as in a participatory manner. Third, Operator: To facilitate all kind of services that will ease for investment and in increasing the operator competitiveness. Forth, Organization: To have the organization keep on

growing in a sustainable manner with good governance. Fifth, Personnel: To enhance the capacity of personnel for more creativity with advance technology and innovation as well as to develop with more focus on bonding with and loyalty to the organization.

3.1.8 Statement of Direction: SOD

The statement of direction (SOD) was set up for guiding IEAT development and its direction to be in line with the national development strategy of the overall state enterprises and at the organization level, the most important of SOD for IEAT is to upgrade the industrial sector in to the eco-industrial town. Likewise the IEAT must find suitable area in support of industrial sector growing. The SOD guide line can be separated by time in to short and long term one.

Short-term

1) To regulate all kind of operating plants within the estate strictly under the area of responsibility
2) To implement the master plan of eco-industrial town for industrial sectors throughout the country.
3) To develop area serving the expansion of industries such as petrochemical and relating industries including conduct PR activities for public acceptance.
4) To conduct PR activities for better understanding to general public and to gain the confidence about the environmental green zone at the estate as well as to report result of environmental monitoring from the operating sites focusing on safety management and CSR (corporate social responsibility)
5) To pay more attention to asset management for maximizing the benefits, especially on cash flow management and managing the remaining areas after sales within the industrial estate.
6) To collaborate in developing any protection plan to absorb if any disaster just going to occur

Long-Term

1) To develop the logistic system for increasing the potential of industrial estate
2) To make the industrial estate ready for use in advance to absorb the industrial expansion as when the AEC become effective.

3.1.9 Type of Businesses

Core businesses and core services are carried out by I-EA-T, among core businesses they are industrial estates being operate solely by I-EA-T and some industrial estate with joint operations, and Map Ta Phut industrial port.

Among core services, I-EA-T functions as builder, manager, and regulating industrial estates as well as industrial ports, in order to promote industrial growth for the country.

3.2 Knowledge management and learning organization of IEAT

I-EA-T 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 I-EA-T 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, I-EA-T 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). I-EA-T knowledge management and learning organization framework can be described as followed.

3.2.1 Purpose of knowledge management policy at IEAT

The Main purposes of knowledge management policy at IEAT are, to initiate and foster a learning organization culture by applying an innovation (information technology) in every part of organization. Employees within IEAT shall be able to use, share, and access to knowledge via knowledge platform. Moreover, employees are also encourage to preserve critical knowledge, avoid of being lost.

3.2.2 Scope and application of knowledge management policy at IEAT

The knowledge management policy must applies in all level within an organization. All members of IEAT; permanent; non-permanent; and contract shell be trained and coached to implement this policy.

3.2.3 IEAT's knowledge management policy framework

IEAT vision, mission, values, objectives and goals shell be a guideline for knowledge management policy. All knowledge management strategies, processes, and activities shell be in line with those organizational objective. Mostly importantly, knowledge management policy must meet the term of relevant laws and regulations. Details about knowledge management policy framework at IEAT are discussed as followed.

Role of Information Technology (IT) department

1) IT department has main duty to ensure the effectiveness of information flow within an organization, more importantly all information must be up to date and spread smoothly via knowledge management system. According to this policy IT department is accountable for initiate framework of knowledge management policy and evaluate content of this policy across the organization.
2) IT department shell foster and maximizes the value of knowledge capital by encourage knowledge sharing activities and learning organization culture. Furthermore, IT department must support and help develop knowledge (both tacit and explicit) in to structure
3) Lastly, IT department shell be in charge of evaluation and monitoring processes. An effective measurement instrument must be developed to evaluate the knowledge management policy after the implementation process. Moreover, IT department shell monitor and support the process of knowledge sharing and creation, create a sharing environment of new initiatives.

IEAT's knowledge policy details

1) Every members of IEAT shell share responsibility of nurturing organizational knowledge. It is everyone duty to enhance knowledge sharing, acquisition and preserve knowledge.
2) Knowledge sharing is fundamental part of knowledge management system and should be included in policy development and strategic plan of an organization.
3) IT department must regulate a keys performance management and evaluation measurement for knowledge management within an organization.

Role of individual members

1) All members of IEAT shell be responsible for organizing and sharing their own knowledge, both tacit and explicit.
2) An individual member should initiate their own knowledge goals which are in line with objectives of their department.
3) All individual members of an organization should continuously develop and update their knowledge.
4) All individual members of an organization should attend and join knowledge sharing activity organized by IEAT.
5) In order to preserve organizational knowledge, individual members can help to evaluate and update organizational databases (what are good practices; lessons learn).

Role of knowledge manager managers and Head of Department

1) Knowledge manager is responsible for monitoring the improvement of knowledge circulation across the organization.
2) Knowledge manager is accountable for encourage knowledge creation and knowledge sharing within organization, by organizing a gathering or knowledge sharing session as much as possible.
3) Knowledge manager shell foster knowledge sharing activities and create a value of organizational commitment to knowledge sharing.
4) Head of Department is responsible for creating new knowledge capital for future organizational advantage.

5) Head of Department is accountable for archives all knowledge, and put it in organizational knowledge portals.

Compliance

1) Head of Departments are accountable to guarantee that thus policy is activate within the departments.
2) Employees must be trained to implement knowledge management policy.

3.2.4 Human resource management strategies for knowledge management at IEAT

Hansen (2002)) argue that, in order to manage knowledge there are generally two strategies which are, codification and personalization. Codification are related to processes of creating knowledge databases documentation and preservation of knowledge, make it's accessible to everyone within an organization. This practically include an investment and implementation of ICT system, mapping of knowledge (recognize where knowledge is situated in organization), e-library. Personalization refer to, the development of individual knowledge sharing, foster the flow of tacit knowledge between person to person contacts. The human resource management strategies for knowledge management at IEAT are presented below in table 3.1.

Table 3.1 Human resource management strategies for knowledge management

	Codification Strategy	**Personalization Strategy**
General strategy	Develop an ICT system that, codify, storage, disseminate, and allow reused of knowledge.	Develop a network for linking people so that tacit knowledge can be shared.
Use of ICT	Invest heavily in ICT.	Invest moderately in ICT.
Training and development	Train people in groups and computer based learning.	Train people through one to one monitor. (foster the flow of tacit knowledge)

Table 3.1 Continued

	Codification Strategy	**Personalization Strategy**
Reward System	Reward people for using and contributing to document databases.	Reward people for directly sharing knowledge with other.

CHAPTER 4

METHODOLOGY

This research used a quantitative approach in order to accomplish comprehensive and meaningful findings. In this chapter, the methodologies used in this research are presented. First is, the population and sampling procedure, and second are the measurement and operationalization of all the variables. Third is the, validity and reliability test of the questionnaire and forth is, the data collection. And lastly is, the data analysis.

4.1 Population and Sampling Procedure

According to, Cooper, Schindler, and Sun (2002, p. 98), population in research is total number of target population. The population selected in research must be related to the research questions and objectives.

Since this research has main objective to clarify the influence of learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on individual knowledge sharing, thus, the unit of analysis for this research was at individual level.

The target population of the study was full time employees of the Industrial Estate Authority of Thailand. A survey questionnaires 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. Additionally, since the respondents in this research has same (homogenous) characteristics, the total population can be represented by respondents from any areas.

A random sampling procedure was used as the survey technique in this research. Regarding to this procedure, all members of the population have equal probability to be selected. In this research, the sample was drawn only from IEAT full-time employees. Zikmund (1997, p. 414) indicated that random sampling is

method which help researcher to reduce population in large number into small. Data were collected from individual employees directly. After reviving of all the quaternaries, the data were registered in the data base using SPSS program for further analysis.

In this research, the sample size was calculated based on theoretical suggested by Krejcie and Morgan (1970), as presented in table 4.1. According to the data and information from the table, with the acceptable level of error at 5% and 95% confidence level, the suitable sample size of 593 IEAT employees was 234 respondent.

Table 4.1 Sample design for different sizes of population and samples

Size of Population	Size of Sample (5%)
500	217
550	226
600	234
650	242
700	248
750	254
800	260

Source: by Krejcie & Morgan, 1970

4.2 Operational Definitions and Measurements

After reviewing various literature and pervious research related to the factors influencing the improvement of individual knowledge sharing, conceptual model was develop based on the literature review. In order to conduct the research each variable had to be determined and giving an operational definition. The following section explains the operational definitions and the measurement scales of the dependent, mediating, and independent variables which that were used in this research.

4.2.1 Measurement and operationalization of independent and mediating variable

1.) Learning organization culture

This research defined the operationalized learning organization as the ability of employees in an organization to learn faster than workforce in other organization, which constitutes to competitive advantage. According to (Watkins & Marsick, 1997) learning organization comprise of seven keys characteristic: "Continuous learning, dialogue and inquiry, team learning, empowerment, embedded system, system connection, and strategic leadership". The seven items characterize each sub construct of learning organization.

Researcher applied "Dimensions of Learning Organization Questionnaire." (DLCQ scale) developed by Watkins and Marsick (1997) for measuring the learning organization culture. According to Marsick and Watkins (2003), DLCQ is the most popular and reliable measurement that has been used around the world by various organizations and contexts since 2002. DLCQ scale comprise of 21 questionnaires (using a 5-point Likert scale), measuring all seven dimensions of the learning organization.

Lastly, since this research intended to investigate knowledge sharing at individual level, all of the DLCQ scale were based on individual perception.

2.) Extrinsic Motivation

As suggested by (Vroom, 1995, p. 7), motivation is operationalized as "governing choices made by a person." In agreement with the statement of (Cabrera et al., 2006, p. 251), "when individuals perceive a link between knowledge sharing behaviors and organizational rewards they will be more inclined to participate in knowledge sharing activities", researcher operationalized the variable extrinsic motivation as its individual level of responsiveness to incentives given as when to share more knowledge and information.

In order to capture this concept, author used 2 questionnaires, applied from, D. B. Minbaeva et al. (2012), based on Likert-type scale (5 points).

