A STUDY OF CONCEPTUAL MODEL FOR LEARNING TRANSFER IN THAI BANKING SECTOR

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ABSTRACT

Title of Dissertation	A Study of Conceptual Model for Learning Transfer in Thai Banking Sector
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The main purpose of this research was to study Holton's HRD evaluation and research model for learning transfer, excluding the organizational performance outcome portion, in order to develop and validate an instrument to measure the factors affecting the learning transfer of Thai employees and to test the emerging conceptual model of learning transfer with samples in the Thai banking sector, and to investigate the factors affecting the learning transfer and its relationship. The study includes an exclusive literature review of Edward Holton's HRD evaluation model proposed by Edward Holton in 2005, the process of developing a new instrument of learning transfer, and testing the emerging learning transfer model. The research process was composed of three phases: Phase I, scale development**,** involved drafting an English version of a 72-item-scale from a related literature review, conducting back translation, and testing content validity with HR experts by using the index of item-objective congruence (IOC); Phase II, scale validation**,** involved analyzing all of the items using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) with 679 front-line employees from three large-sized Thai commercial banks; and Phase III**,** model testing with structural equation modeling (SEM), was carried out in order to ascertain the causal links among the latent variables. The exploratory factor analysis results yielded six emerging constructs of the 71-item-scale; namely traits, employee commitment, motivation to improve work through learning, lack of opportunity to apply, a supportive environment, and transfer design. The confirmatory factor analysis

results confirmed that the six-construct-model validation had a good fit. The results provided strong support for the structure of 15 factors: 7 factors in the specific training domain and 8 factors in the general training domain. The structural model testing disclosed that a supportive environment had a high impact on the motivation to improve work through learning, followed by traits and transfer design, whereas employee commitment hardly had any impact on motivation to improve work through learning, as opposed to what has been hypothesized in Holton's HRD evaluation and research model (2005). The results of this study yield a new and comprehensive learning transfer measurement scale based on the emerged model, which can contribute not only to the work of academics, but also to Thai HRD practitioners and the Thai banking sector in order to systemically diagnose, detect, and solve problems regarding training effectiveness. Despite the fact that this study had not achieved testing the entire model, the results yielded valuable insights into the factors affecting learning transfer. Future studies should aim at validating the model and instrument in this study, as well as test the entire model using structural equation modeling, which could be validated in steps: on a single level, for example validating learning and all of the intervening variables affecting learning, and then moving on to a multi-level analysis during the next phase.

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A doctoral degree had never been my goal until I received a challenging career change offer from Khun Lindsay, moving from sales management to Human Resource Development. Life became much tougher being a full-time executive at the demanding workplace and studying the Ph.D. at the same time, so much that I almost gave up. Through this journey I learned a lot about myself, compassion and friendship. I never regretted the experience! Being able to graduate with a Ph.D. didn't mean that one was smarter, but it meant that the person had perseverance and discipline to follow through. And of course you needed to have a few good and influential friends who were always there to pull you up and help out, when you were desperate.

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CHAPTER 1

INTRODUCTION

1.1 Rationale and Problem Statement

Despite the fact that learning transfer has been extensively studied by researchers since the 19th century (Woodrow, 1927; Campbell, 1971), the complexity of the multivariate learning transfer system remains unclear to global researchers (Grose & Britney, 1963; Barnett & Ceci, 2002; Hutchins, Nimon, Bates, & Holton, 2013), with several conflicting and inconsistent findings regarding the factors affecting it (Blume et al., 2010). Grose and Britney (1963), as cited in Blume et al. (2010, p. 3), posited that "the transfer of learning has been an enduring problem in psychology and education". Additionally, Barnett and Ceci (2002, p. 3) indicated that "the history of transfer research goes back more than 100 years, with researchers debating the nature, contexts and prevalence of transfer". Further, Blume et al. (2010, p. 5) viewed that although there has been a number of transfer studies, "several inconsistent and conflicting findings" have been reported.

Learning transfer remains an "unsettled" issue, not only among researchers, but also among human resource development practitioners, as evident from the fact that the subject has continually been in the spotlight at annual ASTD conferences from 2012-2014, where over 9,000 global HRD practitioners congregate to share and learn about HRD solutions to the problems challenging them at work (ASTD, 2014a). Despite several decades of research work, global HRD professionals in organizations continue to struggle with persistent transfer of training problems (Tharenou, Saks, & Moore, 2007; Hutchins et al., 2013).

Approximately $100 billion of the U.S. organization budget is allocated to training investment expenditures each year (Paradise, 2007; Trainingmag.com, 2018) with the hope that staffs will not only be better equipped with new knowledge and skills, but will also be able to transfer what they learn to their work. According to the 2013

state of the industry ASTD research, it was estimated that organizations spent approximately USD 164.0 billion on employee training in 2012 (ASTD, 2013, p. 7), 61% of which (or USD 100.2 billion) was spent on internal employee training. However, research has shown that only 10 to 20 percent of the learning was transferred to the job or that resulted in behavioral change (Georgenson, 1982; Curry et al., 1994). Furthermore, Saks (2002) stated that 40% of the trainees failed to apply what they had learnt immediately after the training. In Thailand, the Department of Skill Development (DSD) requires organizations with over 100 employees to provide training to at least 50% of the workforce and incentivizes organizations with up to a 200% tax deduction grant as stated in the Skill Development Promotion Act B.E. 2545 (A.D. 2002) (Smiti, 2009). However, the learning effectiveness has never been declared. Training is a waste if the learning is not put into effect at work (Kozlowski & Salas, 1997). In other words, if the training is not transferred to the job, it has no value and incurs for organizations tremendous costs.

Furthermore, a few research articles have indicated that the learning function is being challenged to show a return on the training (Huselid, 1995; Martocchio & Baldwin, 1997, as cited in Salas & Cannon-Bowers, 2001; Tharenou, Saks, & Moore, 2007; Aguinis & Kraiger, 2009; Hutchins et al., 2013). The struggle of global HRD practitioners surfaced from an increasing number of participants and the popularity of "learning transfer" ASTD certificate programs and pre-conference workshops in 2014, such as Jefferson's learning transfer certificate program, Phillips' measuring return on investment certificate program, Smith's evaluating learning impact certificate program, Bloom's measuring the success and ROI of coaching programs workshop, and Phillips' effective survey design for learning professionals workshop (ASTD, 2014b).

Furthermore, one of the nine learning tracks at the ASTD conference 2014 was dedicated to learning measurement and analytics, whereby 28 educational sessions on learning transfer were shared.

With the growing demand from businesses to see the tangible contribution from the training invested, over several decades a number of researchers have come up with different models to understand and evaluate the return on training and the complex learning transfer system, such as Kirkpatrick's four-level taxonomy (Kirkpatrick, 1959), Baldwin and Ford's model of the transfer process (Baldwin & Ford, 1988),

Holton's HRD evaluation research and measurement model (Holton, 1996; Holton et al., 2000; Holton, 2005), and Phillips' training ROI evaluation (Phillips & Phillips, 2005). The essence of these efforts was to contribute to the HRD field, create awareness of the importance of transfer evaluation among HRD professionals, and assist them in establishing a best-fit transfer evaluation for their organization, as Russ-Eft and Preskill (2009, p. 106) put it: "Without ongoing evaluation systems, learning, performance, and change professionals have no basis on which to judge the merits and contributions of what they do in organizations".

Among the training evaluation tools, Holton's HRD evaluation research and measurement model (Holton, 1996) and the Learning Transfer System Inventory (LTSI), developed by Holton, Bates, and Ruona (2000) as a training diagnostic tool, have most frequently been cited as well-validated models in terms of construct validity, criterion validity, and cross-cultural validity (Bates, Holton, Seyler, & Carvalho, 2000; Ruona, Leimbach, Holton, & Bates, 2002; Yamnill & McLean, 2005). The LTSI consists of two domains: the specific training domain measuring trainees' experience in the specific training session, while the general training domain measures the trainees' experience in other general training sessions. LTSI version 1 (Holton et al., 1997) consists of nine constructs with a 63-item instrument. A revision was then made in LTSI version 2 to correspond to the HRD evaluation research and measurement model (Holton, 1996) and new factors were added and tested, yielding 68 items measuring 16 factors: 11 factors in specific training and 5 factors in the general training domain (Holton et al., 2000).

Many Thai HRD academics (Sirikalaya Vathanalee, 2004; Warisara Kasemsri, 2005; Yamnill & McLean, 2005; Thammarat Jungsiriwattana, 2006; Pasachon Bumroongtham, 2008) have conducted research on learning transfer effectiveness and have searched for the best-fit models and tools available for organizations in Thailand. The problem with this is that although a number of learning transfer models have been developed by researchers and practitioners, most of them were developed from the western perspective, which may not necessarily fit the Thai organizational culture context, as suggested by Yamnill and McLean, (2005, p. 325), who stated that "the HRD concept and the characteristic of organizations in each country (including Thailand) might differ".

One of the most frequently-cited research articles on the transfer of training in Thailand, Yamnill and McLean's factors affecting transfer of training in Thailand (2005), is a good example of cultural differences. They validated LTSI version 2 by replicating Holton et al.'s study (2000) with Thai samples. Their study reported the discrepancy found included cultural and language differences as follows: "the ambiguity of some items in the original, making the translation of some words difficult" (Holton et al., 2000, p. 340); "eleven items were dropped because of weak factor loadings" (Holton et al., 2000, p. 330); and factors with low reliability, such as personal capacity for transfer, learner readiness, performance outcome expectations, and feedback/performance coaching.

Yamnill and McLean (2005, p. 340) concluded in their study that "the transfer system and the translated LTSI are of potential validity in Thailand, however, this instrument has some weaknesses, such as a disproportionate number of items across factors and low internal consistency reliability in some factors." Thus, Yamnill and McLean (2005) suggested that this instrument required revision and additional research. Apart from Yamnill and McLean's (2005) study, discrepancies in the findings of other learning transfer research adopting the LTSI construct conducted with Thai samples have also been discovered. Supervisor sanctions, personal outcomes positive and personal outcomes negative were not found as affecting learning transfer (Thammarat Jungsiriwattana, 2006; Pasachon Bumroongtham, 2008). These results differed from those in the studies performed in western countries, where locus of control and self-efficacy emerged as the factors affecting learning transfer, and rewards were found to be the factor least affecting it (Warisara Kasemsri, 2005).

According to Hofstedt (1980, para. 1), "culture is the collective programming of the mind distinguishing the members of one group or category of people from others", because the culture of each nation is different, and the learning transfer factors of the Thai people are likely to be different from those of the people in the U.S. or western culture. It is also evident that some factors stated in the LTSI model are not necessarily relevant to the Thai context and there can also be other factors that the LTSI model overlooks yet impact the learning transfer of Thai people.

However, after the emergence of new evidence from a number of researches (Colquitt, LePine, & Noe, 2000; Morgan & Casper, 2000; Noe, 2000; Naquin & Holton,

2002; Ruona et al., 2002; Tan, Hall, & Boyce, 2003) related to the learning transfer system, Holton (2005) modified the HRD evaluation and research model by combining 8 new factors to the existing 16 factors; altogether 24 factors, whereby 7 dispositional factors were added to the general training domain and 1 environmental factor was added to the specific training domain . Interestingly, there has been no research modifying or validating the scale based on the updated model of Holton's (2005) (R. Bates, personal communication via email, November 18, 2015).

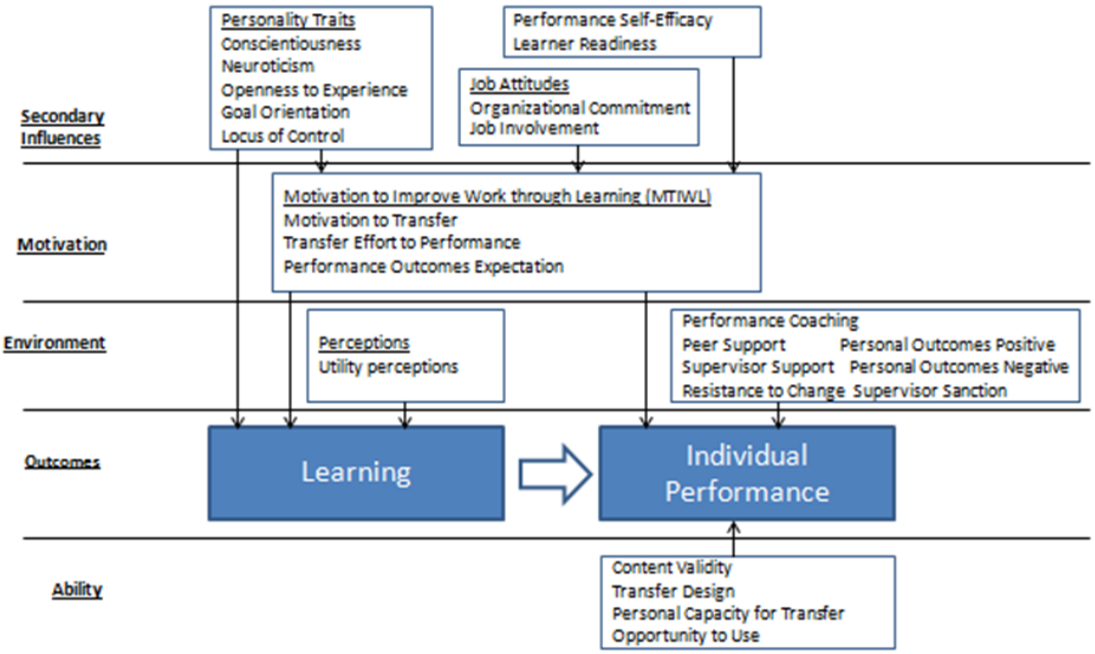

Figure 1.1 Holton's HRD Evaluation and Research Model

Source: Adapted from Holton, 2005.

As illustrated in figure 1.1, Holton (2005) added new variables to the three constructs: 1) secondary influences (individual characteristics, job attitudes, performance self-efficacy and learner readiness), 2) perception of training (utility perceptions), and 3) motivation (motivation to improve work through learning). In terms of individual characteristics, five new variables were integrated into the model, three of which were derived from the big five factors; namely conscientiousness, neuroticism (emotion stability), openness to experience, being goal oriented, and locus

of control (Holton, 2005). The second modified construct was job attitudes. Holton proposed from the new research evidence that job involvement and organization commitment were "the second strongest predictor of motivation" (Holton, 2005, p. 4).

The perception of training construct was also modified to include utility reactions (Morgan & Casper, 2000), as there was new evidence supporting them as predictors of learning performance outcomes (Ruona, Leimbach, Holton, & Bates, 2002; Holton, 2005).

Despite the emergence of the revised HRD evaluation and research model (2005), Bates et al. (2012) continued to use the former Holton model (1996) to validate LTSI instrument version 2 (Holton et al., 2000). With an exploratory factor analysis and confirmatory factor analysis they performed cross-culture LTSI validation research using data collected in 17 countries due to "minor discrepancies in factor solutions in several studies together with problematic fit of some items" (Bates et al., 2012, p. 549). The research results of the exploratory factor analysis confirmed that a 16 factor structure, the 11-factor model for the program-specific domain, and a 5-factor model for the general training domain, were a good fit, while that of the confirmatory factor analysis, testing hypotheses about how many three-item factors exist in the program-specific and training-general domains of LTSI showed little overlap among the scales. The research yielded an improved version of LTSI assessment instrument version 4 (Bates et al., 2012), with a decreasing number of items (from 89 to 48 items) and a proportionate three-item scale for each factor.