4.2.2 Measurement and operationalization of mediating variables

1.) Organizational citizenship behavior

According to (Jo & Joo, 2011), in this research OCB was operationalized as "the level of citizenship behavior of employees which was done freely beyond standard work assigned to him, did not formally commanded and did not get rewarded directly from the institution." Researcher used 16 items developed by Lee and Allen (2002), measure OCB. Which based on Likert-type scale (5 points)

2.) Individual's perceived organizational commitment to knowledge sharing

According to (D. B. Minbaeva et al., 2012), Individual's perceived organizational commitment to knowledge sharing was operationalized as "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."

To operationalize the variable, researcher used 3 items developed from works of D. B. Minbaeva et al. (2012), agian based on Likert-type scale (5 points).

4.2.3 Measurement and operationalization of dependent variable

1.) Knowledge Sharing

This research operationalized knowledge sharing as knowledge which employees within organization work or share to improve individual work skill. Researcher uses 7 items which based on a Likert-type scale (five point), developed from the work of (Argote & Ingram, 2000; De Vries, Van den Hooff, & de Ridder, 2006; Garvin, 1993; Goh, 2002). Table 4.2 summarizes the operationalization of the independent, mediating, and dependent variables applied in this research.

Table 4.2operationalization of the independent, mediating, and dependent variables applied in this research.

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.	D. B. Minbaeva et al. (2012)
Organizational citizenship behavior (OCB)	Sung Jun Jo and Baek-Kyoo Joo, (2011.) "The level of citizenship behavior of employees which was done freely beyond standard work assigned to him, did not formally commanded and did not get rewarded directly from the institution."	16 questionnaires, 5-point Likert scale.	Lee and Allen (2002)
Knowledge Sharing	knowledge which employees within organization work or share to improve individual work skill	7 questionnaires, 5-point Likert scale.	(Argote & Ingram, 2000; De Vries et al., 2006; Garvin, 1993; Goh, 2002)

4.3 Validity and reliability

4.3.1 Pre-Testing

Pre-test or pilot version of questionnaire is used in various research and studies for improving the validity and reliability of measurements. (Wanichbunch, 2003, p. 27), stated that "the number of respondents should be at least 25 to conduct a pre-test."

1.) Design of questionnaire

Questionnaire used in this research was designed based on the empirical studies of several scholars and theories. In order to guarantee the content validity of the items in questionnaires, the questionnaire was reviewed and approved by advisor and the dissertation committee.

2.) Pre-testing of the Questionnaire

Pre-test or pilot version of questionnaire is used in various researches and studies for improving validity and reliability of measurements. Even though pre-test might take time and effort but it provide direct information, and reliable measures. In order to avoid any misunderstanding that can occur in questionnaires, this research conducted a pre-test with 34 employees at IEAT. After analyzing result of the pre-test, researcher revised questionnaires according to the pre-test responses.

3.) The Summary of the questionnaire

In order to guarantee higher validity and reliability, researcher revised the questionnaires according to the pre-testing results. Details of the questionnaires and items for each variables are presented in table 4.3.

Table 4.3 Items for each variable used in the questionnaire

CONTRUCT	ITEMS	MODIFIED AND DERIVED FROM	NUMBER
Learning organization culture (LO)	21	Watkins and Marsick, (1997.)	1-21
Extrinsic Motivation (ExMotive)	2	D. B. Minbaeva et al. (2012)	22-23

Table 4.3 Continued

CONTRUCT	ITEMS	MODIFIED AND DERIVED FROM	NUMBER
Organizational citizenship behavior (OCB)	16	Lee and Allen (2002)	24-39
Individual's perceived organizational commitment to knowledge sharing (Perceive)	3	D. B. Minbaeva et al. (2012)	40-42
Knowledge Sharing (KnowShare)	7	(Argote & Ingram, 2000; De Vries et al., 2006; Garvin, 1993; Goh, 2002)	43-49

4.3.2 Validity

According to Babbie (2013), validity and reliability are two elements that social science researchers cannot neglect. The validity and reliability of scale help researcher develop a good instrument for measurement (measure what it is intended to measure), reduce errors, and ensure the validity and reliability of the data that come out from instrument of measurement valid and reliable.

According to (Pallant & Manual, 2007), "the validity of a scale refers to the degree to which it measures what it is supposed to measure." In other words, the meaning of validity is the level of accuracy of our measurement, how well the measurement can actually measure what it is intended to measure. Normally, there are three perspectives of validity which are face, content, and contruct validity (Babbie, 2013).

The scale appeared in this research was approved by dissertation advisor and the scale were originally in English. Researcher consulted with an expert in order to translate all of scale in to Thai language, the back translation process was applied to confirm the correctness of items in questionnaires.

Furthermore, researcher also conducted factors analysis to test validity of construct, to decrease number of variables, to identify groups interrelated of variables. Factor loadings were introduced and computed for meaning the correlation between the original variables and the proposed factors, and the significant concept to better understand the characteristics of particular factor (Hair, Anderson, Tatham, & Black, 1998). Factor loading value that reads at 0.50 or greater is significantly qualified whereas the value higher than 0.30 is also acceptable with the minimum level (Hair, Anderson, Tatham, & Black, 1995). While factor loading whose value is less than 0.3 is not allowed to use and should be dropped out (Kim & Mueller, 1978). The results of factors analysis as measured by the factor loading values are presented as follow.

Table 4.4 Factor analysis of learning organization

VARIABLES	CONTENT	FACTOR LOADING
Factor 1	**LEARNING ORGANIZATION**	
LO1	In my organization, people help each other learn	0.579
LO2	In my organization, people are given time to support learning	0.604
LO3	In my organization, people are rewarded for learning.	0.597
LO4	In my organization, people give open and honest feedback to each other.	0.551
LO5	In my organization, whenever people state their view, they also ask what others think.	0.685
LO6	In my organization, people spend time building trust with each other.	0.518
LO7	In my organization, teams/groups have the freedom to adapt their goals as needed	0.623
LO8	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	0.728
LO9	In my organization, teams/groups are confident that the organization will act on their recommendations	0.551
LO10	My organization creates systems to measure gaps between current and expected performance	0.617
LO11	My organization makes its lessons learned available to all employees	0.685

Table 4.4 Continued

VARIABLES	CONTENT	FACTOR LOADING
LO12	My organization measures the results of the time and resources spent on training	0.541
LO13	My organization recognizes people for taking initiative.	0.591
LO14	My organization gives people control over the resources they need to accomplish their work.	0.659
LO15	My organization supports employees who take calculated risks.	0.601
LO16	My organization encourages people to think from a global perspective	0.757
LO17	My organization works together with the outside community to meet mutual needs	0.722
LO18	My organization encourages people to get answers from across the organization when solving problems.	0.838
LO19	In my organization, leaders mentor and coach those they lead	0.728
LO20	In my organization, leaders continually look for opportunities to learn	0.586
LO21	In my organization, leaders ensure that the organization's actions are consistent with its values	0.684

According to the result form factor analysis in table 4.4, indicated that the scale used as a measurement of learning organization had factor loading scored ranked between Min = 0.551, Max= 0.838, which showed that all of items represented appropriate questions for learning organization.

Table 4.5 Factor analysis of extrinsic motivation

VARIABLES	CONTENT	FACTOR LOADING
Factor 2	**EXTRINSIC MOTIVATION**	
EXMOTIVE1	How would you prefer to be rewarded by increments/bonuses or by promotion for transferring knowledge in your organization?	0.891
EXMOTIVE2	How would you prefer to be rewarded by increments/bonuses or by promotion for reusing knowledge in your organization?	0.926

According to the result form factor analysis in table 4.5, indicated that the scale used as a measurement of extrinsic motivation had factor loading scored ranked between Min = 0.891, Max= 0.926, which showed that all of items had appropriate questions for extrinsic motivation.

Table 4.6 Factor analysis of Organizational citizenship behavior (OCB)

VARIABLES	CONTENT	FACTOR LOADING
Factor 3	**ORGANIZATONAL CITIZENSHIP BEHAVIOR**	
OCB1	I attends functions that are not required but that help the organizational image.	0.698
OCB2	I keeps up with developments in my organization.	0.709
OCB3	I defends the organization when other employees criticize it	0.712
OCB4	I shows pride when representing my organization in public.	0.608

Table 4.6 Continued

VARIABLES	CONTENT	FACTOR LOADING
OCB5	I offers ideas to improve the functioning of the organization.	0.771
OCB6	I expresses loyalty toward organization.	0.739
OCB7	I takes action to protect my organization from potential problems.	0.853
OCB8	I demonstrates concern for the image of my organization.	0.866
OCB9	I helps others who have been absent.	0.618
OCB10	I willingly gives my time to help colleagues who have work related problems	0.618
OCB11	I adjusts my schedule to accommodate colleague's requests for time off.	0.582
OCB12	I go out of my way to make newer colleagues feel welcome in the work group.	0.679
OCB13	I shows genuine concern and courtesy toward coworkers, even under the most trying business or personal situations	0.565
OCB14	I gives up time to help colleagues who have work or non-work problems.	0.636
OCB15	I assists colleagues with their duties.	0.68
OCB16	I shares personal property with others to help their work.	0.594

According to the result form factor analysis in table 4.6, indicated that the scale used as a measurement of organizational citizenship behavior had factor loading scored ranked between Min = 0.582, Max= 0.866, which showed that all of items had appropriate questions.

Table 4.7 Factor analysis of Individual's perceived organizational commitment to knowledge sharing

VARIABLES	CONTENT	FACTOR LOADING
Factor 4	**INDIVIDUAL'S PERCEIVED ORGANIZATIONAL COMMITMENT TO KNOWLEDGE SHARING**	
PERCIEVES1	Knowledge sharing is valued in my company.	0.773
PERCIEVES2	Uncovering and leveraging existing knowledge is highly. valued in my company	0.894
PERCIEVES3	Acquiring and leveraging new knowledge is highly valued in my company.	0.568

According to the result form factor analysis in table 4.7, indicated that the scale used as a measurement of individual's perceived organizational commitment to knowledge sharing had factor loading ranked between Min = 0.568, Max= 0.894, which showed that all of items had appropriate questions.

Table 4.8 Factor analysis of Knowledge sharing

VARIABLES	CONTENT	FACTOR LOADING
Factor 5	**KNOELEDGE SHARING**	
KNOWSHARE1	When I learn something new, I like to share it with my colleagues.	0.721

Table 4.8 Continued

VARIABLES	CONTENT	FACTOR LOADING
KNOWSHARE2	I share regularly what I am doing with my colleagues.	0.708
KNOWSHARE3	My colleagues are willing to share or transfer the way they do things.	0.874
KNOWSHARE4	When my colleagues are good at something, they teach me how to do it where necessary and appropriate.	0.868
KNOWSHARE5	If my performance is not what it should be, my colleagues will help me to improve.	0.940
KNOWSHARE6	I regularly have conversations with my colleagues about how to improve my knowledge.	0.882
KNOWSHARE7	I engage in knowledge sharing or knowledge transfer among the individuals in my organization.	0.856

According to the result form factor analysis in table 4.8, indicated that the scale used as a measurement of knowledge sharing had factor loading scored ranked between Min = 0.721, Max= 0.940, which showed that all of items had appropriate questions for knowledge sharing.

Additionally, this research were also conducted ‘Kaiser-Meyer-Olkin (KMO) and Barlett’s Sphericity tests’, Result of KMO test are shown in table (4.9). Since KMO value was above 0.5, this demonstrated that all sample apply in this research were suitable and the size of sample were large enough (Kaiser, 1974, p. 35). Moreover, the result of Barlett test indicated that variables were uncorrelated in the population.

Table 4.9 Kaiser-Meyer-Olkin's Measure of Sampling Adequa and Barlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.894
Bartlett's Test of Sphericity	Approx. Chi-Square	9623.798
	df	1176
	Sig.	0.000

4.3.3 Reliability

According to, Neuman and Kreuger (2003), reliability is indicators which proved that research instrument used to measure variables in research will give the same stability result, and will not vary according to different time, different data collectors…and so on.

To test reliability of instruments, this research used SPSS program to perform both pre-test and post-test. Items appeared in the questionnaire which represent the level of Cronbach's alpha not less than 0.6 consider to be reliable (Sekaran & Bougie, 2003, p. 202). A high Cronbach's alpha indicated that there was internal consistency and the instrument used as measurement had high percentage of representation. The results of reliability test are shown in table below.

Table 4.10 Reliability coefficients of the Scale Items

SCALE	NUMBER OF ITEMS	RELIABILITY COEFFICIENTS (Cronbach's Alpha) Pre-test, N=34	RELIABILITY COEFFICIENTS (Cronbach's Alpha) Post-test N=247
Learning Organization	21	.867	.953
extrinsic motivation	2	.894	.961
Organizational citizenship behavior (OCB)	16	.959	.951

Table 4.10 Continued

SCALE	NUMBER OF ITEMS	RELIABILITY COEFFICIENTS (Cronbach's Alpha) Pre-test, N=34	RELIABILITY COEFFICIENTS (Cronbach's Alpha) Post-test N=247
Individual's perceived organizational commitment to knowledge sharing	3	.870	.854
Knowledge sharing	7	.868	.954

According to the result of reliability test, both pre-test and post-test had Cronbach's Alpha ranging between 0.867- 0.959 (for pre-test), and 0.854 – 0.961 (for post-test). According to Sekaran (2003: 202), value of reliability higher than 0.6 is acceptable and can be considered as reliable. Consequently, all of the instruments were suitable with quite high reliability.

4.4 Data collection

4.4.1 Primary Data

The questionnaire were distributed to various working departments according to the approval and scrutinize of the I-EA-T head office. Distribution of the whole set of questionnaires was kindly handled by I-EA-T. The questionnaire used five-point Likert scale, each questionnaire will be ranging from one to five.

4.4.2 Secondary Data

This research use secondary data (document analysis) from various sources, relevant information were used, for example, journals, official reports, and electronic references.

4.5 Data analysis strategy

The objectives of this study were to clarify the interrelationships between the independent and dependent variables (learning organization culture, extrinsic motivation, and knowledge sharing across employee groups.) and the mediating effect of individual perceive organizational commitment to knowledge sharing and organizational citizenship behavior (OCB) on these relationships.

4.5.1 Quantitative Analysis

To analyze data collected form survey, researcher uses (SPSS) program (the Statistical Package for the Social Science). SPSS is statistic program which consider to be reliable and useful to analyze data in quantitative analysis. Additionally, this research also conducted the path analysis, using AMOS program (Analysis of Moment Structure) for hypothesis testing.

4.5.1.1 Descriptive statistics

In this research, descriptive statistic were used to describe data which have already been analyzed. The types of descriptive statistics which research used in this research included, for example, percentage, mean, standard divisions, and so on.

4.5.1.2 Pearson Correlation and Collinearity Diagnostics

To avoid multi-collinearity problems, researcher also implemented Pearson correlations and collinearity diagnostics for instance, variance inflation factors (VIF) and tolerance values so as to clarify relationships among all of the variables.

4.5.1.3 Path Analysis

The relationship between variables in social science research are complex, one variable can be related to another variables in various ways for example, it might have direct or indirect relationship or else via mediating variables. In such complex

circumstance, path analysis is good and suitable statistical analysis to exhibit relationship between variables. Path analysis method help researcher examine relationship among variable by creating a roadmap, compute path coefficient from standard linear regression, which can be grouped into direct and indirect coefficient.

Moreover, path analysis is statistical method that is suitable as tool when researcher want to clarify direct and indirect relationships between dependent variable and more than two independent variables (Shipley, 2002, p. 130). In this research, path analysis was applied for hypotheses testing, investigated direct and indirect effect between independent variables namely; learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on dependent variable knowledge sharing. The result of part analysis called path coefficients were interpreted by level of strength relationship in table below.

Table 4.11 Level Path Coefficients and the Interpretation strength relationship

Coefficients	Strength of Relationship
0.00	No relationship
0.01 – 0.09	Trivial
0.10 – 0.29	Low to moderate
0.30 – 0.49	Moderate to substantial
0.50 – 0.69	Substantial to very strong
0.70 – 0.89	Very strong
0.90	Near perfect
1.00	Perfect

Source: De Vaus and de Vaus (2013)

3.5.1.4 Stepwise Regression Analysis

This research also employed a statistical method namely stepwise regression to analyses step by step of variable factors which influencing on knowledge at IEAT.

CHAPTER 5

RESEARCH FINDING AND DISCUSSION

This chapter is dedicated to the research finding, including: 1) descriptive statistic and demographic data of independent and dependent variables of this research are described; 2) data analyses section answering all the research questions and hypothesis testing results by presenting the association between learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on knowledge sharing at IEAT 3) lastly, a chapter summary.

5.1 Descriptive Characteristics of the Demographics

5.1.1 Descriptions of the Demographic Data

Personal demographic data of target sample which is permanent employees working at IEAT are presented in this section. 300 questionnaires were distributed to all respondents and researcher received 247 questionnaires, thus comprising N=247 for this research. Although in some questionnaire there were a few missing values but the data form those questionnaires can still be added in for statistical analysis.

Based on the results in table (5.1), respondents by female were accounted for 68.4% whereas males were reported at 31.6%. This trend of gender distribution at IEAT seems to be increased over the past few year. The majority of respondents (60.3%) has the age between 30-50 years, follow by the age of more than 50 years accounted for 25.9%. Only 13.8% having their ages less than 30 years of age. In terms of experience as measured by years of services, 36% of the respondents have been working at IEAT for over 21 years, while 33.2% have worked 5 years or less, 7.7% working there between 16 and 20 years, and the rest only 2% have been working there for 6 to10 years.

Table 5.1 Percent of Demographic Data of IEAT Employees (N= 247)

NO.	Items	Personal Data	Number (Person)	Percent (%)
1.	Gender	Male	78	31.6%
		Female	169	68.4%
2.	Age *(years)*	Less than 30	34	13.8%
		30-50	149	60.3%
		More than 50	64	25.9%
3.	Experience	0-5	82	33.2%
	(years of	6-10	5	2%
	services)	11-15	52	21.1%
		16-20	19	7.7%
		More than 21	89	36%

5.1.2 Descriptions of Independent Variables

In this research descriptive statistics were used to explain independent variables (learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation.) Table 5.2 presented the percentage responses of all independent variables, and each question were ranked from 5 (Strongly Agree) to 1 (Strongly Disagree.)

Table 5.2 percent of independent variables

Item	Label	5	4	3	2	1
	(1) Learning Organization (LO)					
1	In my organization, people help each other learn	57.1	32.0	10.9	-	-
2	In my organization, people are given time to support learning	22.3	53.0	20.6	2.0	2.0

Table 5.2 Continued

Item	Label	5	4	3	2	1
3	In my organization, people are rewarded for learning.	40.1	44.5	6.9	7.3	1.2
4	In my organization, people give open and honest feedback to each other.	25.5	47.8	21.1	4.0	1.6
5	In my organization, whenever people state their view, they also ask what others think.	18.2	55.5	15.4	8.1	2.8
6	In my organization, people spend time building trust with each other.	6.1	46.6	18.6	13.0	15.8
7	In my organization, teams/groups have the freedom to adapt their goals as needed	13.0	36.4	22.3	19.8	8.5
8	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	33.6	57.1	4.9	2.4	2.0
9	In my organization, teams/groups are confident that the organization will act on their recommendations	57.1	24.3	18.6	-	-
10	My organization creates systems to measure gaps between current and expected performance	23.5	62.3	12.1	2.0	-
11	My organization makes its lessons learned available to all employees	43.7	44.1	3.2	7.7	1.2
12	My organization measures the results of the time and resources spent on training	33.2	39.3	21.5	4.9	1.2
13	My organization recognizes people for taking initiative.	27.5	35.6	23.5	11.3	2.0
14	My organization gives people control over the resources they need to accomplish their work.	4.0	42.9	23.9	18.2	10.9