Learning Transfer in the Thai Banking Sector

The Bangkok Post (2017, August 30, para. 7) alarmingly reported that Thailand's household debt was seen as limiting Thai economic growth, with "young adults being the major new borrowers of personal loans." The proportion of Thai household debt versus the national gross domestic product (GDP) remained high at 80.4% in the first quarter of 2016 and at 77.6% in the second quarter of 2018 (Bank of Thailand, 2018c).

According to the Bank of Thailand's report (2018a), there were 15 Thai commercial banks with a total number of 6,718 branches. Of all the available channels through which financial information and advice were offered, the bank branch channel

was the top choice Thai consumers rely on Bank of Thailand's household survey (Bank of Thailand, 2016). In addition, based on a training spending report from the Ministry of Labor, over 600 million baht was spent on staff training in 2016. However, despite the training investment spent, the Bank of Thailand's household survey in 2016, with 10,866 respondents, revealed that there was "a need for related agencies to collaborate and raise people's awareness with regards to the importance of saving for retirement and to begin their financial planning at an early age in order to achieve their financial goals and long term financial sustainability" (Bank of Thailand, 2016, p. 26).

Thus, the branch front-line staff's ability to transfer the knowledge and skills that they learned to the job was seen as very critical in terms of providing appropriate and correct financial information and recommendations regarding personal financial planning to the Thai households. Further, the learning transfer effectiveness of the banks' front-line staff should be diagnosed by an evaluation tool reflecting the Thai cultural context so that Thai HRD practitioners are aware of the issues and are ready to take action to remedy them.

1.2 Objectives of the Study

After the emergence of new evidence from research and theories related to the learning transfer system (Barrick & Mount, 1991; Colquitt & Simmering, 1998; Colquitt, LePine, & Noe, 2000; LePine, Colquitt, & Erez, 2000; Morgan & Casper, 2000; Herold, Davis, Fedor, & Parsons, 2002; Naquin & Holton, 2002; Ruona, Leimbach, Holton, & Bates, 2002; Tan, Hall, & Boyce, 2003), Holton (2005) revised his previous version of the HRD evaluation and research model and modified three constructs, namely individual learner characteristics, job attitudes, and perceptions of training, and added motivation to improve work through learning (MTIWL) (Naquin & Holton, 2002), combining motivation to learn (MTL) and motivation to transfer (MTT) to the model. His purpose was to have "an updated version of the model that is more appropriate for empirical testing" (Holton, 2005, p. 38). Interestingly, there has been no research testing the updated version of Holton's evaluation and research model (2005) (R. Bates, personal communication via email, November 18, 2015). The objectives of this research then are as follows:

1) To study Holton's conceptual model from 2005 (excluding the organizational performance outcome portion)

2) To develop and validate a new learning transfer instrument combining the modified constructs from Holton's 2005 conceptual model

3) To test the emerged learning transfer conceptual model, adapted from Holton, 2005, with samples in Thai banking sector, and to investigate the factors affecting the learning transfer and causal relationships among the factors in the model.

1.3 Research Questions

1.3.1 Main Research Question

The main research question is "What factors, hypothesized in Holton's evaluation and research model (2005), are identified when using the LTSI translated for the Thai population in the banking sector?"

1.3.2 Following Questions

The following research questions are below.

1) "What are the factors affecting the conceptual model for learning transfer in the Thai banking sector?"

2) "To what extent does each factor in the conceptual model influence other factors?"

1.4 Significance of the Study

The results of this study will contribute to a number of significant domains; namely, academics, Thai HRD practitioners, the banking sector, and future researchers as follows.

1.4.1 Contribution to Academics

As there are increasing tensions and dilemmas between research and practice, and between HRD researchers and HRD practitioners, this research will help bridge the

gap between research and practice in the area of learning transfer models and practical diagnostic tools. The results of past research, replicating the western conceptual model conducted with Thai samples, have shown a discrepancy when compared to the western samples. Thus, utilizing Holton's updated revised HRD evaluation and research model to develop new scales for additional constructs in the revised model, which has never been tested empirically, combined with the improved version of the LTSI assessment instrument version 4 to test the learning transfer with a sample in the Thai banking sector, might yield different results that are more relevant to Thai HRD practitioners and will help to dissolve the "validity versus usefulness" tension between academics and practitioners.

1.4.2 Contribution to Thai HRD Practitioners

In terms of Thai HRD practitioners, by understanding the factors that influence learning transfer and how they are related to one another, Thai HRD professionals will be able to evaluate training more objectively and more precisely, rather than continuing to make decisions based on the reactions of learners only. This is thus a crucial in developing additional scales and for testing the updated learning transfer evaluation model, reflecting the factors affecting the learning transfer that better fit the Thai cultural context and identifying the relationships among the factors.

1.4.3 Contribution to the Thai Banking Sector

The banking business is a service industry, and the most valuable asset in a service industry is knowledgeable workers. Knowledgeable workers have become a scarce asset, and the "war for talent" is prevalent in all Southeast Asian countries. Knowledgeable employees are scarce and therefore are key strategic resources.

The competitive edge of the Thai banking sector in this era is neither products nor technology, but people. Banks are pressured by consumer demand to deliver value added, such as financial planning expertise and financial advice to set up and manage a business. Training the front-line staff is thus crucial. However, learning transfer effectiveness is much more crucial. This model will help Thai banks understand the factors influencing learning transfer, be able to diagnose, detect, and solve specific problem, as well as to enhance training effectiveness.

1.4.4 Contribution to Future Researchers

Future researchers can further validate this model with reference to banks and other types of service industries, such as hospitals and hotels. Furthermore, it might be useful to validate it in other AEC and ASEAN countries whose cultural context is similar to that of Thailand.

In summary, this study intends to contribute to the field using the validated learning transfer model of Holton 2005 and new scales for additional constructs corresponding to the model. The study can be generalized to the Thai banking sector and possibly other service sectors, such as hotels and hospitals, in Thailand.

1.5 Expected Outcomes

The expected outcomes are twofold. First is validating Holton's evaluation and research model 2005 with a sample in Thai banking sector; and second is developing and testing the new learning transfer measurement scales corresponding to the model emerging from Holton's evaluation and research (2005). The factors that are seen to cause transfer problems in the Thai banking sector can then be pinpointed and a remedy can be sought. Furthermore, Thai HRD practitioners can gain trust and reputation as a "true business partner" from line managers and CEOs in that they will be able to demonstrate a return on training and contributions to the organization in terms of business impacts. As a consequence, training expenditures would be recognized as an investment rather than a cost.

Furthermore, a large gap between research, theory, and practice in the area of learning transfer still exists. In the global HRD practitioner circle, HRD professionals have been pressured to demonstrate a return on training, and they have cherished the notion of being able to evaluate training effectiveness. Yet, in terms of their daily routine, most organizations in Thailand are still checking solely the trainee's reactions to the training, which is far from illustrating the return on training to top management. In terms of research, although there are a significant number of learning transfer models and research available in the literature, very few have been adopted by organizations. This research aims to bridge the gap between research, theory and practice in the area of the learning transfer in Thai banking sector context.

1.6 Definitions of Key Terms

1) Learning transfer is the process when the trainee applies the knowledge, skills, and attributes learned in the training to the job setting and maintains them over a period of time (Baldwin & Ford, 1988). In this study, Holton's revised HRD evaluation and research model (2005) was used as the conceptual framework.

2) Learning is defined as formal learning that is planned, structured, instructor-led, and objective-based, leading to improvement of the trainee's knowledge, skills, and attributes and ultimately the organizational outcomes (Watkins & Marsick, 1992; Rowden, 2002, as cited in Matsuo & Nakahara, 2013).

3) Personality traits are the personal characteristics of the trainee, influenced by the surrounding environment, which may enhance or impede learning through training and learning transfer. In this study the personality traits affecting learning and motivation to improve work through training include conscientiousness, neuroticism, openness to experience, goal orientation, and locus of control (Barrick & Mount, 1991; Martocchio & Judge, 1997; Holton, 2005; Chiaburu & Lindsay, 2008; Yamkovenko & Holton, 2010; Grossman & Salas, 2011).

4) Job attitudes theoretically relate to the motivation to learn and the motivation to transfer learning (Holton, 2005). They reflect an individual's commitment to and involvement in one's job. The higher the level of job involvement, the more motivated the person is to learn and to transfer the learning (Colquitt et al., 2000). However, there is little evidence that job attitudes are related to motivation. Thus, Holton proposed that job involvement and organization commitment be included in his updated model (Holton, 2005).

5) Self-efficacy is defined as the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainment (Bandura, 1997). It has been cited as being closely linked to job performance (Colquitt et al., 2000).

6) Motivation to improve work through learning (MTIWL) is defined as "the motivation to improve work outcomes by engaging in training or learning activities and using what is learned to perform job functions differently" (Naquin & Holton, 2002, p. 359).

7) The perceptions or reactions of trainees are the perceived reactions of trainees toward the learning, both prior and post event. They are classified into two types — affective and utility. Affective reactions measure whether trainees like or dislike the training, or are satisfied or dissatisfied with it. Utility reactions measure the perception of the trainees on the usefulness and application of the training to him/her (Alliger et al., 1997).

8) Environment or transfer climate is the work environment that the trainee returns to after the training event. The environment in this study includes utility perceptions and feedback. In terms of feedback, it involves the influence from supervisors and peers in encouraging learners to transfer their learning to practice at work. It also involves the outcomes that the learners receive after trying out what they learn at work (Rouiller & Goldstein, 1993).

9) Opportunity to use is identified as a factor affecting the learning transfer in the ability dimension, based on Holton's evaluation and research model (2005). It means the opportunity for trainees to apply what they learn in the training to their work after the training.

10) Transfer design is the planned approaches and methods used to develop learning in order to enhance the learning transfer process in order to achieve training goals and transfer outcomes (Lau & McLean, 2013).

11) Thai Banks in this study are comprised of 14 Thai commercial banks under the surveillance of the Bank of Thailand.

12) The conceptual model refers to the model emerging from the revised HRD evaluation and research model (Holton, 2005) after exploratory factor analysis has been performed.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this research is to create a conceptual model for learning transfer in the Thai banking sector using Holton's revised HRD evaluation and research model (2005) as a framework. As the learning transfer is a complex system, involving a large number of factors, these factors need to be reviewed in order to understand their relationships and the extent to which each factor influences others. This chapter reviews the research literature in three main areas: 1) learning transfer evolution and the major factors affecting learning transfer; 2) an update on Holton's HRD evaluation research and measurement model, which is the conceptual framework for LTSI; and 3) an update on the learning transfer system inventory, a set of scales to assess learning transfer.

2.1 Evolution of Learning Transfer and the Major Factors Affecting Learning Transfer

Despite a large number of researches conducted in the area of learning transfer over several decades, the transfer problem still remains and is pervasive among organizations globally (Salas & Cannon-Bowers, 2001; Yamnill & McLean, 2005; Tharenou, Saks, & Moore, 2007; Aguinis & Kraiger, 2009; Saks & Burke, 2012). Based on many research articles, learning transfer can be seen as complex and involves multiple factors and influences (Noe, 1986; Baldwin & Ford, 1988; Rouiller & Goldstein, 1993; Ford & Weissbein, 1997; Holton, Bates, & Leimbach, 1997; Holton, Bates, Ruona, & Leimbach, 1998; Holton, Bates, & Ruona, 2000, as cited in Yamnill & McLean, 2005). The factors affecting learning transfer have yet to be generally agreed on among researchers (Baldwin & Ford, 1988; Noe, 2000; Blume et al., 2010; Grossman & Salas, 2011).

There are a few significant learning transfer models repeatedly cited in the literature, namely Baldwin and Ford's (1988) model of transfer process, and Holton's (1996) transfer of training model. Baldwin and Ford (1988) identified learning transfer research gaps and established a framework that learning transfer is a process consisting of training inputs, training outcomes, and conditions of transfer. The training inputs are derived from trainees' characteristics, the learning design, and the work environment, while the training outcomes are learning and retention of what has been learned. The trainees' characteristics consist of ability, personality, and motivation, while the learning design consists of principles of learning, and sequencing and training content. The conditions of transfer include both the generalization of material learned to the job setting and the maintenance of the learned material over a period of time on the job.

In terms of influence, training inputs and training outcomes have been hypothesized to have a direct and indirect effect on the conditions of transfer, whereby the trainee's characteristics, the learning design, and the work environment lead to learning and retention, which then indirectly lead to generalization and maintenance. Trainees' characteristics and the work environment also lead directly to generalization and maintenance, while opportunity to use has been hypothesized to be the factors of work environment.

The four-level evaluation model (Kirkpatrick, 1976, p. 5), popularly cited then as "the standard in the field," was "flawed as an evaluation model." Holton (1996) viewed that Kirkpatrick's four-level evaluation was a form of taxonomy rather than a model, and furthermore, there were shortcomings in the empirical research testing it. Holton (1996, p. 8) also stated that the learning transfer was "a complex system of influences on training outcomes that must be measured if training is to be accurately evaluated".

Influenced by two studies, those of Noe and Schmitt (1986) and Mathieu, Tannenbaum, and Salas (1992), Holton (1996) believed that an integrative evaluation model of learning transfer could be achieved. Holton (1996) proposed an HRD evaluation and research model, a multivariate conceptual evaluation model that consisted of five layers and sixteen factors. Each layer, except for the first one, consisted of three factors. The first layer was comprised of secondary influences

consisting of four factors: personal characteristics, intervention readiness, job attitudes, and intervention fulfillment. The second layer, motivation elements, consisted of motivation to learn, motivation to transfer, and expected utility/ROI. The third layer, environmental elements, consisted of reactions, transfer climate, and external events. The fourth layer, outcomes, consisted of learning, individual performance, and organizational results; and the fifth layer, ability/enabling elements, consisted of ability, transfer design, and linkage to organizational goals. Each factor affects others, as shown by the arrows in figure 2.1 below; the thick arrows represent primary relationships, whereas the lighter arrows depict secondary relationships.

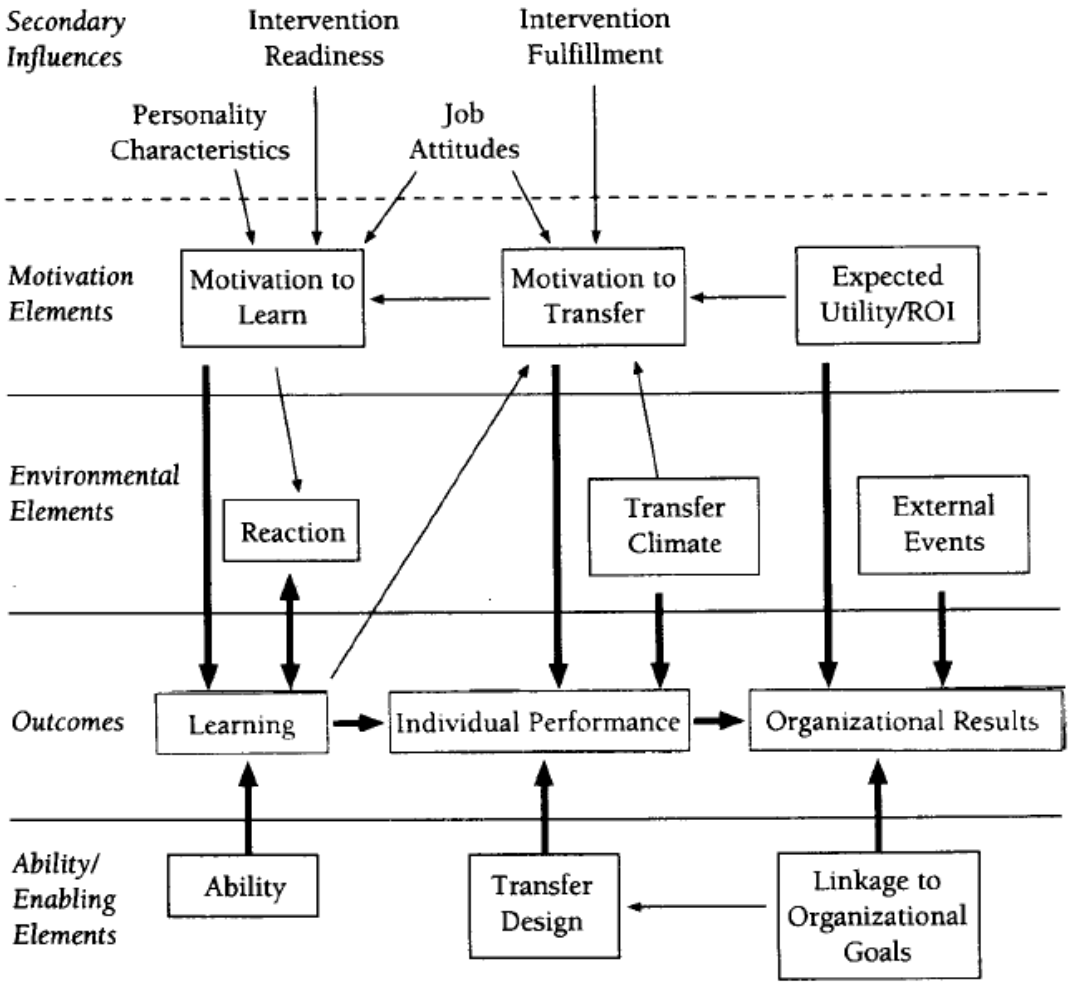

Figure 2.1 Holton's HRD Evaluation and Research Model (1996)

Rouiller and Goldstein (1993) designed a questionnaire of the transfer climate and tested its content validity and its predictive validity regarding transfer. Second, Holton et al. (1997) brought some modifications to this instrument, assessed its dimensionality, found a 9-factor structure, and called it the Learning Transfer Questionnaire (LTQ). Third, on the basis of an empirical and theoretical literature review, Holton et al. (2000) further developed this instrument, from which emerged the LTSI. These authors modified the item composition of some scales, added seven new constructs to the questionnaire, and divided the items into general versus specific scales. In 2000 Holton, Bates, and Ruona developed version 2 of the learning transfer system inventory instrument in order to validate a generalizable set of transfer system scales of 112 items from sixteen constructs. The study covered 1,616 samples from diverse organizations and training programs. In terms of reliability, three out of sixteen constructs were found to be lower than 0.70; namely, positive personal outcomes at 0.69, personal capacity for transfer at 0.68, and supervisor sanctions at 0.63. Furthermore, it was reported that "a number of items did not load on any factor, others loaded weakly, and some loaded on different factors than hypothesized" (Holton et al., 2000, p. 347). Based on the findings, the items were then lowered to sixty-eight in the final instrument. An additional 21 items were added to create version 3 of the LTSI, an 89-item instrument. Bates, Holton, and Hatala (2012) validated and refined the LTSI version 4 scale items by deleting the cross-loaded and inter-item correlations, causing the number of scale items to be reduced from 68 to 48 items, confirming the factorial structure of 11 factors in the specific training domain and 5 factors in the general training domain.

According to Kirwan and Birchall (2006), Holton's learning transfer system inventory seems to be the most completed model available, with more fully different factors affecting learning transfer than others. Yamnill and McLean (2005) view the learning transfer system inventory as a well-validated and reasonably comprehensive set of scales to measure factors in a transfer system are a key element in improving the organizational transfer system.

However, Noe (2000, pp. 361-362) reacted to Holton et al.'s (2000) Development of a Generalized Learning transfer system inventory with two critical questions: "How were constructs chosen or eliminated from consideration?" and "whether the conceptual

model omits any critical variables?". Noe suggested the LTSI should consider dispositional factors, such as the big five personality characteristics, job involvement, and job attitudes to have affected motivation, training outcomes and performance (Noe & Schmitt, 1986; Barrick & Mount, 1991; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991; Mathieu, Martineau, & Tannenbaum, 1993; Noe & Wilk, 1993; Colquitt & Simmering, 1998). Noe (2000, p. 362) also stated that in developing a model one should not "omit any critical variances," nor "sacrifice parsimony for a more complete model".

In response to Noe (2000), Naquin and Holton (2002) tested a model of the dispositional effects—namely personality, affectivity, and work commitment—on the motivation to improve work through training using structural equation modeling. The authors noted that the disposition traits of conscientiousness, positive affectivity, agreeableness, and extraversion were antecedents of motivation to improve work through learning (MTIWL). Extraversion and positive affectivity were seen to be positively and directly related to MTIWL, while conscientiousness and agreeableness were seen to be indirectly related through work commitment.

Based on Naquin and Holton's work (2002, p. 368), 57 percent of the variance in MTIWL was explained by positive affectivity, work commitment, and extraversion, whereas 53 percent of the variance in the mediator construct and work commitment was explained by conscientiousness and agreeableness.

Further, Yamkovenko and Holton (2010) explored the relationships among the five factor model of personality, goal orientation, self-efficacy, and intent to transfer using SEM. It was reported that 48 percent of the intent to transfer could be explained by conscientiousness, motivation to transfer, and learner readiness, with conscientiousness being the only significant variable. On the other hand, self-efficacy was found to be a strong antecedent to learning goal orientation. However, learning goal orientation was not supported as having an influence on the intent to transfer. Yamkovenko and Holton (2010, p. 381) concluded in their research that "dispositions may not be as important in the transfer system as other constructs like situational, motivational, and ability variables".

In 2007, Holton et al. (2007) enhanced the LTSI's usefulness by examining the convergent and divergent validity of the instrument. The authors conducted a

correlation analysis to check the convergent and divergent validity of fourteen of the sixteen LTSI scales with twenty-eight comparison measures and reported that "the LTSI scales have little overlap with other related measures" (Holton et al., 2007, p. 413). The authors also confirmed that "the LTSI instrument provides the most comprehensive and most extensively validated instrument to assess dimensions of the learning transfer climate that has been developed to date" (Holton et al., 2007, p. 414).

Based on Yamnill and McLean's (2005) study, after having conducted the LTSI validation with Thai samples using LTSI version 2 and replicating the process conducted in Holton, Bates, and Ruona's (2000) study, they found that although the sixteen factors corresponded with the original LTSI results conducted by Holton et al., five of the eleven factors in the specific scales and two of five factors in the general scales were found to have a reliability lower than the minimum of at least 0.7. Thus, they added 21 items to the scales with the purpose of improving their reliability. Nevertheless, there were still four of eleven factors in the specific scales with a reliability lower than 0.7; namely, motivation to transfer, personal capacity to transfer, learner readiness, and learning design. On the general scales, the reliability of one of the five factors, which was performance outcome expectations, remained lower than 0.7. The results of Yamnill and McLean's research (2005) revealed the low reliability of several question items. They were uncertain if the concepts were unreliable or if the items were ambiguous due to the back translation problem. Furthermore, there were disproportionate numbers of question items across the factors which might result in the low reliability; thus, they proposed that the instrument be revised.

In addition to Yamnill and McLean's 2005 LTSI study, Thammarat Jungsiriwattana (2006) studied the factors affecting learning transfer in the airline industry in Thailand using the LTSI diagnostic tool and found that the Thai samples did not see that supervisor sanctions affected learning transfer. Instead, they strongly agreed that the learning design did have an impact on the transfer. Pasachon Bumroongtham (2008) also studied the same subject at a university setting and found that the Thai samples did not agree that supervisor sanctions, personal outcomes, both positive and negative, had an impact on the learning transfer. The author found that motivation to transfer, self-efficacy, and learning design affected the learning transfer. Mullika Naowaruttanavanit's study (2002, pp. 104-105) expanded Pasachon Bumroongtham's

(2008) in terms of the relationships among efficacy, motivation, and perception of outcomes. The author tested the transfer of the training process of 5S training with 623 Thai employees in five organizations and found that "collective efficacy was found to be moderately and positively related to individual motivation to transfer the training to the job". However, "individual motivation to transfer was found to be weakly and positively related to the extent to which employees actually transferred the learned behaviors to the job and moderately related to the perception of outcome". Having studied the work environment factors affecting the transfer of training in the Thai telecommunications industry, Salayaporn Boonkiat (2004) stated that supervisor support, organizational support, and peer support were the main factors affecting learning transfer, while lack of understanding and lack of cooperation from the supervisor were the factors inhibiting it. Interestingly, Warisara Kasemsri (2005) discovered that family-related factors, for example, motivated for family well-being, stability and security, were the top factor affecting learning transfer among 291 operational level employees in a major food product organization in Thailand. These results differ from those conducted on western countries, whereby locus of control and self-efficacy as the factors affecting learning transfer and rewards were found to be the factors least affecting it (Warisara Kasemsri, 2005).

In conclusion, as is evident from the literature review on learning transfer, the LTSI model (Holton et al., 2000) does not seem to fit the Thai cultural context. Therefore, in this research, Holton's revised HRD evaluation and research model (2005), which has never been empirically tested, will be used as the conceptual model for an investigation of learning transfer in the Thai banking sector. In the next section, the major factors affecting this learning transfer are reviewed.

2.1.1 Research on Learning

Workplace learning has been viewed in a number of research articles as encouraged by organizations (Marsick & Watkins, 2001), leading to the organization's competitive edge (Salas & Cannon-Bowers, 2001; Kim & McLean, 2013). Learning can be classified according to three various forms: formal learning, informal learning, and incidental learning (Watkins & Marsick, 1992; Rowden, 2002, as cited in Matsuo & Nakahara, 2013). Each form is different in terms of its objectives and characteristics.

Formal learning, such as training, is defined as discrete, planned used to instruct people on the performance, while informal learning is comprised of unstructured activities, taking place regardless of the goal. Similarly, incidental learning is an unintended byproduct of other activities (Matsuo & Nakahara, 2013). Unlike formal learning, it does not emphasize so much learning goals, planned events, learning intention, or application transfer as formal learning. Instead, it shares the following characteristics: 1) integration with daily routines; 2) triggered by an internal or external party; 3) not highly conscious; 4) happens by chance; 5) inductive process; 6) linked to the learning of others (Marsick & Watkins, 2001).

In this study, formal learning or training is focused on. It is where organizations invest in human capital through development programs with the expectation of gaining enhanced organizational performance and increased productivity (Salas & Cannon-Bowers, 2001; Kraiger, 2003; Tharenou, Saks, & Moore, 2007). Formal learning has been defined as a systematic approach or method to enhance the individual's, team's, organization's, or the nation's human capital with the objective of changing behaviors, increasing productivity, improving performance, and enhancing a nation's economic growth (Goldstein & Ford, 2002; Tan et al., 2003; Aguinis & Kraiger, 2009). The following are examples illustrating the kinds of formal learning that deliver performance, which is the focus of this research.

Dvir et al. (2002, as cited in Aguinis & Kraiger, 2009) conducted a field experiment on the transformational leadership training of group leaders and found that the training improved their subordinates' motivation, morality, and empowerment. Further, Warr and Bunce (1995) found that learning scores were strongly correlated with changes in rated job performance in a 7-month period open learning program for 106 junior managers. Additionally, Ellis and Barkhuizen (2005) reported that trained teams performed tasks better than untrained teams as a result of their skills being developed in systematic planning, coordination, and communication; and Aguinis and Kraiger (2009) reported that the employee turnover rate at a large manufacturing organization declined when the company invested in developing their employees by paying for their tuition fees. Noe and Schmitt (1986) tested a model of the influence of trainees' attitudes on training effectiveness and found that learning (formal training) was significantly linked to performance but was not related to behavioral change.

Despite the fact that these results could be demonstrated, less than 5 percent of the organizations investing in training their employees measured the return on training (Swanson & Holton, 2001) and "continue to struggle with making trainee knowledge and skills (learned through training) translate to performance improvement on the job" (Hutchins et al., 2013, p. 251).

2.1.2 Research on Personality Traits

Personality traits refer to an individual's confidence in his or her ability to perform the trained task (Belbin & Belbin, 1972; Salas & Cannon-Bowers, 2001, as cited in Sookhai & Budworth, 2010), or as Noe (1986, p. 737) defined it as "a function of three factors: ability, motivation and perceptions of the work environment". In the literature, personality traits have been found to impact learning, and the learning transfer (Baldwin & Ford, 1988; Barrick & Mount, 1991; Warr & Bunce, 1995; Noe, 2000; Burke & Hutchins, 2007). In the following section, the personality traits affecting learning transfer are reviewed.

Big five personality traits. It has been generally cited in many studies that personality traits affect learning transfer, including the big five personality dimensions (Barrick & Mount, 1991; Warr & Bunce, 1995), self-efficacy (Gist et al., 1989; Bandura, 1991a; Warr & Bunce, 1995; Axtell et al., 1997; Stevens & Gist, 1997; Warr et al., 1999; Salas & Cannon-Bowers, 2001; Chiaburu & Marinova, 2005; Sookhai & Budworth, 2010; Simosi, 2012), pre-training motivation (Burke & Hutchins, 2007), ability or skills, motivation, and personality factors (Baldwin & Ford, 1988), locus of control (Baumgartel et al., 1984; Kren, 1992), goal orientation (Fisher & Ford, 1988; Chiaburu & Mironova, 2005), perceived utility and expectancies (Hicks & Klimoski, 1987; Magjuka et al., 1994; Burke & Hutchins, 2007), job involvement and career planning (Noe & Schmitt, 1986; Noe, 2000; Burke & Hutchins, 2007), organization commitment (Mathieu & Zajac, 1990; Burke & Hutchins, 2007), cognitive, psychomotor, and physical ability (Hunter, 1986; Fleishman & Mumford, 1989a), and making conscious decisions on how the training will be used and anticipating difficulties and generating strategies for coping (Burke & Baldwin, 1999; Richman-Hirsch, 2001). In the next section, each trainee's characteristic factor, which has been frequently cited in the literature, is discussed.

The “Big five” or the 5-factor personality model has been widely accepted, not only in the field of personality psychology (Digman, 1990, as cited in Barrick & Mount, 1991), but also in the HRD field (Belbin & Belbin, 1972; Barrick & Mount, 1991; Martocchio & Webster, 1992; Webster & Martocchio, 1993; Warr & Bunce, 1995; Martocchio & Judge, 1997; Colquitt et al., 2000; Noe, 2000; Herold et al., 2002; Naquin & Holton, 2002; Holton, 2005) as one of the trainee’s characteristic factors affecting learning and learning transfer. They consist of extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience (Barrick & Mount, 1991). Each is discussed in turn below.

1) Extraversion is defined by Hogan (1986, as cited in Barrick & Mount, 1991) as ambition and sociability. The traits involved are being sociable, gregarious, assertive, talkative, and active. Extraversion has not only been found to be “a significant predictor of training proficiency” (p=.26) (Barrick & Mount, 1991, p. 14), but it also has been seen to have a moderate correlation with the job performance of managers and sales persons (p=.18 and .15 respectively) and has a positive influence on transfer (Herold et al., 2002; Naquin & Holton, 2002).