Table 5.2 Continued

Item	Label	5	4	3	2	1
15	My organization supports employees who take calculated risks.	11.3	30.4	20.6	21.1	16.6
16	My organization encourages people to think from a global perspective	46.6	45.7	2.4	3.2	2.0
17	My organization works together with the outside community to meet mutual needs	36.0	51.8	9.3	1.2	1.6
18	My organization encourages people to get answers from across the organization when solving problems.	28.7	54.7	10.9	3.6	2.0
19	In my organization, leaders mentor and coach those they lead	33.2	34.4	18.2	5.7	8.5
20	In my organization, leaders continually look for opportunities to learn	10.5	24.7	38.9	23.5	2.4
21	In my organization, leaders ensure that the organization's actions are consistent with its values	23.5	54.3	14.6	5.3	2.4
	(2) Extrinsic Motivation					
22	How would you prefer to be rewarded by increments/bonuses or by promotion for transferring knowledge in your organization?	23.1	64.0	7.7	2.8	2.4
23	How would you prefer to be rewarded by increments/bonuses or by promotion for reusing knowledge in your organization?	11.3	13.4	29.1	34.8	11.3
	(3) Organizational citizenship behavior (OCB)					
24	I attend functions that are not required but that help the organizational image.	26.7	56.3	14.2	2.0	.8

Table 5.2 Continued

Item	Label	5	4	3	2	1
25	I keep up with developments in my organization.	58.3	30.0	9.7	2.0	-
26	I defend the organization when other employees criticize it.	23.5	36.8	28.3	5.7	5.7
27	I show pride when representing my organization in public.	26.3	38.9	26.3	4.5	4.0
28	I offer ideas to improve the functioning of the organization.	27.5	39.3	26.3	2.8	4.0
29	I express loyalty toward organization.	26.3	40.1	27.9	2.8	2.8
30	I take action to protect my organization from potential problems.	27.9	34.4	30.4	4.5	2.8
31	I demonstrate concern for the image of my organization.	19.8	43.3	30.0	4.0	2.8
32	I help others who have been absent.	22.7	42.5	22.3	8.9	3.6
33	I willingly give my time to help colleagues who have work related problems.	29.6	42.9	23.1	3.6	.8
34	I adjust my schedule to accommodate colleague's requests for time off.	25.1	45.7	22.3	5.7	1.2
35	I go out of my way to make newer colleagues feel welcome in the work group.	32.0	39.7	20.6	4.0	3.6
36	I show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.	22.7	38.9	31.2	6.9	.4
37	I give up time to help colleagues who have work or non-work problems.	13.8	40.5	37.7	4.5	3.6

Table 5.2 Continued

Item	Label	5	4	3	2	1
38	I assist colleagues with their duties.	26.7	34.4	33.6	3.2	2.0
39	I share personal property with others to help their work.	23.5	33.6	36.8	3.6	2.4
	(4) Individual's perceived organizational commitment to knowledge sharing					
40	Knowledge sharing is valued in my company.	12.6	41.7	31.6	7.3	6.9
41	Uncovering and leveraging existing knowledge is highly. valued in my company	30.8	33.2	25.9	7.7	2.4
42	Acquiring and leveraging new knowledge is highly valued in my company.	14.2	30.8	28.7	6.5	19.8

5.1.3 Descriptions of Dependent Variable

In this research descriptive statistic were used to explain dependent variable. Table 5.3 is describe percentage responses of dependent variable (knowledge sharing), each question representing the dependent variable was rank from 5 (Strongly Agree) to 1 (Strongly Disagree.).

Table 5.3 Percent of dependent variable (N = 247)

Item	Label	5	4	3	2	1
	(5) Knowledge sharing					
43	When I learn something new, I like to share it with my colleagues.	17.4	34.8	32.4	4.0	11.3
44	I share regularly what I am doing with my colleagues.	30.0	31.2	31.2	7.3	.4

Table 5.3 Continued

Item	Label	5	4	3	2	1
45	My colleagues are willing to share or transfer the way they do things.	38.5	37.7	18.2	2.0	3.6
46	When my colleagues are good at something, they teach me how to do it where necessary and appropriate.	25.5	42.5	24.7	5.3	2.0
47	If my performance is not what it should be, my colleagues will help me to improve.	32.4	35.6	24.3	5.7	2.0
48	I regularly have conversations with my colleagues about how to improve my knowledge.	34.8	36.8	19.4	5.7	3.2
49	I engage in knowledge sharing or knowledge transfer among the individuals in my organization.	35.6	41.7	15.0	5.7	2.0

5.2 Data Analyses and Results of the Study

5.2.1 Correlation Matrix of the Independent Variables

Multicollinarity 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 learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation. Table 5.4 presents the correlation coefficients of the variables.

Table 5.4 Correlations Coefficients between the Independent Variables (N = 247)

		LO	ExMotive	OCB	Perceive	KnowShare
LO	**Pearson Correlation**	**1**	**.472****	**.494****	**.621****	**.552****
	Sig. (2-tailed)		.000	.000	.000	.000
	N	247	247	247	247	247
ExMotive	**Pearson Correlation**	**.472****	**1**	**.517****	**.259****	**.444****
	Sig. (2-tailed)	.000		.000	.000	.000
	N	247	247	247	247	247
OCB	**Pearson Correlation**	**.494****	**.517****	**1**	**.538****	**.639****
	Sig. (2-tailed)	.000	.000		.000	.000
	N	247	247	247	247	247
Perceive	**Pearson Correlation**	**.621****	**.259****	**.538****	**1**	**.572****
	Sig. (2-tailed)	.000	.000	.000		.000
	N	247	247	247	247	247
KnowShare	**Pearson Correlation**	**.552****	**.444****	**.639****	**.572****	**1**
	Sig. (2 - tailed)	.000	.000	.000	.000	
	N	247	247	247	247	247

Note: Correlation is significant at the 0.01 level (2-tailed).

According to the Pearson correlation analysis described above, 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, p. 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, p. 647). The results of VIF tests are showed in table 5.5.

Table 5.5 Collinearity Statistics on the Independent Variables (N = 247)

Variable	Tolerance	VIF
Learning Organization	.777	.1287
Extrinsic Motivation	.412	2.429
OCB	.679	1.472
Individual's perceived organizational commitment to knowledge sharing	.556	1.799

Regarding to the results in table 5.5, the tolerance of the independent variables ranged from 0.412-0.777 and the smallest tolerance was 0.412. According to Kumari (2008, p. 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, p. 93).

5.2.2 Causal Relations between learning organization culture and knowledge sharing.

In this research the path analysis method was conducted for hypotheses testing. Figure 4.1 presented path diagram and the result of path coefficient that answered hypothesis 1.

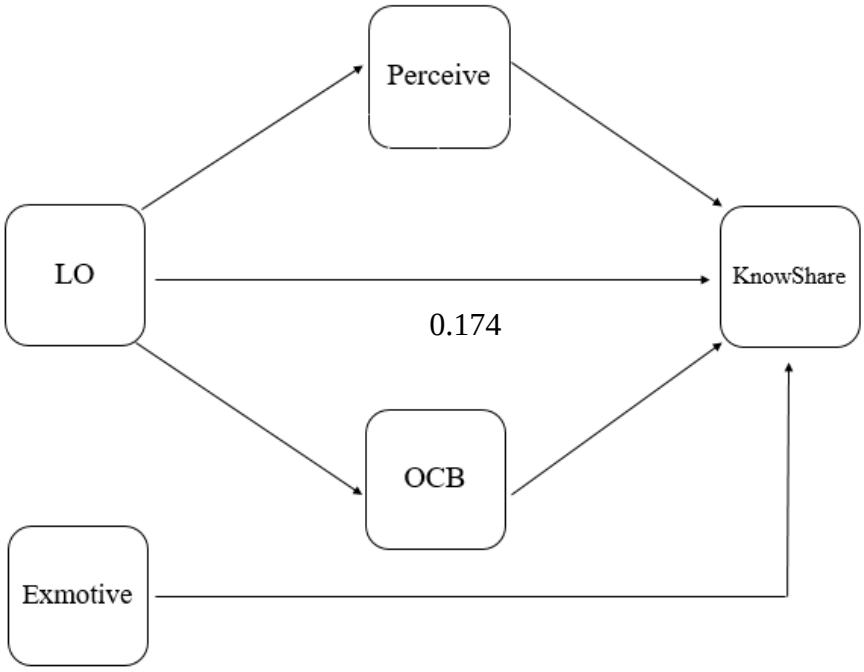


Figure 5.1 Path Model for Learning Organization Culture In relation to Knowledge Sharing of IEAT Employees (N = 247)

Note: Coefficients were significant at the .05 level.

Figure 5.1 indicates quite low to moderate relationship between learning organization (LO) and knowledge sharing (KnowShare) with the Beta value equal to 0.174. The two factors have significantly related. The possible explanation for this relationship is due to the fact that knowledge sharing and creating as well as its utilization are influenced by organization culture (De Long & Fahey, 2000). The results lead to the conclusion that organization culture become essential and contribute to knowledge sharing (Ipe, 2003). A working environment where member of the organization have enthusiasm and autonomy cam increase and promote knowledge sharing within the organization.

5.2.3 Causal Relations between learning organization culture organizational citizenship behavior, and knowledge sharing.

In this research the path analysis was also employed for hypotheses testing. Figure 5.2 presented path diagram and the result of path coefficient that answered hypothesis 2.