2) Neuroticism is associated with the state of “being anxious, depressed, angry, embarrassed, emotional, worried, and insecure” (Barrick & Mount, 1991, p.4). Neuroticism has been found in a few studies to be negatively associated with learning scores, and work performance (Belbin & Belbin, 1972; Barrick & Mount, 1991; Martocchio & Webster, 1992; Webster & Martocchio, 1993) has been found to negatively and strongly impact the motivation to learn and post-training self-efficacy (Colquitt, LePine, & Noe, 2000) and training outcomes (Holton, 2005), negatively affects the motivation to transfer learning and transfer outcomes (Machin & Fogarty, 2004), and affects the job performance of professional occupation groups (Barrick & Mount, 1991), as well as being weakly negatively related to knowledge, skill acquisition, and the trainee’s reactions (Colquitt, LePine, & Noe, 2000).

3) Agreeableness is associated with “being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant” (Barrick & Mount, 1991, p. 4). Naquin and Holton (2002) found agreeableness to be a significant predictor of the motivation to improve work through learning.

4) Conscientiousness is associated with conformity, dependability, the will to achieve, working hard, and perseverance (Barrick & Mount, 1991). Despite having received mixed research results for both the positive and moderate influence on the transfer of learning (Barrick & Mount, 1991; Martocchio & Judge, 1997; and Colquitt et al., 2000), this personality factor has been found to impact both learning and learning transfer (Digman & Takemoto-Chock, 1981), and has been seen to be a valid predictor of job performance for all occupational groups—professionals, police, managers, sales persons, and skilled/semi-skilled workers, and also has been seen to be a valid predictor of job and training proficiency (Barrick & Mount, 1991). According to the studies of Holton (2005) and Yamkovenko and Holton (2010), conscientiousness was found to affect the motivation to learn, the intention to transfer learning, and training outcomes. However, a meta-analytic research revealed that conscientiousness is not significantly related to knowledge or skill acquisition (Colquitt, LePine, & Noe, 2000).

5) Openness to experience is associated with "being imaginative, cultured, curious, original, broad-minded, intelligent, and artificially sensitive" (Barrick & Mount, 1991, p. 5), has been found to be correlated with training proficiency and positively correlated with learning transfer (Herold et al., 2002; Naquin & Holton, 2002), and influences the motivation to learn and training outcomes (Holton, 2005). However, Naquin and Holton (2002) did not find openness to experience to be a significant predictor of the motivation to improve work through learning nor work commitment, as opposed to conscientiousness, extraversion, and agreeableness.

Holton (2005) reviewed the literature and identified three of the Big five personality traits to have strong research support—namely conscientiousness, neuroticism, and openness to experience—as having an impact on the motivation to learn and training outcomes. Yamkovenko and Holton (2010) also explored the relationships of the big five personality traits, goal orientation, self-efficacy and intent to transfer using SEM. It was reported that 48 percent of the intent to transfer learning could be explained by conscientiousness, motivation to transfer learning, and learner readiness, with conscientiousness being the only significant variable.

Ability. Cognitive ability is believed to help a person acquire knowledge and skills in training, influencing job knowledge attainment directly (Colquitt, LePine, &

Noe, 2000) as well as impacting the trainee's success greatly (Ree & Earles, 1991, as cited in Holton, 1996). People with high cognitive ability tend to put more effort into and excel in training. Moreover, it is also found to promote the motivation to enhance outcomes (Kanfer & Ackerman, 1989; Fleishman & Mumford, 1989b, as cited in Holton, 1996) and self-efficacy. and is a viable predictor of training performance, but it does not guarantee that people with high_cognitive ability will be successful in job performance (Colquitt, LePine, & Noe, 2000; Salas & Cannon-Bowers, 2001).

Holton (1996, p. 12) viewed that trainees that are homogeneous in terms of job and educational background tend to be of little difference in cognitive ability and thus there is "little detectable influence on training outcomes"; however, general cognitive ability will influence the training outcomes if trainees are heterogeneous in terms of cognitive ability. Consequently, he proposed that "because it is almost impossible to control for ability through random samples in most evaluation studies, it is essential to measure and control for it statistically".

Goal Orientation. Holton (2005) identified goal orientation as one of the personality traits in his revised HRD evaluation and research model. Goal orientation originated from the education literature. For example, Dweck and her colleagues propose that "the goals pursued by individuals create the framework for their interpretation of reactions to events or outcomes" (Dweck et al., 1993, as cited in Button, Mathieu, & Zajac, 1996, p. 26). According to Dweck's motivation theory, goal orientation is a dispositional trait that correlates with ability (Dweck, 1989; Bempechat, London, & Dweck, 1991).

The goals orientation identified are of 2 types: learning goals and performance goals. It is posited that a person is either learning goal oriented or performance goal oriented (Bell & Kozlowski, 2002) and each has an influence on the person's different responses when facing failure or task difficulty (Dweck & Leggett, 1988; Elliott & Dweck, 1988; Dweck, Hong, & Chui, 1993, as cited in Bell & Kozlowski, 2002). A person with a learning goal orientation possesses "a desire to increase [his/her] competency by developing new skills and mastering new situations," whereas a person with performance orientation possesses "a desire to demonstrate [his/her] competence to others and to be positively evaluated by others" (Farr, Hofmann, & Ringenbach, 1993, as cited in Bell & Kozlowski, 2002, p. 4).

Individuals with a learning goal orientation tend to have an adaptive response pattern whereby they persist in the face of failure, use more complex learning strategies, and are in pursuit of difficult and challenging learning materials and tasks. However, the individuals with a performance orientation hold a maladaptive response pattern. In difficult situations, especially when facing failure, they tend to withdraw from tasks, and to become less interested in complex and challenging materials or tasks (Bell & Kozlowski, 2002). Research shows that while learning goal orientation is associated with more positive outcomes, performance goal orientation is associated with equal or negative outcomes (Elliott & Dweck, 1988; Fisher & Ford, 1988; Duda & Nicholls, 1992; Harackiewicz & Elliott, 1993; Elliot & Harackiewicz, 1994; Button, Mathieu, & Zajac, 1996; Greene & Miller, 1996; Phillips & Gully, 1997; Colquitt & Simmering, 1998; Vandewalle et al., 1999, as cited in Bell & Kozlowski, 2002).

Button, Mathieu, and Zajac (1996) developed and validated sixteen-item measures of learning goals and of the performance goal orientation. They stated that both ability and self-esteem were positively correlated with learning goal orientation but negatively correlated with performance orientation. Although the locus of control was positively correlated with the learning and performance goal orientation, its correlations with the learning orientation was much greater than that of the performance orientation. They suggested that in the learning context goal orientation may affect the motivation to learn and the motivation to transfer learning.

In order to further validate the relationships between the learning goal and the performance goal orientation, Bell and Kozlowski (2002, p. 15) found that learning goal orientation was significantly and positively correlated with self-efficacy, and performance and knowledge, while performance goal orientation was seen to be significantly and negatively correlated with task performance. The performance orientation "did not have a significant relationship with self-efficacy or knowledge".

Despite the strong relationship between learning goal orientation and self-efficacy, Bell and Kozlowski (2002, p. 15) found that ability was a significant factor that impacted the self-efficacy of the learning orientation. They viewed that the "learning orientation was positively related to high ability individual's self-efficacy". However, the learning orientation of those of low ability was not related to self-efficacy.

Locus of Control. Noe (1986) viewed locus of control as a personality trait, whereby a person has either an internal or external locus of control. Rotter (1990, p. 489) posited that "internal versus external control refers to the degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable." People with an internal locus of control believe in their ability to control the environment or the situations facing them and view challenges and failure as opportunity to learn. On the other hand, people with an external locus of control view difficult situations as obstacles and tend to give up when facing the challenges or failure.

According to Colquitt, LePine, and Noe (2000), locus of control has a strong relationship with motivation to learn, ability, effort-performance expectancies, career and job attitudes, and is moderately correlated with knowledge acquisition and transfer. It is also a determinant of individual trainability, which is a function of ability, motivation, and the work environment (Noe, 1986). People with a locus of control are likely to act on the feedback they receive regarding their skill strengths and weaknesses (Colquitt, LePine, & Noe, 2000). Rotter (1966) and Andrisani and Nestle (1976) have developed scales to assess locus of control.

Job Involvement. Job involvement is categorized as a personality trait. It is defined as the extent to which a person is involved in his or her job psychologically and values his or her work as a total self-image (Noe, 1986). The person that is highly involved with his/her job is likely to be highly motivated to learn and to improve his/her work skills. Additionally, when combined with appropriate cues in the work environment, the person's behavior tends to be changed in a favorable way and performance is improved. However, high job involvement has not been seen to be significantly related to learning outcomes (Colquitt, LePine, & Noe, 2000). According to Noe and Schmitt (1986), job involvement is significantly related to learning (r=.45) and moderately related to career planning (r=.34). There have been a few studies involving measures for assessing job involvement (Lodahl & Kejner, 1965; Kanungo, 1979; Gorn & Kanungo, 1980).

Organization commitment. Organization commitment is defined as an employee's loyalty and desire to stay with the organization (Tolentino, 2013). Robbins (2001, as cited in Tolentino, 2013, p. 51) stated that it is "a state in which the employee identities with a particular organization and its goals, and wishes to maintain membership in the organization."

A few researchers have classified organization commitment according to three forms based on three different mindsets of the organization's employees; namely, affective commitment, normative commitment, and continuance commitment (Lai, 2001; Cabautan, 2002). Based on those mindsets, Meyers and Allen (2004) developed an organization commitment measurement called the three-component model (TCM). The affective commitment scale (ACS) is based on the employee's desire to remain with the organization; they do so because they want to. The normative commitment scale (NCS) is based on the employee's feeling of an obligation to stay on the job; they stay because they have to. The continuance commitment scale (CCS) is based on value or cost the employee justifies the organization. They stay with the organization because they have limited choices outside it.

In terms of its relationship to job performance, it has been found that a high level of organization commitment correlates with the effort to perform (Meyer & Allen, 2004) and loyalty (Lai, 2001). Tolentino (2013) measured the organization commitment of academic personnel using the TCM and discovered that while the affective commitment scale (desire to stay) significantly and positively correlated with job performance, the normative commitment scale (obliged to stay) weakly and negatively correlated with job performance. However, the continuance commitment scale (CCS) was seen to be related to job performance almost not at all.

Performance Self-efficacy. Self-efficacy has also been frequently cited in the literature related to learning transfer, as it is posited as an antecedent leading to transfer and performance improvement (Gist, 1989; Latham & Frayne, 1989; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991; Mathieu, Tannenbaum, & Salas, 1992; Mathieu, Martineau, & Tannenbaum, 1993; Saks, 1995; Harrison, Rainer, Hochwarter, & Thompson, 1997; Stevens & Gist, 1997; Ford, Smith, Weissbein, Gully, & Salas, 1998; Stajkovic & Luthans, 1998; Colquitt, LePine, & Noe, 2000; Salas & Cannon-Bowers, 2001; Holladay & Quinones, 2003; Gaudine & Saks, 2004; Chiaburu &

Marinova, 2005; Chiaburu & Lindsay 2008; Sookhai & Budworth, 2010; Grossman & Salas, 2011; Simosi, 2012; Hutchins et al., 2013).

Self-efficacy stems from Bandura's social cognitive theory (Bandura, 1991b, p. 257), according to which a person's behavior is regulated by his or her beliefs: "People's beliefs in their efficacy influence the choices they make, their aspirations, how much effort they mobilize in a given endeavor, how long they persevere in the face of difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding, the amount of stress they experience in coping with taxing environmental demands, and their vulnerability to depression".

Chiaburu and Lindsay (2008) discussed the idea that whether a person learns and transfers the learning to the job depends upon his or her cognition, two major elements of which are self-efficacy and instrumentality. Several researches and meta-analyses support a positive relationship between self-efficacy and outcomes leading to performance (Stajkovic & Luthans, 1998), learning goal orientation (Yamkovenko & Holton, 2010), learning (Colquitt, LePine, & Noe, 2000), pre-training self-efficacy and training mastery (Mathieu, Martineau, & Tannenbaum, 1993; Harrison, Rainer, Hochwarter & Thompson, 1997; Holladay & Quinones, 2003), post-training self-efficacy (Salas & Cannon-Bowers, 2001), and positive relationships among self-efficacy, intention to transfer, and transfer generalization and maintenance (Gist, 1989; Latham & Frayne, 1989; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991; Mathieu, Tannenbaum, & Salas, 1992; Saks, 1995; Stevens & Gist, 1997; Ford, Smith, Weissbein, Gully, & Salas, 1998; Gaudine & Saks, 2004; Chiaburu & Marinova, 2005).

In addition, Salas and Cannon-Bowers (2001) performed a meta-analysis of training research literature and found that self-efficacy mediated job satisfaction and organization commitment, and it was strongly correlated with the motivation to learn, was moderately related with knowledge and skill acquisition, and enhanced learning outcomes.

Chiaburu and Lindsay (2008) asserted that for training to be transferred, it is necessary for a person to possess "can do" and "will do" attitudes. "Can do" is related to training self-efficacy, which is a predictor of the motivation to learn, while "will do" is related to instrumentality, which is a predictor of the motivation to transfer learning. Simosi (2012) studied the relationships of new hires' self-efficacy, learning transfer,

and achievement culture orientation in a service organization and found that self-efficacy correlated with learning transfer (r = .29).

Nevertheless, Simosi (2012) added that for training to be transferred both self-efficacy and an achievement-driven organizational culture need to co-exist. This aligns with the research conducted by Gaudine and Saks (2004) and Vancouver and Kendall (2006), as cited in Sookhai and Budworth (2010). Grossman and Salas (2011, p. 115) highlighted differences in self-efficacy against other trainee characteristics, indicating that "unlike other trainee characteristics, self-efficacy is susceptible to interventions", and suggesting that self-efficacy can be influenced by transfer design and transfer climate.

In terms of Thai samples, Pasachon Bumroongtham (2008) studied learning transfer in a university setting and found that self-efficacy affected learning transfer. Mullika Naowaruttanavanit (2002, p. 104-105) tested the transfer of the training process of 5S [1] training with 623 Thai employees in five organizations and found that "collective efficacy was found to be moderately and positively related to individual motivation to transfer the training to the job" as well as to actual transferred behaviors to the job. However, "individual motivation to transfer was found to be weakly and positively related to the extent to which employees actually transferred the learned behaviors to the job and moderately related to the perception of outcome".

Learner Readiness. Learner readiness is posited to be related to motivation to learn (Hicks & Klimoski, 1987; Baldwin, Magjuka, & Loher, 1991, as cited in Holton,

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[1] 5S is related to the workplace organization and forms a solid foundation upon which many organizations base their drive for continuous improvement. It is equally applicable and successful in all sectors helping to achieve high impact results.

The 5 steps are as follows:

1) Sort: Sort out & separate that which is needed & not needed in the area

2) Straighten: Arrange items that are needed so that they are ready and easy to use. Clearly identify locations for all items so that anyone can find them and return them once the task is completed.