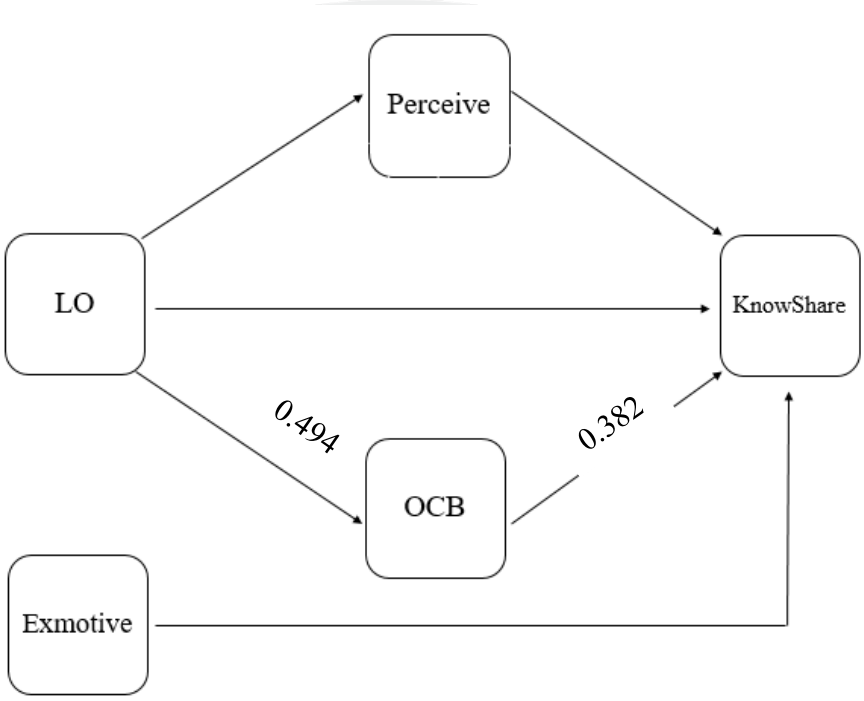


Figure 5.2 Path Model for Learning Organization Culture and OCB In relation to Knowledge Sharing of I-EA-T Employees (N = 247)

Note: Coefficients were significant at the .05 level.

The causal relationships among the variables studied are presented in figure 5.2. From the model (diagram) it's appeared that both direct and indirect effects of the variable through regression results were determined and highlighted of the values.

1.) Direct relationship between organizational citizenship behavior and knowledge sharing.

OCB---→KnowShare = 0.382

Where:

OCB= Organizational citizenship behavior

KnowShare= Knowledge sharing

According to the diagram above organizational citizenship behavior (OCB) had direct effect on knowledge sharing (KnowShare) (Beta = 0.382). It is the fact that, a willingness to share or not to share depends on the knowledge owner. In addition knowledge sharing is based on voluntary act. A strong relationship between OCB and knowledge sharing intention further implied that member of an organization are pleased to share their own knowledge without any expected reward in return.

2.) Indirect relationship between learning organization and organizational citizenship behavior in Knowledge sharing.

Lo ---→ OCB---→KnowShare .494 x .382 = 0.188

Where:

Lo = Learning organization culture

OCB= Organizational citizenship behavior

KnowShare= Knowledge sharing

According to the above diagram through calculation as presented above, factor of learning organization (LO) had an indirect on knowledge sharing (KnowShare) as demonstrated through in Beta (0.188) with organizational citizenship behavior (OCB). The implication in support to this finding is that any members of an organization who work under strong learning organization culture will automatically build up their citizenship behavior with their own organization and willing to share more knowledge. This result is in agreeable with works of several scholars for example (Bock & Kim, 2002; Ipe, 2003; Nonaka & Takeuchi, 1995).

5.2.4 Causal Relations between learning organization culture individuals perceive organizational commitment to knowledge sharing, and knowledge sharing.

Path analysis was introduced and applied to test the hypothesis of this research. As can be seen in figure (5.3), it appeared that all the results can be used to answer hypothesis 3.

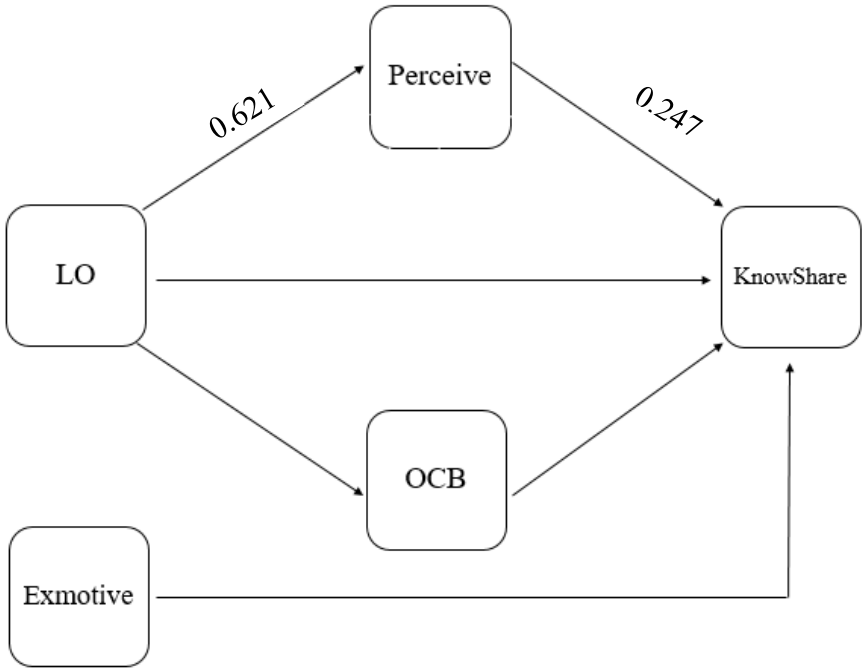


Figure 5.3 Path Model for Learning Organization Culture and Individual Perceive Organizational Commitment to Knowledge Sharing In relation to Knowledge Sharing of I-EA-T Employees (N = 247)

Note: Coefficients were significant at the .05 level.

According to figure (5.3) which demonstrated both direct and indirect effects as resulted from path model analysis on multiple regression results. In the next following section both effects of learning organization culture (LO) and individual's perceived organizational commitment to knowledge sharing (Perceive) to knowledge sharing (KnowShare) will be elaborated and discussed.

(1) Direct relationship between individuals perceive organizational commitment to knowledge sharing and the extent of knowledge sharing.

Perceive---→KnowShare = 0.247

Where:

Perceive = Individuals perceive organizational commitment to knowledge - sharing

KnowShare= Knowledge sharing

According to the diagram above individuals perceive organizational commitment to knowledge sharing (Perceive) had direct effect on knowledge sharing (KnowShare) (Beta = 0.247). Under quite good environment in favor of knowledge sharing activities individuals who are member of such organization are recognized this organizational norm and willing to adjust themselves according to that norm (Bowen & Ostroff, 2004; Delbecq & Mills, 1985; Schneider, 1990). In the knowledge sharing context, a strong system of human resource management can enhance and signal the important of knowledge sharing. Because of any individual within the organization will absorb this norm and adjust their own behavior to be aligned with this expectation. In brief, the extent of knowledge sharing depend on personal view of individual in relation to their organization norm.

(2) Indirect relationship between learning organization culture, individuals perceive organizational commitment to knowledge sharing, and knowledge sharing

Lo ---→ Perceive---→KnowShare .621 x .247 = 0.153

Where:

Lo = Learning organization culture

Perceive = Individual's perceived organizational commitment to knowledge - sharing

KnowShare= Knowledge sharing

With the above diagram developed by calculations and presented above, learning organization culture (LO) was found to have an indirect effect with knowledge sharing (KnowShare) through a variable factor of individual's perceived organizational commitment to knowledge sharing (Perceive) with its Beta at (0.153). The reason behind this is that the condition of learning organization, for example, team learning; embedded system, supportive environment etc., all known to enhance the improvement of individual knowledge sharing. Second, strong level of learning culture within an organization create a norm where sharing knowledge is valued and accepted, so any individual who work in place full of learning environment is more likely to perceives that their organizations is committed to knowledge sharing activities and will behave in ways that are aligned with such norms and expectations.

5.2.5 Causal Relations between extrinsic motivation and knowledge sharing

The path analysis was brought in and employed to test hypothesis 4 under this section of research. Path diagram was drawn and presented in figure (5.4).

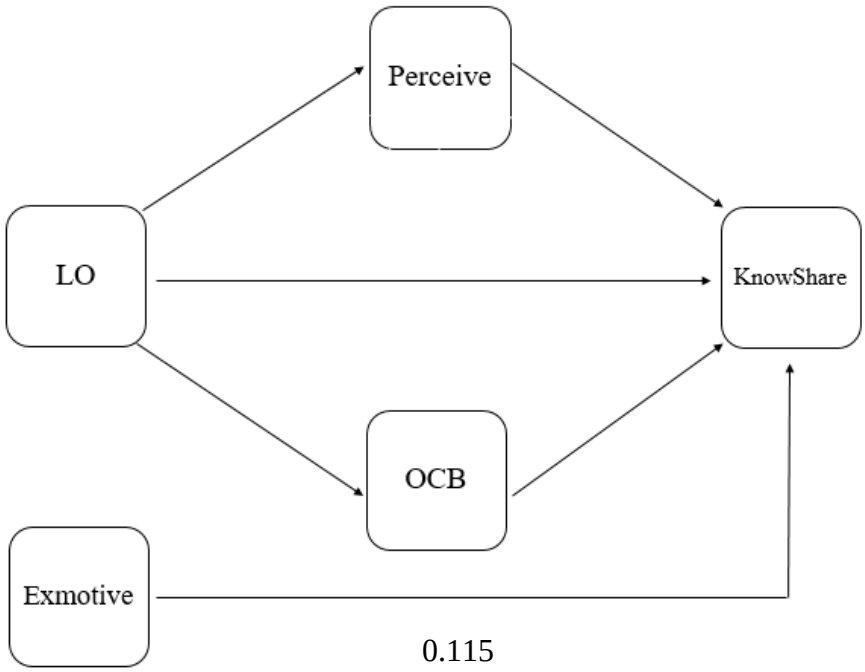


Figure 5.4 Path Model for Extrinsic Motivation In relation to Knowledge Sharing of I-EA-T Employees (N = 247)

Note: Coefficients were significant at the .05 level.