3) Shine: Clean the workplace and equipment on a regular basis in order to maintain standards and to identify defects

4) Standardise: Revisit the first three of the 5S on a frequent basis and confirm the condition of the Gemba using standard procedures

5) Sustain: Keep to the rules to maintain the standards and continue to improve them every day

1996). Holton (1996) viewed that readiness included variables such as the depth of the trainee's involvement in needs assessment and the planning phase, as well as the purpose of the training being clarified to the trainees. Researchers have found that trainees that have the freedom to choose which training to attend and have an opportunity to participate in the training from the needs assessment phase are likely to have a high motivation to learn. On the other hand, when the trainees are forced to attend the training and do not feel that the training provides any value, they tend to be less motivated and less likely to learn (Hicks & Klimoski, 1987; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991, as cited in Holton, 1996). Ford and Weissbein (1997) have suggested that there are a large number of personality traits and that only the relevant characteristics of trainees need to be selectively studied.

In conclusion, whether or not a trainee learns in the training and transfers what he/she learns to the work setting is significantly influenced by his/her characteristics. Based on the literature above, organizations should assess the trainees' personalities prior to the training in order to ensure training effectiveness and learning transfer (Colquitt, LePine, & Noe, 2000).

2.1.3 Research on Motivation to Improve Work Through Learning (MTIWL)

Training motivation is defined as "the intensity and persistence of efforts that trainees apply in learning-oriented improvement activities, before, during and after training" (Tannenbaum & Yukl, 1992, as cited in Burke & Hutchins, 2007, p. 267). A number of researchers have also indicated that pre-training motivation and learning transfer are correlated (Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Quinones, 1995, as cited in Burke & Hutchins, 2007).

Whether or not the training participants learn the content and change their behavior to improve performance relies heavily on their trainability, which was a function of three factors: ability, motivation, and perceptions of work environment (Noe, 1986). The author conceptualized a model of motivational influences on training effectiveness, where two types of motivation were classified—motivation to learn and motivation to transfer.

Motivation to learn is directly impacted by reactions to skill assessment feedback, the trainee's expectancies/self-efficacy, career/job attitudes, and environmental favorability, leading to mastering the training content. Motivation to learn is defined as "a specific desire of the trainee to learn the content of the training program" (Noe, 1986, p. 743). Motivation to transfer is influenced by environmental favorability, namely social and task, which leads to behavioral change and performance. Motivation to transfer is defined as "the trainees' desire to use the knowledge and skills mastered in the training program on the job".

In terms of environment favorability, variables such as the trainees' perceived opportunities to use, and reinforcement and feedback from supervisors and peers, are identified. In summary, the motivation to learn and the motivation to transfer learning are hypothesized to be mediators among the trainee's characteristics, the trainee's reactions, the transfer climate, and the training and learning transfer outcomes.

Naquin and Holton (2002, p. 356) have argued that "motivation to learn or motivation to train is inadequate to encompass the requirements for improved employee productivity". These authors viewed that the objective of organizational training is productivity from performance improvement. Thus, the motivation to improve work through learning, which is a function of the motivation to train and the motivation to transfer combined, leading to improved productivity, was proposed. MTIWL has been defined as "the motivation to improve work outcomes by engaging in training or learning activities and using what is learned to perform job functions differently" (Naquin & Holton, 2002, p. 359). Naquin and Holton (2002, p. 366) validated the proposed model and measures with a confirmatory factor analysis and reported that among other relevant variables in their study, MTIWL predicted learning transfer the most. It was stated in their article that "MTIWL explained 40 per cent of the variance in attitudes toward training, 58 per cent of motivation to train, 90 per cent of motivation to transfer and 47 per cent of performance outcome expectations."

Research conducted with Thai samples has revealed mixed results (Warisara Kasemsri, 2005; Pasachon Bumroongtham, 2008). Pasachon Bumroongtham (2008) studied learning transfer in a Thai university setting and found that the motivation to transfer affecting the learning transfer. However, Warisara Kasemsri (2005) reported that family-related factors, for example the focus on the family's well-being, stability,

and security, were the top motivating factors affecting learning transfer. These results differ from those performed in western countries, where the locus of control and rewards emerged as the factors affecting learning transfer.

In summary, the motivation to improve one's work through learning, which is a variable combining motivation to learn and motivation to transfer, is used in this research as a mediator of the trainee's characteristics, and the learning design.

2.1.4 Research on the Trainee's Reactions

Past research articles with regards to the trainee's reactions have reported mixed results. One school of thought indicates that the trainee's reactions are neither linked to training outcomes nor to learning transfer (Noe & Schmitt, 1986; Holton, 1996; Bates, 2004). On the other hand, another school of thought found that the trainee's reactions did impact training and learning transfer outcomes (Baumgartel, Reynolds, & Pathan, 1984; Alliger et al., 1997; Axtell et al., 1997; Morgan & Casper, 2000; Lim & Morris, 2006).

The trainee's reactions are one of the four levels of the evaluation model (Kirkpatrick, 1996) that has been world-widely adopted by organizations for training evaluation. However, the concept has been opposed by some researchers.

According to Bates (2004, p. 342), Kirkpatrick's model, despite it being the most popular approach to training evaluation, has several limitations in terms of the risks associated with the model and its assumptions. These risks inhibit stakeholders from understanding the actual factors affecting learning transfer as well as "the ability of the training evaluators to deliver benefits and further interests of the organizations". The model oversimplifies the learning transfer system by ignoring individuals and contextual influences (Bates, 2004).

Furthermore, based on Noe and Schmitt's (1986) research, the trainee's reactions or the trainee's satisfaction with the training was not seen to be related to learning, and learning was not seen to be related to behavioral change. Blume et al. (2010) stated that even if the participants like the training, the crucial thing was whether it helped to transform the trainees' behavior on the job. Despite those results, reaction measures are still being popularly used in organizations. Based on a survey conducted by ASTD in 2001, "77 per cent of the organizations surveyed collected learner reaction

information and 38 per cent measured learning, while only 14 per cent evaluated behavior change and even fewer (7 per cent) measured results from training" (VanBuren, 2001, as cited in Ruona et al., 2002, p. 219).

In Thailand, recent research has shown that more than 80-90% of the organizations studied employing Kirkpatrick's level 1 and 2 (reactions and learning) to evaluate training programs (Pasachon Bumroongtham, 2008), despite the fact that Yamnill and McLean (2005) validated the learning transfer system inventory in Thailand and encouraged Thai practitioners to use it as a learning transfer diagnostic tool.

Utility Perceptions. A few recent literature articles have demonstrated that the trainee's reactions are correlated with learning and the learning transfer (Alliger et al., 1997; Morgan & Casper, 2000). Alliger et al. (1997) found that reactions are moderately correlated with learning and learning transfer when affective reactions and utility reactions are differentiated. Morgan and Casper (2000) studied the participants' reactions to training and suggested that affective and utility reactions were multidimensional.

Affective reactions were described by Alliger et al. (1997, p. 303) as "the extent to which a participant 'liked' or was satisfied with different components of the training, whereas utility reactions were defined as "the extent to which the participants can apply the content to their job". They performed a meta-analysis of the relations among training criteria in 34 studies and found that while "affective and utility reactions were strongly correlated to each other (0.34)" (Alliger et al., 1997, p. 351), the utility reactions moderately correlated with both immediate learning (0.26) and transfer (0.18), while the combined affective and utility reactions were correlated only with learning transfer (0.21).

The utility reactions, in particular, have received strong support in the literature as having a positive influence on transfer (Baumgartel, Reynolds, & Pathan, 1984; Alliger et al., 1997; Axtell et al., 1997; Lim & Morris, 2006). Blume et al. (2010, p. 18) noted that utility reactions have a direct correlation of 0.17 with learning transfer, while "both affective reactions and reactions [have] small relationships".

Morgan and Casper (2000, pp. 313-314) studied participant reactions to training and the results showed that the utility factor strongly related to satisfaction with

instructor (r = 0.73). The authors viewed that the trainee reactions were "useful criteria to examine in evaluation of training programs" and could be a potential source to contribute as part of comprehensive training effectiveness evaluation. The authors also recommended that further research be performed and that the participant's reactions be included in training effectiveness models so as to enhance them.

In response to Morgan and Casper (2000), Holton (2005, p. 42) admitted that according to recent research results, utility reactions "may have some incremental validity in predicting learning or performance outcomes" and therefore he included utility perception in his revised HRD evaluation and research model.

Ruona, Leimbach, Holton, and Bates (2002, pp. 224-225) studied the relationship between utility reactions and predictors of learning transfer and detected that the utility reactions had "the strongest correlations" with the "motivation and ability factors," which included transfer design (0.619), motivation to transfer (0.554), transfer effort (0.48), and perceived content validity (0.456). The utility reactions were also noted to have "a small, but significant impact on the ability to predict motivation to transfer."

Following Morgan and Casper's (2000) study, a few research articles have supported the linkage among affective reactions, training and learning transfer outcomes. Tan, Hall, and Boyce (2003) for example studied the post-training reactions of 283 automotive technicians and posited that both affective and utility reactions had correlations with learning and learning transfer. The affective reactions, particularly negative evaluations, had a strong relation to post-learning (0.62), while the utility or cognitive reactions had a modest correlation with learning (0.28) and learning transfer (0.21).

Lieberman and Hoffmann (2008, p. 82) tested a model of transfer motivation and learning transfer with 213 German bank employees and found that when the trainees were satisfied with the training program, they tended to pay attention to the learning. The authors noted that "reactions seem to play an important role in motivating the participants to transfer the learned behavior to practice." According to the study, the affective reactions had a total effect of 0.715 on transfer motivation and 0.545 on learning transfer.

Mathieu, Tannenbaum, and Salas (1992, p. 302) reported that "reactions to training played an important indirect role in both learning and post-training

performance." Furthermore, the authors reported that the trainee's reactions were found "to moderate the relationship between motivation and learning and to mediate the relationship between motivation and post-training performance."

In conclusion, Morgan and Casper (2000) raised the significance of trainee reactions study in three folds: 1) learning design and delivery could be improved through the voice of the trainees to yield better results; 2) by asking about the trainee reactions, HRD practitioners could engage and gain the trainee's insights—the trainee reactions could serve a "customer relations" function; and 3) By identifying the trainee reactions as a potential predictor of training effectiveness—measures of learning, on-the-job behavior or performance. In summary, with the support of the literature mentioned above, utility reactions and behavioral intentions are studied as the factors affecting the motivation to improve work through learning in this study.

2.1.5 Research on the Transfer Climate

Transfer climate has frequently been cited as one of the most critical factors affecting the motivation to transfer learning and training transfer (Huczynski & Lewis, 1980; Goldstein, 1986; Noe, 1986; Baldwin & Ford, 1988; Baldwin et al., 1991; Tziner, Haccoun, & Kadish, 1991; Tannenbaum & Yukl, 1992; Rouiller & Goldstein, 1993; Tracey, Tannenbaum, & Kavanaugh, 1995; Xiao, 1996; Holton et al., 1997; Holton et al., 2003; Velada & Caetano, 2007; Scaduto, Lindsay, & Chiaburu, 2008; Blume et al., 2010; Grossman & Salas, 2011).

The transfer climate is generally defined as members' perception of the "salient characteristics of the organizational context" (Schneider, 1990, as cited in Tracey, Tannenbaum, & Kavanaugh, 1995, p. 240) based on "the interaction between observable, objective elements of the organizational setting and the perceptual processes of organizational members" (Hellreigel & Slocum, 1974; James & Jones, 1974; Schneider, 1983a, 1983b, as cited in Holton et al., 1997, p. 240).

Rouiller and Goldstein (1993, p. 379) indicated that the organizational transfer climate is comprised of "the practices and procedures used in an organization that connote or signal to people what are important". Holton, Bates, and Ruona (2000, p. 335) defined it as "a mediating variable in the relationship between the organizational context and an individual's job attitudes and work behavior". Lau and McLean (2013,

p. 4) defined the work environment as the "working conditions that influence employees' work, such as supportive supervisors, peers, availability of mentors and a continuous learning culture". In other words, it is a shared perceived value among the organizational members of the patterned characteristics of the organizational context (Tracey, Tannenbaum, & Kavanaugh, 1995).

The transfer climate can either inhibit (ridiculed by peers, lack of time and resources) or facilitate the learning transfer (through rewards, job aids) (Mathieu, Tannenbaum, & Salas, 1992; Tannenbaum & Yukl, 1992; Kirwan & Birchall, 2006). Baldwin et al. (1991) stated that trainees are likely to transfer their learning when they receive three signals from organizations: a) relevant information before the training program: b) that they will be held accountable for the learning; and c) that training is mandatory.

The transfer climate has been classified similarly into three elements: supervisor and co-workers, reinforcement and feedback, and organizational constraints (Noe & Schmitt, 1986; Brinkerhoff & Montesino, 1995; Blume et al., 2010). Montesino (2002) added the transfer climate time element (before, during, and after training) in order to facilitate the learning transfer.

In order to enhance the learning transfer, the organization's climate, particularly supervisor support (Gumuseli & Ergin, 2002; Cromwell & Kolb, 2004) and peer support (Chiaburu & Marinova, 2005), must be conducive to facilitate it (Kirwan & Birchall, 2006). Blume et al. (2010, p. 28) viewed that "transfer climate had the highest relative relationship with transfer, followed closely by support". Supervisor support, as compared to peer support, was found to have a stronger correlation with learning transfer (Holton et al., 2003).

In the realm of transfer climate research, it has been generally recognized that Baldwin and Ford's (1988) environmental characteristics, Rouiller and Goldstein's (1993) organizational transfer climate, and Holton et al.'s (1997) toward construct validation of a transfer climate instruments have dominated the learning transfer literature, as discussed below.

Baldwin and Ford (1988) formulated a model of the transfer process, following Goldstein's (1986) study of environmental characteristics, which included the work environment as one of the constructs leading directly to learning and retention, and the generalization and maintenance of the knowledge and skills learned in training. The

authors found that the work environment could either facilitate or impede the transfer of learning and identified two factors affecting the work environment: supervisor support and opportunity to use.

The role of the supervisor has been viewed as a key work-environment variable, who sets examples (Huczynski & Lewis, 1980; Sims & Manz, 1982) and goals (Wexley & Baldwin, 1986), and provides reinforcement (Huczynski & Lewis, 1980; Baumgartel et al., 1984) and encouragement in terms of intrinsic and extrinsic motivation (Baldwin & Ford, 1988).

Rouiller and Goldstein (1993) assessed the relationship between organizational transfer climate and positive transfer of training. The authors hypothesized that learning (in training), organizational transfer climate, and unit performance leads to learning transfer behavior, which then leads to job performance. Having applied Luthans and Kreiter's (1985) behavior modification model, they developed transfer climate items classified into two categories: situational cues and consequences. Situational cues consisted of goal cues, social cues, task cues, and self-control cues, whereas consequences consisted of positive feedback, negative feedback, punishment, and no feedback. The authors stated that "these differences in climate contribute to whether trainees transfer the behaviors they have learned in training onto the job" (Rouiller & Goldstein, 1993, p. 388).

In their study, it was reported that "the organizational transfer climate (as measured by situational cues and consequences) is related to transfer of training" (Rouiller & Goldstein, 1993, p. 386). In addition, learning (in training) was significantly correlated to transferred behavior (.28), though not correlated with the job performance rating, while the transferred behavior was strongly correlated with the job performance rating (.52). In terms of cues, the authors performed a multiple regression analysis and discovered that the situational cues measure accounted for 36 percent of the variance, while the consequence cues accounted for 30 percent of the variance in predicting transfer.

Holton et al. (1997) validated Rouiller and Goldstein's (1993) hypothesized construct, using exploratory common factor analysis, because the authors indicated that Rouiller and Goldstein (1993) were "unable to validate the construct structure of the scales" (Holton et al., 1997, p. 98), and found a different factor structure. The authors

identified a nine-factor instrument scale, consisting of supervisor support, opportunity to use, transfer design, peer support, supervisor sanction, personal outcomes-positive, personal outcomes-negative, and resistance and content validity.

Research conducted with Thai samples has reported mixed results (Salayaporn Boonkiat, 2004; Thammarat Jungsiriwattana, 2006; Pasachon Bumroongtham, 2008). Thammarat Jungsiriwattana (2006) studied the factors affecting learning transfer in the airline industry in Thailand using the LTSI diagnostic tool and found that the Thai samples did not see that supervisor sanctions affected the learning transfer. Pasachon Bumroongtham (2008) studied the same subject in a university setting and found that the Thai samples did not agree that supervisor sanctions, personal outcomes-positive, or negative had an impact on the learning transfer. Having studied the work environment factors affecting the transfer of training in the Thai telecommunications industry, Salayaporn Boonkiat (2003) found that supervisor support, organizational support, and peer support were the main factors affecting learning transfer, while lack of understanding and lack of cooperation from the supervisor was the factor inhibiting it. Interestingly, Warisara Kasemsri (2004) discovered that family-related factors, for example, being concerning about the family's well-being, stability, and security, were the top factor affecting learning transfer among 291 operational-level employees in a major food product organization in Thailand.

In summary, the transfer climate models of Rouiller and Goldstein (1993) and Holton et al. (1997) have been applied in this study. The three major variables of transfer climate, namely situational cues and consequences, supervisor support, and peer support, were adopted as they have been frequently cited as having a direct impact on the motivation to transfer learning and on the trainees' characteristics, which then leads to training and learning transfer.

2.1.6 Research on Learning Design

Learning or instructional design has been viewed as "a blueprint that defines the goals and specifies strategies to develop learning" (Lau & McLean, 2013, p. 4). It includes the learning content, instruction methods, and materials and assessment criteria. A number of studies have indicated that learning design strongly correlates with learning and transfer (Gagné, 1965; Thorndike & Woodworth, 1901; Baldwin & Ford, 1988; Knox, 2002; Montesino, 2002; Grossman & Salas, 2011; Lau & McLean,

2013; van der Locht, van Dam, & Chiaburu, 2013). Learning design principles have been applied to generate learning, retention, generalization, and maintenance of the skills acquired. In the following section, key learning design principles, supported by the literature as having an impact learning transfer, are discussed.

The identical elements concept has been consistently cited as one of the most critical aspects of learning design (Baldwin & Ford, 1988; Kraiger, 2003; Burke & Hutchins, 2007; van der Locht, van Dam, & Chiaburu, 2013). Research on learning design has suggested that the presence of identical elements and transfer settings enhance the learning transfer (Goldstein & Musicante, 1986; Baldwin & Ford, 1988; Butterfield & Nelson, 1989). The identical elements concept has been defined as "the extent to which the stimuli and responses in the training settings are identical to those in the actual performance environment" (Saks & Belcourt, 2006, as cited in van der Locht, van Dam, & Chiaburu, 2013).

The concept originated from Thorndike and Woodworth's (1901) conception of near transfer, whereby it was seen that trainees will transfer their learned knowledge and skills to the job setting if the methods and activities used in the training are similar to those used in the individuals' work; this is opposed to the notion of far transfer (Baldwin & Ford, 1988; Barnette & Ceci, 2002; Knox, 2002; Blume et al., 2010). According to Blume et al. (2010, p. 3), "transfer is more likely with near transfer tasks, which are highly similar to the learning tasks, and less likely as one moves to far transfer, in which the tasks and situations in the learning situation are quite different from the transfer setting".

Identical elements are likely to influence the transfer of open skills as opposed to closed skills (Blume et al., 2010). According to van der Locht, van Dam, and Chiaburu (2013), in closed skills training trainees learn to respond in one particular way on the job, according to a set of rules implemented in a precise fashion. On the other hand, in open skills training, such as training in interpersonal skills and supervisory skills, the trainees have the flexibility to apply the skills relevant to different situations.

van der Locht, van Dam, and Chiaburu (2013) tested the relationship between identical elements and the learning transfer with motivation to transfer as a mediator and found that identical elements were directly linked to transfer and indirectly linked through motivation to transfer. Furthermore, Grossman, and Salas (2011) indicated that

having a set training environment similar to the job setting would enhance the likelihood of the learned knowledge and skills being transferred (Kraiger, 2003; Burke & Hutchins, 2007).

General principles, on the other hand, are recommended for the far transfer design when the training does not involve only specific skill set applications, but general rules and principles on the training content application (McGehee & Thayer, 1961, as cited in Baldwin & Ford, 1988). Far transfer is defined as when the tasks and situations in the learning situations are quite different from the transfer setting (Blume et al., 2010). Adopting the general principles in the design, the trainees can apply the general rules or concepts learned in the training to the actual transfer settings (Baldwin & Ford, 1988; Blume et al., 2010).

Perceived content relevancy or training content consistent with job requirements has also been generally cited as a predictor of transfer outcomes (Rouiller & Goldstein, 1993; Axtell, Maitlis, & Yearta, 1997; Bates, Holton, & Seyler, 1998; Bates et al., 2000; Holton, Bates, & Ruona, 2000; Bates & Holton, 2004; Yamnill & McLean, 2005; Lau & McLean, 2013). The perceived content relevancy has been defined as "the extent to which trainees judge the training content to reflect the job requirement accurately" (Devos et al., 2007, as cited in Bhatti & Kaur, 2010, p. 660). Lieberman and Hoffmann (2008) found that perceived practical relevance has an impact on trainee affective reactions ($y=0.86$), which in turn influences transfer motivation ($\beta=0.63$) and thus learning transfer. According to their study, the perceived practical relevance of training content exerted a total effect of 0.817 on transfer motivation and 0.566 on the learning transfer.

Pre-training interventions, such as communicating training goals prior to the training and setting goals after the program's completion, have been found to be associated with maximizing the transfer (Gagné, 1965; Wexley & Nemeroff, 1975; Wexley & Baldwin, 1986; Kraiger, Salas, & Cannon-Bowers, 1995; Mager, 1997; Kontoghiorghes, 2001; Richman-Hirsch, 2001; Taylor et al., 2005, as cited in Burke & Hutchins, 2007). Blume et al. (2010) emphasized in a meta-analytic review that training goals or the intended outcomes of training on transfer should be set at the learning design stage.

The strategic alignment of corporate strategy and training has also been cited in the literature as enhancing transfer behaviors (Carnevale, Gainer, & Villet, 1990; Lynham, Provo, & Ruona, 1998; Wognum, 2000; Montesino, 2002). Montesino (2002) for example found a moderate correlation between the perceived alignment of training with strategic directions and the presence of practices to support the usage of the training. When the training programs and outcomes are aligned and respond to the corporate strategy spelt out by top management, transfer is likely to occur (Montesino, 2002).

The massed or distributed and whole versus parts learning design is when the training is divided into portions (Baldwin & Ford, 1988). Based on Briggs and Naylor's (1962) and Naylor and Briggs's (1963) studies, the material learned under distributed practice is generally retained longer than material learned under massed practice. It is also evident that in complex tasks the massed practice should be applied first, followed by distributed practices (Baldwin & Ford, 1988), as the trainees are likely to retain the learning over a longer period of time when the training applies distributed practice. Likewise, it has been reported that when the trainees are strong intellectually, it is more appropriate to apply whole training (Naylor & Briggs, 1963).

Other than the above-mentioned variables, research on learning design has also suggested that behavior modeling (Taylor, Russ-Eft, & Chan, 2005, as cited in Blume et al., 2010; Grossman & Salas, 2011), error management training (Burke & Hutchins, 2007; Keith & Frese, 2008, as cited in Blume et al., 2010; Grossman & Salas, 2011), variety of training stimuli (Baldwin, 1992; Knox, 2002; Holladay & Quinones, 2003; Day et al., 2006; Nikandrou, Brinia, & Bereri, 2009), overlearning (Driskell, Willis, & Cooper, 1992, as cited in Blume et al., 2010), and training delivery methods (Arthur, Bennette, Edens, & Bell, 2003; Sitzmann, Kraiger, Stewart, & Wisher, 2006, as cited in Blume et al., 2010) impact on the transfer of learning.

In Thailand, specifically Yamnill and McLean (2005) found that perceived content relevancy appeared to be the major factor in predicting successful transfer. Additionally, Thammarat Jungsiriwattana (2006) and Pasachon Bumroongtham (2008) studied the factors affecting learning transfer in the airline industry and in a university setting in Thailand using the LTSI diagnostic tool, and found that the Thai samples strongly agreed that learning design did have an impact on the transfer.

In conclusion, learning design includes three major variables: 1) instructional design strategy, consisting of identical elements and general principles; 2) perceived content validity; and 3) pre-training interventions, consisting of training goal communication and setting and alignment between corporate strategy and training. These three major variables have been frequently cited in research as affecting the trainee's reactions, characteristics, his or her motivation to transfer the, training and learning transfer.

2.2 Holton's HRD Evaluation Research and Measurement Model

Holton (1996) raised concern that the HRD field lacks research to further develop the theory of evaluation as he viewed that the four-level evaluation model (Kirkpatrick, 1959) was flawed, although he admitted its merit in terms of adding value to the training evaluation conceptual thinking. Holton noted that "the models have received incomplete implementation and little empirical testing" (Holton, 1996, p. 6). As a result, he proposed his HRD evaluation research and measurement model, which was influenced by Noe's (1986) notion of the macro construct of trainability, Baldwin and Ford's (1988) idea of motivation to transfer, and Rouiller and Goldstein's (1993) transfer climate.

In his HRD evaluation research and measurement model, as illustrated in figure 2.1 there are five dimensions: 1) the secondary influences consist of personal characteristics, intervention readiness, job attitudes, and intervention fulfillment; 2) motivation elements involve the motivation to learn, the motivation to transfer, and expected utility; 3) the environmental elements include reactions, the transfer climate, and external events (external events are not in the scope of the present study); 4) outcomes are comprised of learning, individual performance, and organization results; 5) ability includes the transfer design and the linkage to organizational goals (linkage to organizational goals are not in scope of the present study).

In terms of relationships, as depicted in figure 2.1, he used "thick arrows" to represent primary relationships, for example the relationships among the factors of ability, motivation to learn, reactions, motivation to transfer, transfer design, transfer climate, expected utility, external events, and linkage to organizational goals. The

"lighter arrows" were used to represent secondary relationships, for example the relationships among the factors of personal characteristics, intervention readiness, job attitudes, and intervention fulfillment. Unlike the primary relationships, the secondary relationships do not have boxes around them. Learning is viewed to influence individual performance, which ultimately results in organizational results. Secondary influences affect learning and the learning transfer through motivation to learn and to the learning transfer. Ability and reactions affect learning directly. Likewise, motivation to transfer, transfer design, and the transfer climate influence learning transfer and individual performance.

In 2005, Holton modified the HRD evaluation research and measurement model (Holton, 1996) as he had reviewed recent research studies and found new research evidence (Barrick & Mount, 1991; Colquitt, LePine, & Noe, 2000; Morgan & Casper, 2000; Bell & Kozlowski, 2002; Naquin & Holton, 2002; Ruona, Leimbach, Holton, & Bates, 2002; Naquin & Holton, 2003; Tan, Hall, & Boyce, 2003). In his revised HRD evaluation and research model, Holton (2005) detailed specific variables that could be measured in each construct. The model still consisted of five dimensions, namely secondary influences, motivation, environment, outcomes, and ability. However, compared to the model of Holton's in 1996, the variables in each construct are detailed as follows.

In the secondary influence dimension, individual characteristics are clearly depicted as conscientiousness, neuroticism, openness to experience, goal orientation, and locus of control; job attitudes are specified as organizational commitment and job involvement; intervention readiness is replaced by performance self-efficacy and learner readiness. In the motivation dimension, motivation to improve work through learning (Naquin & Holton, 2003) is introduced and it involves the motivation to learn, the motivation to transfer, transfer effort performance, and performance outcomes. In terms of the environmental dimension, perceptions of training are replaced by perceptions specifically identified as utility perceptions and behavioral intentions; transfer climate is broken down into feedback, peer support, supervisor support, openness to change, personal outcomes positive, personal outcomes negative, and supervisor sanctions. The outcomes dimension remains the same, while transfer design in the ability/enabling elements dimension is classified as content validity, transfer design, personal capacity to transfer, and opportunity to use.

Holton (2005) suggested that in validating the revised model, advanced statistical techniques such as structural equation modeling be used to find the causal relationships among the constructs. He also recommended that the model be validated in steps: on a single level, for example validating learning and all intervening variables affecting the learning, and then moving on to multi-level analysis in the next phase. Table 2.1 summarizes the differences between Holton's HRD evaluation research and measurement model (Holton, 1996) and Holton's revised HRD evaluation and research model (Holton, 2005).

2.3 Learning Transfer System Inventory (LTSI)

The learning transfer system inventory (LTSI) was introduced in 1997 (Holton, Bates, Seyler, & Carvalho, 1997) after Holton (1996) proposed the HRD evaluation research and measurement model. Holton (1996, p. 18) suggested that the model be validated, though he viewed it as "an ambitious undertaking." LTSI version 1 (Holton et al., 1997) resulted from an attempt to validate the evaluation measurement model, particularly the transfer climate construct, which was based on Rouiller and Goldstein's (1993) eight-factor structure. Holton et al. (1997) used EFA and CFA to test a 63-item-transfer climate instrument and concluded that the situation-consequences macro structure was invalid. They found problems with the item loadings and inconsistency in the loading patterns and thus recommended a change in the direction of adopting Rouiller and Goldstein's (1993) eight-factor structure.

Instead, they discovered that the trainees perceived the transfer climate according to referents in their organizations rather than psychological cues (Holton et al., 1997). Seven constructs emerged as the trainees' referents from the study: supervisor support, opportunity to use, peer support, supervisor sanctions, personal outcomes positive and personal outcomes negative and resistance. Data from the study (Holton et al., 1997) also identified two additional constructs affecting learning transfer as follows: content validity and transfer design. Therefore, there are nine constructs, 63 items, in the LTSI version 1 (Holton et al., 1997) as a result of validating the HRD evaluation research and measurement model (Holton, 1996). LTSI version 2 was created from adding new items to measure additional scales to test the HRD model

(Holton, 1996), in which the instrument was expanded to 112 items, measuring 16 constructs.

Effort in developing LTSI version 3 resulted from the concern that factor analysis was not performed to validate the evaluation scales and the hypothesized models. Thus, the scales had an issue regarding psychometrical soundness and it was difficult to identify the latent variable structure and relationships of all the factors (Holton, Bates, & Ruona, 2000). In addition, Holton et al. (2000) found a problem with LTSI version 1 in that it had a disproportionate number of items across the constructs. Thus, the HRD research and evaluation model (Holton, 1996) and the macro structure of trainability (Noe & Schmitt, 1986) were used as the referent framework to review the completeness of the constructs in the LTSI. As a result, they added seven new constructs to the existing nine constructs of LTSI version 1 as follows: performance self-efficacy, transfer effort-performance, performance outcomes, personal capacity to transfer, feedback-performance coaching, learner readiness, and general motivation to transfer. The total of 16 constructs and 112 items of the LTSI version 2 was tested using EFA and factor analysis and this resulted in the LTSI version 3 of sixteen constructs and 68 items, divided into the two domains of the training. The first domain measured the factors affecting the specific training program, consisting of eleven constructs; and the second domain measured those affecting the training program in general, consisting of five constructs (Holton et al., 2000). Although the EFA results were clean and interpretable, three constructs, namely supervisor sanctions, positive personal outcomes, and personal capacity to transfer, had a reliability lower than 0.7. Furthermore, there was an issue concerning the factor loading—some items were not loaded, some were weakly loaded, and others were cross-loaded.