Figure 5.4 illustrates demonstrates the outcome of a low to moderate relationship between extrinsic motivation with knowledge sharing at which its Beta value as of (0.115). As expected, figure 5.4 also reflects that extrinsic motivation was significantly and directly related to knowledge sharing (Beta = 0.115). According to knowledge sharing perspective, a decision to share knowledge of individuals are strongly motivated by extrinsic benefit, whether in form of financial reward or recognition. For illustration, members of an organization will be motivated to share their knowledge to other member when they know that they will receive rewards from their organization in return. Moreover, a number of previous researches in knowledge sharing field agree that extrinsic benefit strongly influence behavior of people to share knowledge.

The result is agreeable with Kankanhalli, Tan, and Wei (2005) work, which reported that people with an expectation for extrinsic benefit will have motivation to share their knowledge with other member in organization. This also somewhat similar to that of Cabrera et al. (2006) work which revealed that people are more willing to participate in knowledge sharing activities and share more of their knowledge with they know that some reward are given.

Table 5.6 indicates the direct and indirect effects of the variables learning organization culture individual’s perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on knowledge sharing

Table 5.6 Direct, Indirect, and Total Causal Effect of learning organizational culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation on knowledge sharing

Independent Variable	Direct	Indirect	Total
LO	0.174	(Via OCB : 0.494 x 0.382 = 0.188), (Via Perceive: 0.621 x 0.247 = 0.153)	0.515
Perceive	0.247	-	0.247
OCB	0.382	-	0.382
ExMotive	0.115	-	0.115

Table 5.6 tabulated and confirmed the highest effects of learning organization culture (LO) above the other variables tested. Only LO was found to have both direct and indirect effects on knowledge sharing. Total effect of learning organizational culture on knowledge sharing equal to 0.689 (DE 0.174 + IE 0.188+ IE 0.153= TE 0.515). Organizational citizenship behavior (OCB) was found the next to the highest ranking by having its causal effect to influence on knowledge sharing with (DE= 0.382, TE= 0.382).Further, individual's perceived organizational commitment to knowledge sharing factor was found to be ranked third with only direct effect with its (DE= 0.247, TE= 0.247). Last but not least the factor of extrinsic motivation was also found to have direct effect with its DE (DE=0.115, TE= 0.115).

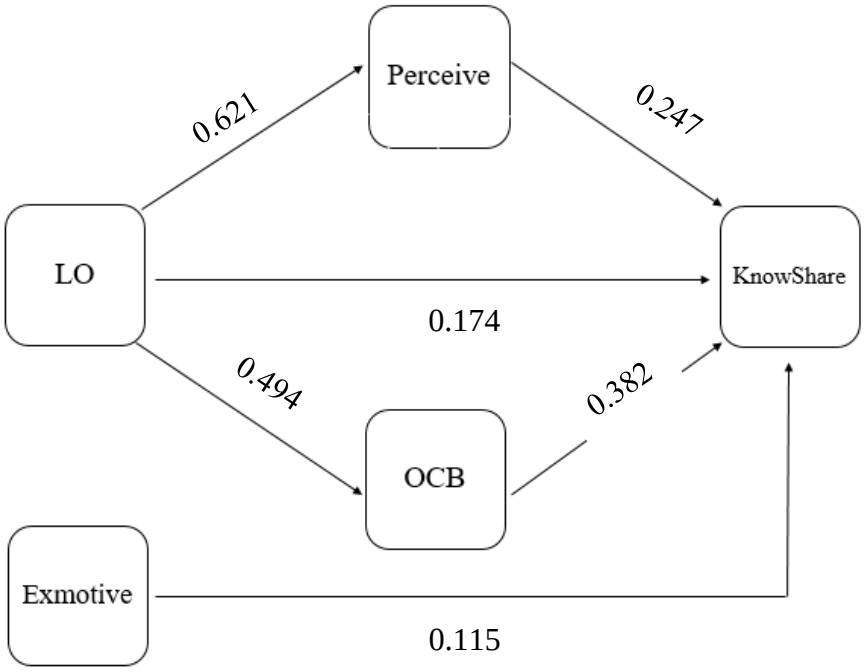


Figure 5.5 Path Model for Independent and Dependent Variables In relation to Knowledge Sharing of I-EA-T Employees (N = 247)

Note: Coefficients were significant at the .05 level.

Figure 5.5 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.

For more clarification, the equation form for the models of factors influencing knowledge sharing at IEAT are presented as follows:

(1) **KnowShare** = 0.174 **LO** + 0.382 **OCB** + 0.247 **Perceive** + 0.115 **ExMotive**

5.3 Chapter Summary

In this research, distribution of the whole set of questionnaires was kindly handled by IEAT. 300 questionnaire were distributed to various working departments according to the approval and scrutinize of the IEAT head office, 247 questionnaires were returned. Although in some questionnaire there were some few missing values but the data form those questionnaires can still be added in for statistical analysis. As regards to the respondents, 78 respondents (31.6%) were male and 169 (68.4%) were male.

This research also conducted the tolerance and variance inflation factor (VIF) tests to confirm that there is no multi-collinearity problem in all variables applied in this research, which were learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation.

Regarding the result from table 5.7, all variables were stated to be significantly associated to knowledge sharing. Learning organization culture was confirmed to have both direct and indirect association to knowledge sharing while extrinsic motivation shown only direct effect on dependent variable. Moreover, Moreover, this research also found that individual perceived organizational commitment to knowledge sharing, organizational citizenship behavior significantly mediate the association between learning organization and knowledge sharing.

Table 5.7 the results of the hypothesis testing

No	Hypothesis	Result
H1	Learning organization culture (LO) will be positively and directly related to the extent of knowledge sharing (KnowShare).	Accepted
H2	Organizational citizenship behavior (OCB) positively mediates the relationship between learning organization culture (LO) and the extent of knowledge sharing (KnowShare).	Accepted
H3	An individual's perceived organizational commitment to knowledge sharing (Perceive) positively mediate the relationship between learning organization culture (LO) and the extent of knowledge sharing (KnowShare).	Accepted
H4	Extrinsic motivation (ExMotive) will be significantly related to the level of knowledge sharing (KnowShare).	Accepted

CHAPTER 6

SUMMARY OF THE FINDINGS AND CONCLUSIONS

This chapter contains: 1) a summary of the findings to provide answers to the research questions; 2) the conclusion of the study; 3) the contributions of the findings; 4) recommendations to organizations and management; 5) implications for future research.

6.1 Summary of the Findings

In this research, researcher examines the impact of learning organization culture, organizational citizenship behavior, individual perceive organizational commitment to knowledge sharing, and extrinsic motivation on the extent of knowledge sharing within IEAT. Regarding the demographic information, the researchers asked respondents about gender, age, and period of employment. The target population for this research include permanent employees that have been working in the Industrial Estate Authority of Thailand (IEAT).

A survey was conducted utilizing questionnaires distributed to various working departments with kindly approved and handled by IEAT head office together with staff members. 300 questionnaires were distributed to those target population and 247 papers were returned back. All of the returned papers were qualified and proceeded for statistical analyses.

In this research 2 objectives were set up they include: 1) to clarify and examine 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) To evaluate both direct and indirect relationships among selected factors associated with knowledge sharing within I-EA-T.

6.1.1 Summary of the Findings Based on the Objectives

This section covers on the results focusing on 2 research questions as below:

6.1.1.1 Research Objective 1: To clarify and examine 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.

Based on the finding of this research, all four factors studied in this research (learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation) were qualified to serve as the essential factors in selection to the improvement of knowledge sharing within the organization (IEAT). The research mentioned that all of the factors played essential roles but indicated different degrees of effects regarding this improvement.

6.1.1.2 Research Objective 2: To compare both direct and indirect relationships among selected factors associated with knowledge sharing within IEAT.

Based on the finding of this research learning organization culture was the only factor found to have both direct and indirect positive effects on the extent of the individual sharing knowledge while other three factors namely: individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and, extrinsic motivation, presented only a direct effect on this capability.

6.1.2 Summary of the Findings Based on the Hypothesis Testing

Table 6.1 shows the results of the hypothesis testing. The summary demonstrates that 1) learning organization culture is positively and directly related to the extent of knowledge sharing; 2) organizational citizenship behavior positively mediates the relationship between learning organization culture and the extent of knowledge sharing; 3) an employee perceive commitment to knowledge sharing positively mediate the relationship between learning organization culture and the extent of knowledge sharing; 4) extrinsic motivation is significantly related to the level of knowledge sharing.

Regarding the results for the impacts of the factors on knowledge sharing, all of the identified variables (learning organization culture, individual's perceived organizational commitment to knowledge sharing, organizational citizenship behavior and extrinsic motivation) were indicated to have a powerful impact on individual's knowledge sharing.

Table 6.1 Summary of the Results of the Hypothesis Testing

No	Hypothesis	Result
H1	Learning organization culture (LO) will be positively and directly related to the extent of knowledge sharing (KnowShare).	Accepted
H2	Organizational citizenship behavior (OCB) positively mediates the relationship between learning organization culture (LO) and the extent of knowledge sharing (KnowShare).	Accepted
H3	An individual's perceived organizational commitment to knowledge sharing (Perceive) positively mediate the relationship between learning organization culture (LO) and the extent of knowledge sharing (KnowShare).	Accepted
H4	Extrinsic motivation (ExMotive) will be significantly related to the level of knowledge sharing (KnowShare).	Accepted

6.2 Conclusions of the Study

This research mainly attempted to clarify and examine the association between learning organization culture, individual perceive 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 (Bock & Kim, 2002; Nonaka & Takeuchi, 1995). De Long and Fahey (2000), confirmed that 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 (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 member 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 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 perceive organizational commitment to knowledge sharing. Learning organization help create a share perception that sharing knowledge is valued in an organization and according to Dana D. B. 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 Kankanhalli et al. (2005) 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 et al. (2006) 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 D. B. 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.

6.3 Contributions of the Findings

In this research, the findings contributed to theory and management, and it is believed that the results increased the growth of knowledge in this field of study.

6.3.1 Contribution to Organization Behavior Field

First, this research agreed with the perspective that 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. This research 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 affirm that learning organization culture is an important factor which create a condition that increases individual knowledge-sharing intention.