Bates, Holton, and Hatala (2012) validated and replicated the factorial LTSI instrument using EFA and CFA, which resulted in the LTSI version 4 of 48 items, measuring sixteen constructs. The objectives of their study were twofold—1) to use EFA to group the common factors of variables, and 2) to use CFA to validate factorial structure of the LTSI emerging from EFA. The LTSI data used in their study were collected and accumulated from past cross-cultural research conducted in 17 countries with 17 versions of the translated LTSI. Bates et al. (2012, p. 551) viewed that some studies have provided full support of a 16-factor-structure LTSI, while others have

shown “minor factorial variations,” including those in the Jordanian Arabic version, the Taiwan Chinese version, and the Ukrainian version.

The Jordanian Arabic version used a 12-factor structure for the specific training domain (Khasawneh, Bates, & Holton, 2006), compared to the 11-factor structure of the original. Ten factors matched the original specific training program domain but two factors combined items from cross-factors—personal capacity to transfer and negative personal outcomes. Factor loading was marginal and exhibited low reliability. In the general training program domain, a sixth-factor structure emerged (versus five factors in the original) from the performance coaching scale, which was expanded into two factors—verbal advice and active assistance. The LTSI Taiwan/Chinese version (Chen, Hsin-Chih, Holton, & Bates, 2006) was EFA validated and resulted in a 10-factor structure specific training program domain. A new factor emerged from the combined items of transfer design and opportunity to use. In terms of the Ukrainian version of the LTSI, validated by EFA, Yamkovenko, Holton, and Bates (2007) found a problematic fit with the scales measuring opportunity to use, personal capacity, and personal outcomes positive.

Bates et al. (2012) conducted EFA and CFA to refine the LTSI scale items version 4. By deleting those items that were cross-loaded, or had inter-item correlations or low-scale reliability estimates, the number of scale items were reduced from 68 to 48. The LTSI validation confirmed the factorial structure of the 11-factor training program specifically and the 5-factor training program in general. In conclusion, all versions of the LTSI scales were developed and refined using Holton’s HRD evaluation research and measurement model (Holton, 1996).

Table 2.1 summarizes the similarities and differences between the HRD evaluation and research (Holton, 1996) and the revised HRD evaluation and research (Holton, 2005) in terms of the factors affecting the learning transfer and the training domains.

Table 2.1 Comparison of Factors in Holton's Model for the Years 1996 and 2005

Dimension	Factors in Holton 1996 Model	Factors in Holton 2005 Model	Training Domain
Secondary Influences	N/A	1. Conscientiousness (C)	General
		2. Neuroticism (N)	General
		3. Openness to Experience (OTE)	General
		4. Goal Orientation (GO)	General
		5. Locus of Control (LOC)	General
	N/A	6. Organization Commitment (OC)	General
		7. Job Involvement (JI)	General
Motivation	1. Performance Self-Efficacy	8. Performance Self-Efficacy (PSE)	General
	2. Learner Readiness	9. Learner Readiness (LR)	Specific
	3. Motivation to Transfer	10. Motivation to Transfer (MT)	Specific
	4. Transfer Effort to Performance	11. Transfer Effort to Performance (TEP)	General
	5. Performance Outcome Expectation	12. Performance Outcome Expectation (POE)	General
	N/A	13. Utility Perceptions (UP)	Specific
Environment	6. Feedback	14. Performance Coaching (PC)	General
	7. Peer Support	15. Peer Support (PS)	Specific
	8. Supervisor Support	16. Supervisor Support (SS)	Specific
	9. Resistance to Change	17. Resistance to Change (RC)	General
	10. Personal Outcomes Positive	18. Personal Outcomes Positive (POP)	Specific
	11. Personal Outcomes Negative	19. Personal Outcomes Negative (PON)	Specific
	12. Supervisor Opposition	20. Supervisor Opposition (SO)	Specific
Ability	13. Content Validity	21. Content Validity (CV)	Specific
	14. Transfer Design	22. Transfer Design (TD)	Specific
	15. Personal Capacity to Transfer	23. Personal Capacity to Transfer (PCT)	Specific
	16. Opportunity to use	24. Opportunity to use (OUT)	Specific

CHAPTER 3

RESEARCH METHOD

Swanson and Holton (2005, p. 4) defined research as "an orderly investigative process for the purpose of creating new knowledge". As mentioned in the first chapter, the purpose of this research is to study and create a conceptual model for learning transfer in the Thai banking sector, and to develop and validate a new learning transfer measurement scale and test the learning transfer model that emerges in order to investigate the causal links among the factors affecting the learning transfer. According to Swanson and Holton (2005, p. 5), "organizations are messy entities where systems are complex, open, and dynamic." In addition, it is a challenge for researchers to explore "a phenomenon operating within a host organization or the behavior of the phenomenon in the context of the organizational and its external environment" (Swanson & Holton, 2005, p. 6). Learning transfer has become an issue for discussions among global HRD practitioners and researchers, and questions have been raised on the part of management as to whether the training conducted in their organizations are effective and worth the money spent. This is clearly a management dilemma.

The main research question is "What factors, hypothesized in Holton's evaluation and research model (2005), can be identified when using the LTSI translated for the Thai population in the banking sector?" The following research questions are "What are the factors affecting the conceptual model for learning transfer in the Thai banking sector?" and "To what extent does each factor in the conceptual model influence others?"

An empirical approach with a questionnaire survey method was used in the research. This chapter describes the instruments used in this study, the data collection procedure, the population and samples, and the data analysis techniques used to answer the study's research questions. In order to develop and validate the new instrument and to test the model, three phases were involved: phase I, scale development; phase II, scale validation; and phase III, model testing.

Phase I, Scale Development

3.1 Instrument

This study used a quantitative research design with a self-report questionnaire to study the conceptual model for learning transfer in the Thai banking sector. The instrument in this study was developed from six measurement scales based on a literature review corresponding to the conceptual model proposed by Holton (2005), as detailed in Table 3.1. The conceptual model under study was an extended version of Holton's HRD evaluation research and measurement model (1996). In the revised HRD evaluation and research model (2005), having reviewed the recent research relevant to his constructs, Holton proposed two new constructs in the secondary influence dimension: 1) traits, consisting of 5 factors (conscientiousness, neuroticism, openness to new experience, goal orientation, and locus of control; and 2) job attitudes, consisting of 2 factors (organization commitment and job involvement). Furthermore, Holton reconsidered the importance of perceptions of training, utility perceptions in particular, which in his former proposed model was a moderator variable, to become a predictor of Learning Outcomes. Thus, utility perceptions were added to the environmental dimension. Altogether, three constructs and eight factors were added to the existing model of Holton's HRD evaluation research and measurement model (1996).

The big five inventory, learning goal orientation, and locus of control scales were applied to measure traits. Job involvement and normative commitment scales were used to measure organization commitment and job involvement, while the reactions measurement scale was applied to measure utility perceptions. LTSI version 4, consisting of 48 items, was also applied to measure the existing factors appearing in the HRD evaluation research and measurement model (Holton, 1996).

In conclusion, the 72-item questionnaire was developed to measure the 7 constructs and 24 factors of the conceptual model for learning transfer in the Thai banking sector (see Table 3.1).

Table 3.1 Instrument Development References

Construct	Factor	Instrument	Reference
Traits (Added)	1. Conscientiousness 2. Neuroticism 3. Openness to Experience	1. The Big Five Inventory	John, Donahue, & Kentle (1991) John, Naumann, & Soto (2008)
	4. Goal Orientation	2. Learning Goal Orientation Scale	Button, Mathieu, & Zajac (1996)
	5. Locus of Control	3. Locus of Control Scale	Levenson (1981)
Job Attitudes (Added)	6. Organization Commitment 7. Job Involvement	4. Job Involvement Scale and Normative Commitment Scale	Meyer & Allen (2004)
Reactions (Added)	8. Utility Perceptions	5. Reactions Measurement Scale	Tan, Hall, & Boyce (2003)
Secondary Influences	9. Personal Self-Efficacy 10. Learner Readiness	6. LTSI version4	Bates & Holton (2012)
Motivation	11. Motivation to Transfer 12. Transfer Effort to Performance 13. Performance Outcome Expectation	6. LTSI version4	Bates & Holton (2012)
Environment	14. Performance Coaching 15. Peer Support 16. Supervisor Support 17. Resistance to Change	6. LTSI version4	Bates & Holton (2012)

Table 3.1 (Continued)

Construct	Factor	Instrument	Reference
	18. Personal Outcomes Positive 19. Personal Outcomes Negative 20. Supervisor Opposition		
Ability	21. Content Validity 22. Transfer Design 23. Personal Capacity to Transfer 24. Opportunity to Use	6. LTSI version4	Bates & Holton (2012)

3.2 Back Translation

Four translation experts, one of whom was an HRD professional at a private company and a graduate with an English major from the Faculty of Arts, Chulalongkorn University, two of whom were graduates with distinction from international master degree programs abroad, and the other one a proficient translator that had graduated from the Faculty of Psychology, Chulalongkorn University, were contacted to assist with the questionnaire item translation. LTSI version 4 (48 items) and the eight new factors added to the model (24 items) were translated from English to Thai by a language expert. Then the 72-item Thai version of the questionnaire was translated back into English by 2 language experts. The back translation version of LTSI version 4, with 48 items, was then sent to Professor Reid Bates, the licensor of the scale measurement; 41 items were requested to be re-adjusted. Another translation expert was asked to adjust the translation and the final version of the LTSI version 4 was then resubmitted to Professor Reid Bates and was finally approved.

3.3 Index of Item-Objective Congruence (IOC)

In order to test the reliability and validity of the instrument in this study, IOC was adopted. According to Rovinelli and Hambleton, 1977, IOC is a process by which content experts rate individual items based on the degree to which they measure specific objectives listed by the test developer. In this study five content experts on learning transfer, three of whom were HR and HRD executives from three Thai major banks, and two of whom were well-recognized university professors in the HRD field, were invited to evaluate each item concerning whether it measured the intended construct by rating 1 (clearly measuring), -1 (clearly not measuring), and 0 (for unclear measure). The generally-accepted value for the cutoff is recommended to be a minimum of .6 (Rovinelli & Hambleton, 1977).

Of the 72 items, 31 passed the cutoff criterion of 0.6, signifying that 3 of the 5 experts agreed that the item measured the specified objective. Forty-one items were revised and re-adjusted to ensure that they measured the corresponding objectives. It should be noted that out of 72 items the two professors rated 1 (clearly measuring) to 68 and 64 items, while the three executives rated 1 (clearly measuring) to 31, 31, and 20 items. This demonstrated the discrepancy and different worldviews between the experts that were from different backgrounds.

Table 3.2 IOC Results

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Score	Average Score
1	1	1	1	1	0	4	0.80
2	0	1	1	1	0	3	0.60
3	-1	1	1	1	0	2	0.40
4	1	1	1	1	1	5	1.00
5	-1	1	1	0	1	2	0.40
6	0	1	1	0	1	3	0.60
7	1	1	1	0	1	4	0.80

Table 3.2 (Continued)

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Score	Average Score
8	1	1	1	0	1	4	0.80
9	-1	1	1	0	1	2	0.40
10	0	1	1	1	0	3	0.60
11	-1	1	1	0	0	1	0.20
12	-1	1	1	1	1	3	0.60
13	-1	1	1	0	0	1	0.20
14	-1	1	1	-1	-1	-1	-0.20
15	-1	1	1	-1	0	0	0.00
16	-1	1	1	-1	1	1	0.20
17	-1	1	1	-1	0	0	0.00
18	-1	1	1	-1	0	0	0.00
19	-1	1	0	-1	0	-1	-0.20
20	-1	1	0	-1	0	-1	-0.20
21	-1	1	0	-1	0	-1	-0.20
22	-1	1	1	-1	-1	-1	-0.20
23	0	1	1	-1	-1	0	0.00
24	-1	1	0	-1	-1	-2	-0.40
25	1	1	1	0	-1	2	0.40
26	0	1	1	0	0	2	0.40
27	0	1	1	0	0	2	0.40
28	1	1	1	1	1	5	1.00
29	1	1	1	1	0	4	0.80
30	-1	0	1	1	-1	0	0.00
31	1	1	1	0	1	4	0.80
32	-1	0	1	0	-1	-1	0.20
33	-1	1	1	0	1	2	0.40
34	1	1	1	0	-1	2	0.40

Table 3.2 (Continued)

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Score	Average Score
35	0	1	1	-1	0	-1	0.20
36	1	1	1	-1	1	3	0.60
37	1	0	1	1	1	4	0.80
38	1	0	1	0	1	3	0.60
39	1	0	1	1	0	3	0.60
40	1	1	1	-1	1	3	0.60
41	0	1	1	-1	1	2	0.40
42	0	1	1	-1	1	2	0.40
43	-1	0	1	0	1	1	0.20
44	1	0	1	0	0	2	0.40
45	-1	0	1	0	1	1	0.20
46	1	1	1	1	1	5	1.00
47	-1	1	1	1	1	3	0.60
48	1	1	1	1	1	5	1.00
49	1	1	1	-1	1	3	0.60
50	1	1	1	-1	0	2	0.40
51	-1	1	1	-1	1	1	0.20
52	-1	1	1	0	1	2	0.40
53	-1	1	1	0	-1	0	0.00
54	1	1	1	1	-1	3	0.60
55	-1	1	1	0	-1	0	0.00
56	1	1	1	0	0	3	0.60
57	1	1	1	1	-1	3	0.60
58	0	1	1	1	0	3	0.60
59	-1	1	1	1	1	3	0.60
60	1	1	1	1	1	5	1.00
61	-1	1	1	0	-1	0	0.00

Table 3.2 (Continued)

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Score	Average Score
62	1	1	1	0	1	4	0.80
63	1	1	1	0	1	4	0.80
64	0	1	1	1	-1	2	0.40
65	1	1	1	1	-1	3	0.60
66	-1	1	1	0	-1	0	0.00
67	1	1	1	0	-1	2	0.40
68	1	1	1	-1	-1	1	0.20
69	1	1	1	-1	-1	1	0.20
70	1	1	1	-1	1	3	0.60
71	1	1	1	-1	1	3	0.60
72	-1	1	1	-1	0	0	0.00

3.4 Description of the Instrument

A 72–item-instrument was used to study the two domains of training; specific training and general training.