Third, whereas this research supported the role of cultural aspect (learning organization culture) that encourages the extent of knowledge sharing, this was also specifically focused on the role of OCB in knowledge sharing. Researcher believe that an individual decision to share knowledge, which is a behavior in which individual must sacrifice a monopoly position of knowledge, is depended upon knowledge owner. Individuals with higher level of OCB will cordially and voluntarily share their knowledge with colleagues without any hesitation or expectation of reward in return

6.3.2 Contribution to Human Resource Management Field (HRM)

The main research finding provides empirical evidence for the argument that the strength of the HRM system for example performance management, incentive and reward system, is positively related to knowledge-sharing behavior at the individual level. According to research finding individuals are motivate to share knowledge when they know that they will receive extrinsic benefits (financial compensation or promotion) in return. Further, this research explicitly comparing two main factors (organizational climate-based factors and incentives based) which gave the result indicating that organizational environment or climate which support a strong pro-knowledge-sharing culture can enhance level of individual knowledge

sharing better than reward-based incentive. Furthermore, when such governance mechanisms, are aligned their combinatory effect may be particularly powerful.

Moreover, this research also confirmed the role of individual perceive organizational commitment to knowledge sharing that encourages and influence the extent of knowledge sharing. According to, Coleman (1990) these individual perception or individual condition of action can shape individual decision of action, for example, to share or not to share knowledge. When members of organization believe that their organization have commitment and norm which value knowledge sharing, individual within such organization will automatically behave in the way that are aligned with such expectation. The implication for this is that, HRM system can contribute to create a strong signal that knowledge sharing activities are respected and valued. As result of this when level of a share perception is higher the level of knowledge sharing within an organization will also increase.

6.3.3 Managerial implication for IEAT

For managerial implication for I-EA-T. This research also emphasized the importance of organization culture and norm as well as appropriate performance management in knowledge sharing.

First, to facilitate knowledge sharing, I-EA-T need to focus more on how to create organization culture and norm that enhance level of knowledge sharing at all levels, because knowledge sharing cannot be achieve by only adopting high technology in knowledge management system or by initiate 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 norm. 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 enhances and facilitates learning in organization.

Second, another critical implication for management is I-EA-T 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 treating knowledge-sharing behavior as a key criterion for talent-pool inclusion. Table 6.2 summarized a keys managerial implication and the role of HR professional in relation to knowledge sharing at IEAT.

Table 6.2 Role of HR professionals and knowledge sharing

	Role of HR professionals
General Strategy	Create a sense of organizational citizenship and by developing an organizational climate that increases and facilitates learning in organization.
Training and Development	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.
Reward System	A key performance indicators (KPI), Compensation must be in line to motivate knowledge sharing.

6.4 Implications for Future Research

In this research, the target population is full time employees of Industrial Estate Authority of Thailand (IEAT). The questionnaires were distributed to 300 employees. However, 247 questionnaires were returned and accounting for 82.3 percent of the target. Some of the questionnaires had a few missing values but still could be used in terms of statistical analysis.

In terms of methodology, there are several limitations. First, this study relied only on a survey questionnaire which were distributed to various working departments according to the approval and scrutinize of the I-EA-T head office. Distribution of the whole set of questionnaires was kindly handled by I-EA-T. As regard, the generalizability of this research is weaken. For instance, sampling method used in this research was unevenly collected from I-EA-T. 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 I-EA-T 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 the major determinants are in implementing 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).

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APPENDIX A

Questionnaire in Thai

แบบสอบถาม

เรื่อง

ปัจจัยที่มีผลต่อการถ่ายทอดความรู้ของบุคลากรในองค์กร

คำชี้แจง

แบบสอบถามชุดนี้เป็นส่วนหนึ่งของการวิจัยในการศึกษาระดับปริญญาเอกของคณะรัฐประศาสนศาสตร์ สาขาการบริหารพัฒนา หลักสูตรนานาชาติ สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า) โดยมีวัตถุประสงค์เพื่อต้องการศึกษาเพื่อศึกษาปัจจัยที่ส่งเสริมประสิทธิภาพในการถ่ายทอดองค์ความรู้ของบุคคลากรในองค์กร ข้อมูลที่ได้รับจากการศึกษาในครั้งนี้จะถูกใช้เพื่อวัตถุประสงค์ทางการศึกษาอย่างเดียว โดยข้อมูลส่วนบุคคลของท่านจะถูกเก็บเป็นความลับ

ส่วนที่ 1: ข้อมูลส่วนบุคคล

คำชี้แจง: โปรดตอบคำถามต่อไปนี้

1. เพศ: ชาย ☐ หญิง ☐

2. อายุ

น้อยกว่า 30 ปี ☐

30-50 ปี ☐

มากกว่า 50 ปี ☐

3. ท่านทำงานในองค์กรนี้มานาน

☐ 0-5 ปี ☐ 6-10 ปี

☐ 11-15 ปี ☐ 16-20 ปี

☐ 21 ปี หรือ มากกว่า

ส่วนที่ 2: ทัศนคติที่มีต่อปัจจัยที่มีอิทธิพลต่อการถ่ายทอดความรู้ของแต่ละบุคคล โปรดระบุทัศนคติของท่านในแต่ละข้อตามสเกลที่กำหนด

โปรดทำเครื่องหมาย √ ลงในช่องที่เห็นว่าตรงกับความคิดเห็นของท่านมากที่สุด

5 = เห็นด้วยอย่างยิ่ง 4 = เห็นด้วย

3 = เฉยๆ 2 = ไม่เห็นด้วย

1 = ไม่เห็นด้วยอย่างยิ่ง

วัฒนธรรมองค์กรแห่งการเรียนรู้ (Learning Organization)	**1**	**2**	**3**	**4**	**5**
1. องค์กรของท่านบุคลากรให้ความช่วยเหลือซึ่งกันและกันในการเรียนรู้					
2. องค์กรของท่านให้การสนับสนุนในด้านเวลา แก่บุคลากรสำหรับการเรียนรู้					
3. ในองค์กรของท่านบุคลากรจะได้รับรางวัลสำหรับการเรียนรู้					
4. ในองค์กรของท่านมีการเปิดโอกาสให้บุคคลากร ให้ข้อมูลตอบกลับ (feedback) อย่างเปิดเผยและตรงไปตรงมา					
5. องค์กรของท่านเปิดโอกาสให้บุคลากรตั้งคำถามว่า ‘ทำไม’ โดยไม่ถือลำดับชั้นของตำแหน่ง					
6. ในองค์กรของท่านบุคคลากรให้ความสำคัญกับการสร้างความเชื่อถือกับผู้อื่น					
7. ในองค์กรของท่าน กลุ่ม/ฝ่าย/สายงาน มีอิสระในการปรับเป้าหมายในการทำงานตามที่จำเป็น					
8. ในองค์กรของท่าน กลุ่ม/ฝ่าย/สายงาน มีการทบทวนปรับปรุงความคิดภายหลังจากทำการเก็บข้อมูลและอภิปรายร่วมกัน					
9. ในองค์กรของท่าน กลุ่ม/ฝ่าย/สายงาน มีความมั่นใจว่าองค์กรจะรับฟังปฏิบัติตามข้อเสนอแนะของตน					
10. ในองค์กรของท่านมีการยอมรับและยกย่องผู้ที่ริเริ่มสิ่งใหม่ๆ					

11. ในองค์กรของท่าน พนักงานมีส่วนร่วมในการบริหารที่ต้องการเพื่อทำงานให้สำเร็จลุล่วง					
12. องค์กรของท่านให้การสนับสนุนบุคลากรที่กล้าเสี่ยง (อาทิเช่น: คิดนอกกรอบ) เพื่อความก้าวหน้าขององค์กร					
13. องค์กรของท่านมีการสร้างระบบวัดความแตกต่างระหว่างผลการปฏิบัติงานที่เป็นจริงกับผลการปฏิบัติงานที่คาดหวัง					
14. ในองค์กรของท่านบุคลากรสามรถเข้าถึง ข้อมูล/บทเรียน ที่ต้องการได้					
15. องค์กรของท่านมีการวัดผลการฝึกอบรมจากเวลาและทรัพยากรที่ใช้					
16. ในองค์กรของท่านผู้บริหารสูงสุดกำกับดูแล/ให้คำปรึกษา/ชี้แนะแนวทาง ให้กับพนักงานภายใต้การนำของตน					
17. ในองค์กรของท่านผู้บริหารสูงสุดมองหาโอกาสที่จะเรียนรู้อย่างต่อเนื่อง					
18. ในองค์กรของท่านผู้บริหารสูงสุดให้ความมั่นใจต่อพนักงานว่าการปฏิบัติงานมีความสอดคล้องกับค่านิยมขององค์กร					
19. องค์กรของท่านสนับสนุนให้ทุกคนมีมุมมองที่กว้างไกล (global perspective)					
20. องค์กรของท่านสนับสนุนให้บุคคลากรยึดเอามุมมองของผู้บริหารมาใช้ประกอบการตัดสินใจในสถานการณ์ต่างๆ					
21. ในองค์กรของท่านเมื่อพนักงานหรือบุคลากรต้องการค้นหาคำตอบหรือแก้ไขปัญหา เขาหรือเธอจะได้รับความช่วยเหลือจากหลากหลาย กลุ่ม/ฝ่าย/สายงานในองค์กร					

แรงจูงใจภายนอก (Extrinsic Motivation)	**1**	**2**	**3**	**4**	**5**
22. ท่านพอใจที่จะได้รับรางวัล (อาทิเช่น การเลื่อนตำแหน่ง หรือโบนัส) เพื่อเป็นแรงจูงใจในการ**ถ่ายทอดความรู้ของคุณให้กับองค์กร**					
23. ท่านพอใจที่จะได้รับรางวัล (อาทิเช่น การเลื่อนตำแหน่ง หรือโบนัส) เพื่อเป็น					

แรงจูงใจในการ**นำความรู้ภายในองค์กรมาปรับใช้ให้เป็นประโยชน์**					

พฤติกรรมการเป็นสมาชิกที่ดีขององค์การ (Organizational Citizenship Behavior)	**1**	**2**	**3**	**4**	**5**
24. ท่านยินดีที่จะมีส่วนร่วมในงานซึ่งอยู่นอกขอบข่ายหน้าที่ของท่าน เพื่อช่วยให้องค์กรของท่านดำรงภาพลักษณ์ที่ดี					
25. ท่านให้ความสนใจและติดตามการพัฒนาและเติบโตขององค์กรของท่าน					
26. ท่านปกป้องและแก้ต่างแทนองค์กรของท่านเมื่อมีใครพูดถึงองค์กรของท่านในทางเสียหาย					
27. ท่านภูมิใจที่ได้เป็นส่วนหนึ่งในองค์กรของท่าน					
28. ท่านยินดีที่จะเสนอแนะและมีส่วนร่วมในการช่วยพัฒนาศักยภาพขององค์กรของท่าน					
29. ท่านมีความรู้สึกผูกพันและภักดีกับองค์กรของท่าน					
30. ท่านไม่ลังเลที่ช่วยเหลือองค์กรของท่านให้รอดพ้นจากปัญหาที่อาจจะเกิดขึ้น					
31. ท่านมีความใส่ใจและห่วงใยในภาพลักษณ์ขององค์กรของท่าน					
32. ท่านช่วยเหลือเพื่อนร่วมงานเมื่อพวกเราไม่สามารถปฏิบัติหน้าที่ได้					
33. ท่านยินดีที่จะสละเวลาของท่านให้กับเพื่อนร่วมงาน เมื่อพวกเขาประสบปัญหาในการทำงานซึ่งมีผลต่อสวัสดิ์ภาพขององค์กร					
34. ท่านยินดีที่จะปรับเปลี่ยนตารางงานของท่าน เมื่อเพื่อนร่วมงานของท่านมีความจำเป็นต้องลาหยุด					
35. ท่านต้อนรับเพื่อนร่วมงานใหม่ด้วยอัธยาศัยที่ดี เพื่อให้พวกเขารู้สึกได้ถึงการเป็นน้ำหนึ่งใจเดียวกันของทีม					
36. ท่านแสดงความห่วงใยและให้ความสำคัญกับเพื่อนร่วมงานของท่าน แม้ว่าในขณะนั้นท่านกำลังเผชิญกับสถานการณ์ทางธุรกิจหรือสถานการณ์ส่วนบุคคลที่ตึงเครียด					
37. ท่านยินดีสละเวลาของท่านให้กับเพื่อนร่วมงานเมื่อพวกเขามีปัญหาซึ่งอาจจะไม่					

เกี่ยวข้องกับเรื่องงาน					
38. ท่านยินดีให้ความช่วยเหลือเพื่อนร่วมงานของท่าน ทำงานในหน้าที่ซึ่งเป็นความรับผิดชอบของเขา					
39. ท่านยินดีที่จะแบ่งปันของใช้ส่วนตัวที่จำเป็นหรือเกี่ยวข้องกับการทำงาน (อาทิ เช่น กระดาษ, ปากกา, ที่ชาร์จโทรศัพท์ ฯลฯ) กับเพื่อนร่วมงานของท่าน					

ทัศนคติส่วนบุคคลของพนักงานในองค์กร ที่มีต่อความผูกพันขององค์กรในการถ่ายทอดความรู้ (Individual's perceived organizational commitment to knowledge sharing)	**1**	**2**	**3**	**4**	**5**
40. การถ่ายทอดความรู้ในระดับบุคคล ได้รับการยอมรับและยกย่องในองค์กรของท่าน					
41. องค์กรของท่านให้การยอมรับและยกย่องบุคลากรที่ **ร่วมสร้างองค์ความรู้ใหม่ๆ** และนำความรู้เหล่านั้นมาใช้ประโยชน์					
42. องค์กรของท่านให้การยอมรับและยกย่องบุคลากรที่ **เรียนรู้/เปิดรับ องค์ความรู้ใหม่ๆ** และนำความรู้เหล่านั้นมาใช้ประโยชน์					

การถ่ายทอดความรู้ (Knowledge Sharing)	**1**	**2**	**3**	**4**	**5**
43. เมื่อข้าพเจ้าได้เรียนรู้สิ่งใหม่ๆ ข้าพเจ้าจะถ่ายทอดให้ เพื่อนร่วมงานทราบเกี่ยวกับสิ่งที่ได้เรียนรู้มา					
44. ข้าพเจ้าแบ่งปันและบอกกล่าวให้เพื่อนร่วมงานทราบเป็นประจำ ในสิ่งที่ข้าพเจ้ากำลังทำอยู่					
45. เพื่อนร่วมงานของข้าพเจ้าเต็มใจที่จะแลกเปลี่ยนหรือถ่ายทอด วิธีการและเทคนิคในการทำงานต่างๆ ที่พวกเขาทำ					
46. เมื่อใดก็ตามที่เพื่อนร่วมงานของข้าพเจ้าเก่งในเรื่องอะไร พวกเขาจะสอน					

ข้าพเจ้าว่าต้องทำอย่างไรในสิ่งที่จำเป็น และเหมาะสม					
47. ถ้าผลงานของข้าพเจ้าไม่ได้เป็นในสิ่งที่ควรจะเป็น เพื่อนร่วมงานของข้าพเจ้าจะช่วยเหลือและให้คำปรึกษาเพื่อแก้ไขให้ดีขึ้น					
48. ข้าพเจ้าจะพูดคุยกับเพื่อนร่วมงานเสมอเกี่ยวกับวิธีการ พัฒนาความรู้ของข้าพเจ้า					
49. ข้าพเจ้าได้รับความรู้ในการแลกเปลี่ยนและถ่ายทอดความรู้ ซึ่งกันและกันระหว่างบุคคลในองค์กรของข้าพเจ้า					

APPENDIX B

Questionnaire in English

Questionnaire

FACTORS INFLUENCING THE IMPROVEMENT OF KNOWLEDGE SHARING: EMPIRICAL STUDY OF THE INDUSTRIAL ESTATE AUTHORITY OF THAILAND (IEAT)

Dear participant:

This survey is a part of my study as a full-time doctoral student at the National Institute of Development Administration (NIDA). All of the answers provided in this survey will be kept confidential and viewed by the researcher for academic purposes only.

Part 1: Personal Data

Please select the item that fits you best.

4. Gender: Male ☐ Female ☐

5. Age

Below 30 years old --------

30-50 years old ---------

Above 50 years old ---------

Part 2: Attitudes about the factors influencing the improvement of individual capability in knowledge transfer

Please indicate your level of agreement with the following items related to the current situation in your organization. Using a scale of 5-1, where 5 represents Strongly Agree (SA), 4 = Agree (A), 3 = Neutral (N), 2 = Disagree (DA) and 1 represents Strongly Disagree (SDA).

Learning organization	**1**	**2**	**3**	**4**	**5**
50. In my organization, people help each other learn.					
51. In my organization, people are given time to support learning					
52. In my organization, people are rewarded for learning.					
53. In my organization, people give open and honest feedback to each other.					
54. In my organization, whenever people state their view, they also ask what others think.					
55. In my organization, people spend time building trust with each other.					
56. In my organization, teams/groups have the freedom to adapt their goals as needed					
57. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.					
58. In my organization, teams/groups are confident that the organization will act on their recommendations					
59. My organization creates systems to measure gaps between current and expected performance					
60. My organization makes its lessons learned available					

to all employees					
61. My organization measures the results of the time and resources spent on training					
62. My organization recognizes people for taking initiative.					
63. My organization gives people control over the resources they need to accomplish their work.					
64. My organization supports employees who take calculated risks.					
65. My organization encourages people to think from a global perspective					
66. My organization works together with the outside community to meet mutual needs					
67. My organization encourages people to get answers from across the organization when solving problems.					
68. In my organization, leaders mentor and coach those they lead					
69. In my organization, leaders continually look for opportunities to learn					
70. In my organization, leaders ensure that the organization's actions are consistent with its values					

Extrinsic motivation	**1**	**2**	**3**	**4**	**5**
71. How would you prefer to be rewarded by increments/bonuses or by promotion for transferring knowledge in your organization?					
72. How would you prefer to be rewarded by increments/bonuses or by promotion for reusing knowledge in your organization?					

Organizational citizenship behavior (OCB)	1	2	3	4	5
73. I attend functions that are not required but that help the organizational image.					
74. I keep up with developments in my organization.					
75. I defend the organization when other employees criticize it.					
76. I show pride when representing my organization in public.					
77. I offer ideas to improve the functioning of the organization.					
78. I express loyalty toward organization.					
79. I take action to protect my organization from potential problems.					
80. I demonstrate concern for the image of my organization.					
81. I help others who have been absent.					
82. I willingly give my time to help colleagues who have work related problems.					
83. I adjust my schedule to accommodate colleague's requests for time off.					
84. I go out of my way to make newer colleagues feel welcome in the work group.					
85. I show genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.					
86. I give up time to help colleagues who have work or non-work problems.					
87. I assist colleagues with their duties.					
88. I shares personal property with others to help their work.					

Individual's perceived organizational commitment to knowledge sharing	**1**	**2**	**3**	**4**	**5**
89. Knowledge sharing is valued in my company.					
90. Uncovering and leveraging existing knowledge is highly. valued in my company					
91. Acquiring and leveraging new knowledge is highly valued in my company.					

Knowledge sharing	**1**	**2**	**3**	**4**	**5**
92. When I learn something new, I like to share it with my colleagues.					
93. I share regularly what I am doing with my colleagues.					
94. My colleagues are willing to share or transfer the way they do things.					
95. When my colleagues are good at something, they teach me how to do it where necessary and appropriate.					
96. If my performance is not what it should be, my colleagues will help me to improve.					
97. I regularly have conversations with my colleagues about how to improve my knowledge.					
98. I engage in knowledge sharing or knowledge transfer among the individuals in my organization.					

BIOGRAPHY

NAME	Ms. Pitchaya Javakorn
ACADEMIC BACKGROUND	Bachelor of Art (Southeast Asian Studies), 2011, Thammasat University. Master of Art (European Studies), 2013, Chulalongkorn University.
EXPERIENCES	-