Table 3.3 Instrument Based on Dimension, Construct, Factor and Item

Dimension	Construct	Factor	Item Number	Domain of Training
Secondary Influences	Traits	1) Conscientiousness	55,59,60	General 1
		2) Neuroticism	64,65,66	General 2
		3) Openness to Experience	67,68,69	General 3
		4) Goal Orientation	70,71,72	General 4
		5) Locus of Control	56,57,58	General 5

Table 3.3 (Continued)

Dimension	Construct	Factor	Item Number	Domain of Training
	Job Attitudes	6) Organization Commitment	52,53,54	General 6
		7) Job Involvement	61,62,63	General 7
		8) Performance Self-Efficacy	48,49,50	General 8
		9) Learner Readiness	1,11,12	Specific 1
Motivation	Motivation to Improve	10) Motivation to Transfer	2,3,4	Specific 2
	Work through Learning	11) Transfer Effort to Performance	37,38,41	General 9
		12) Performance Outcome Expectation	39,40,42	General 10
Environment	Reactions	13) Utility Perceptions	5,6,7	Specific 3
		14) Performance Coaching	46,47,51	General 11
		15) Peer Support	21,22,23	Specific 4
		16) Supervisor Support	24,25,29	Specific 5
		17) Resistance to Change	43,44,45	General 12
		18) Personal Outcomes Positive	8,9,10	Specific 6
		19) Personal Outcomes Negative	15,18,19	Specific 7

Table 3.3 (Continued)

Dimension	Construct	Factor	Item Number	Domain of Training
		20) Supervisor Opposition	26,27,28	Specific 8
Ability		21) Content Validity	30,31,32	Specific 9
		22) Transfer Design	33,34,35	Specific 10
		23) Personal Capacity to Transfer	13,14,17	Specific 11
		24) Opportunity to Use	16,20,36	Specific 12

The conceptual model in the study was a multi-level one, classified into 5 dimensions which were secondary influences, motivation, environment, ability, and outcomes. The outcomes dimension, consisting of learning and individual performance, was not included in this study since it was not possible to collect the data as the organizations deemed them confidential. Moreover, in terms of the learning outcomes data, different organizations held different training courses for their employees and each course assessment depended on the curriculum designer of each organization. When the learning outcomes data were collected from the learners taking different courses and the learning outcome measurement differed, the validity of the learning outcomes data could not be achieved. Apart from the fact that every organization classified the individual performance data as confidential, each organization had different performance measurement scales and definitions. In addition, the performance outcome ratings were prone to be subjectively rated. Therefore, the data were unlikely to be reliable or valid. The outcomes dimension thus did not appear in the table above. As illustrated, each dimension consisted of various numbers of factors ranging from 3 to 8. In terms of the training domain perspective, the model in the present study measured two domains. The general training domain consisted of 12 factors and the specific training domain consisted of another 12 factors; altogether 24 factors. Each factor consisted of three items, thus in total 72 items. In the questionnaire,

items 1-36 measured the specific training experience, while items 37-72 measured the general training experience. A five-point Likert-type scale was used to determine the respondent's viewpoint, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5) for consistency across all items in the consolidated questionnaire. The demographic and training frequency data, numbered 73-79, were included in the survey.

Table 3.4 Specific Training Domain Instrument Description

Dimension	**Factor**	**Item Description**
Secondary Influences	1) Learner Readiness (LR)	1) Prior to the training, I knew how the program was supposed to affect my performance. 11) Before the training, I had a good understanding of how it would fit my job-related development. 12) I knew what to expect from the training before it began.
Motivation	2) Motivation to Transfer (MT)	2) Training will increase personal productivity. 3) When I leave training, I can't wait to get back to work to try what I learned. 4) I believe the training will help me do my current job better.
Environment	3) Utility Perceptions (UP)	5) The training program was useless for me. 6) This training was a waste of time. 7) This training program taught me nothing I will use on the job.
	4) Peer Support (PS)	21) My colleagues appreciate my using new skills I have learned in training. 22) My colleagues encourage me to use the skills I have learned in training. 23) At work, my colleagues expect me to use what I learn in training.

Table 3.4 (Continued)

Dimension	Factor	Item Description
	5) Supervisor Support (SS)	24) My supervisor meets with me regularly to work on problems I may be having in trying to use my training.
		25) My supervisor meets with me to discuss ways to apply training on the job.
		29) My supervisor helps me set realistic goals for job performance based on my training.
Environment	6) Personal Outcomes Positive (POP)	8) Successfully using this training will help me get a salary increase.
		9) If I use this training, I am more likely to be rewarded.
		10) I am likely to receive some "perks", if I use my newly learned skills on the job.
	7) Personal Outcomes Negative (PON)	15) Employees in this organization are penalized for not using what they have learned in training.
		18) If I do not use new techniques taught in training, I will be reprimanded.
		19) If I do not utilize my training, I will be cautioned about it.
	8) Supervisor Opposition (SO)	26) My supervisor thinks I am being less effective when I use the techniques taught in this training.
		27) My supervisor will oppose the use of techniques I learned in this training.
		28) My supervisor will probably criticize this training when I get back to the job.

Table 3.4 (Continued)

Dimension	Factor	Item Description
Ability	9) Content Validity (CV)	30) The instructional aids (equipment, illustrations, etc.) used in training are very similar to real things I use on the job. 31) The methods used in training are very similar to how we do it on the job. 32) I like the way training seems too much like my job.
Ability	10) Transfer Design (TD)	33) It is clear to me that the people conducting the training understand how I will use what I learn. 34) The trainer(s) used lots of examples that showed me how I could use my learning on the job. 35) The way the trainer(s) taught the material made me feel more confident I could apply it.
	11) Personal Capacity to Transfer (PCT)	13) I don't have time to try to use this training. 14) Trying to use this training will take too much energy away from my other work. 17) There is too much happening at work right now for me to try to use this training.
	12) Opportunity to Use (OUT)	16) I will be able to try out this training on my job. 20) The resources I need to use what I learned will be available to me after training. 36) I will get opportunities to use this training on my job.

Table 3.5 General Training Domain Instrument Description

Dimension	**Factor**	**Item**
Secondary Influences	1) Conscientiousness (C)	55) I perform a thorough job.
		59) I make plans and follows through with them.
		60) I persevere until the task is finished.
	2) Neuroticism (N)	64) I worry a lot.
		65) Sometimes I feel depressed and blue.
		66) I often feel that I am inferior to others.
	3) Openness to Experience (OTE)	67) I am curious about many different things.
		68) I am sophisticated in art, music, or literature
		69) I like to reflect and play with ideas.
	4) Goal Orientation (GO)	70) The opportunity to do challenging work is important to me.
		71) I prefer to work on tasks that force me to learn new things.
		72) The opportunity to learn new things is important to me.
	5) Locus of Control (LOC)	56) Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.
		57) It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.
		58) I feel like what happens in my life is mostly determined by powerful people.

Table 3.5 (Continued)

Dimension	Factor	Item
	6) Organization Commitment (OC)	52) I would not leave my organization right now because I have a sense of obligation to the people in it. 53) I would feel guilty if I left my organization now. 54) I owe a great deal to my organization.
	7) Job Involvement (JI)	61) I am personally quite committed to my job. 62) Most of my interests are related with my job. 63) Most of my personal goals are related with my job.
	8) Performance Self-efficacy (PSE)	48) I never doubt my ability to use newly learned skills on the job. 49) I am sure I can overcome obstacles on the job that hinder my use of new skills or knowledge. 50) At work, I feel very confident using what I learned in training even in the face of difficult or taxing situations.
Motivation	9)Transfer Effort to Performance (TEP)	37) My job performance improves when I use new things that I have learned. 38) The harder I work at learning, the better I do my job. 41) The more training I apply on my job, the better I do my job.

Table 3.5 (Continued)

Dimension	Factor	Item
	10) Performance Outcome Expectation (POE)	39) For the most part, the people who get rewarded around here are the ones that do something to deserve it. 40) When I do things to improve my performance, good things happen to me. 42) My job is ideal for someone who likes to get rewarded when they do something really good.
Environment	11) Performance Coaching	46) People often make suggestions about how I can improve my job performance. 47) I get a lot of advice from others about how to do my job better. 51) People often tell me things to help me improve my job performance.
	12) Resistance to Change	43) Experienced employees in my group ridicule others when they use techniques they learn in training. 44) People in my group are not willing to put in the effort to change the way things are done. 45) My workgroup is reluctant to try new ways of doing things.

3.5 Pilot Study and Finalizing the Questionnaire

Apart from checking the content validity of the scale item with IOC, a pilot study of 30 samples from the target population of a bank using the random sampling method was conducted in order to ensure the quality of the measurement scale, and a 100% response rate was achieved. The pilot group was asked to complete the Thai

translated questionnaire in paper-based form right after their training. Most of the respondents completed the 72-item questionnaire within 20 minutes. They seemed to understand the questions in the survey as very few questions were asked during the pilot study. The reliability of the instrument was reported as follows: the corrected item-total correlation (CITC) ranged from 0.3 to 1.0, with the exception of two items that scored less than 0.2, and Cronbach's alpha ranged from .356 to 1.0. Thus, the questionnaire was finalized and the survey was produced in both hard copy and online.

Table 3.6 Cronbach's Alpha and CITC Values

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha
Specific Training			
- Learner Readiness			.356
	LR1	.011	
	LR2	.283	
	LR3	.402	
- Motivation to Transfer			.879
	MT1	.761	
	MT2	.778	
	MT3	.792	
- Utility Perceptions			1.0
	UP1	1.0	
	UP2	1.0	
	UP3	1.0	
- Peer Support			.868
	PS1	.682	
	PS2	.786	
	PS3	.796	

Table 3.6 (Continued)

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha
-Supervisor Support			.815
	SS1	.723	
	SS2	.688	
	SS3	.600	
- Personal Outcomes Positive			.905
	POP1	.851	
	POP2	.894	
	POP3	.727	
-Personal Outcomes Negative			.835
	PON1	.515	
	PON2	.850	
	PON3	.772	
-Supervisor Opposition			.848
	SO1	.679	
	SO2	.759	
	SO3	.714	
- Content Validity			.917
	CV1	.770	
	CV2	.902	
	CV3	.830	
- Transfer Design			.871
	TD1	.691	
	TD2	.792	
	TD3	.780	
-Personal Capacity to Transfer			.623
	PCT1	.609	
	PCT2	.299	
	PCT3	.423	

Table 3.6 (Continued)

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha
-Opportunity to use			.580
	OUT1	.345	
	OUT2	.349	
	OUT3	.567	
General Training			
-Conscientiousness			.584
	C1	.036	
	C2	.718	
	C3	.539	
-Neuroticism			.816
	N1	.639	
	N2	.813	
	N3	.592	
-Openness to Experience			.706
	OTE1	.226	
	OTE2	.635	
	OTE3	.792	
-Goal Orientation			.793
	GO1	.724	
	GO2	.679	
	GO3	.579	
-Locus of Control			.539
	LOC1	.262	
	LOC2	.458	
	LOC3	.383	

Table 3.6 (Continued)

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha
- Organization Commitment	OC1	.791	.857
	OC2	.827	
	OC3	.644	
-Job Involvement			.927
	JI1	.824	
	JI2	.865	
	JI3	.876	
- Performance Self-Efficacy			.736
	PSE1	.395	
	PSE2	.704	
	PSE3	.620	
- Transfer Effort to Performance			.878
	TEP1	.819	
	TEP2	.849	
	TEP3	.683	
-Performance Outcome Expectation			.650
	POE1	.492	
	POE2	.597	
	POE3	.345	
- Performance Coaching			.857
	PC1	.732	
	PC2	.852	
	PC3	.620	
- Resistance to Change			.872
	RC1	.572	
	RC2	.882	
	RC3	.852	

3.6 Summary of Questionnaire Items by Dimension

The questionnaire was classified into 2 domains as indicated earlier. In the survey, the respondents were told to read the instructions carefully. When the respondents read the survey in the specific training domain, they were reminded to focus on their experience in this specific training, and when they do the survey in the part of the general training domain, they were asked to think about the general training, not the specific one. Item numbers 1-36 represented the question items of the specific training domain, while item numbers 37-72 represented those of the general training domain. Table 3.7 illustrated contents of the instrument; the factors mapping to the constructs, the item number and the domain.

Table 3.7 Instrument Items by Dimension

Dimension	Factor	Item	Domain
Secondary	Conscientiousness	55 59 60	General Training
Influences	Neuroticism	64 65 66	General Training
	Openness to Experience	67 68 69	General Training
	Goal Orientation	70 71 72	General Training
	Locus of Control	56 57 58	General Training
	Organization Commitment	52 53 54	General Training
	Job Involvement	61 62 63	General Training
	Performance Self-Efficacy	48 49 50	General Training
	Learner Readiness	1 11 12	Specific Training
Motivation	Motivation to Transfer	2 3 4	Specific Training
	Transfer Effort to Performance	37 38 41	General Training
	Performance Outcome Expectation	39 40 42	General Training
Perceptions	Utility Perceptions	5 6 7	Specific Training

Table 3.7 (Continued)

Dimension	Factor	Item	Domain
Environment	Performance Coaching	46 47 51	General Training
	Peer Support	21 22 23	Specific Training
	Supervisor Support	24 25 29	Specific Training
	Resistance to Change	43 44 45	General Training
	Personal Outcomes Positive	8 9 10	Specific Training
	Personal Outcomes Negative	15 18 19	Specific Training
	Supervisor Opposition	26 27 28	Specific Training
Ability	Content Validity	30 31 32	Specific Training
	Transfer Design	33 34 35	Specific Training
	Personal Capacity to Transfer	13 14 17	Specific Training
	Opportunity to use	16 20 36	Specific Training

3.7 Data Analysis

Testing the conceptual model for learning transfer in Thai banking sector, reliability, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and structural model test were performed using SPSS and AMOS Statistics version 24 analysis tools. Structural Equation Modeling (SEM), an advanced statistical techniques designed to handle multiple independent and dependent variables whereby some of which are measured and others of which are unobserved, was appropriate because SEM provided "a viable statistical tool for exploring all of these relationships" and "testing the model of predicted relationships among observed and unobserved variables" (Swanson & Holton, 2005, p. 144). Holton (2005, p. 51) also posited that "the validation studies will require structural equation modeling analysis to study causal relationships hypothesized among the construct. Because the model was a multilevel one hierarchical linear modeling would likely be employed to analyze the cross-level relationships."

As mentioned earlier, the purpose of the study was to identify the factors hypothesized in Holton's Evaluation Model (2005) when using the LTSI translated for a Thai population in banking sector, to understand the factors affecting the learning transfer in Thai banking sector as well as to what extent each factor in the conceptual model influenced another.

First, the reliability of the instrument was conducted to check the internal consistency of the measurement scale. The cronbach's alpha value 0.9 signified the scale items extremely highly consistent, 0.8 signified the scale items highly consistent, 0.7 signified the scale items consistent (Kanlaya Vanichbuncha, 2013). The cronbach's alpha value greater than .40 on a factor should be considered "significant" and used in defining that factor (Comrey, 1978 as cited in Ford, MacCallum, & Tait, 1986).

Then Exploratory Factor Analysis (EFA) was used to identify the structure of the relationship among the variables using factor analysis and factor loading. The goal of EFA is to identify factors based on data and to maximize the amount of variance explained. The researcher is not required to have any specific hypotheses about how many factors will emerge, and what items or variables these factors will comprise (Kanlaya Vanichbuncha, 2013).

When the structure of the relationship among variables was identified and formed into factors, they would then be confirmed using Confirmatory Factor Analysis (CFA). CFA evaluated a priori hypotheses and is largely driven by theory. CFA analysis required the researcher to hypothesize, in advance, the number of factors, whether or not these factors were correlated, and which items/measures loaded onto and reflected which factors (Kanlaya Vanichbuncha, 2013). The purpose of CFA in this study was to test whether the constructs emerged from EFA were consistent with or different from those hypothesized in Holton (2005). When the structure of the relationship among variables was identified and formed into factors, they would then be confirmed using Confirmatory Factor Analysis (CFA). CFA was then used to evaluate the priori hypotheses whether or not these factors were correlated, and which items/measures loaded onto and reflected which factors (Kanlaya Vanichbuncha, 2013). The criteria used to assess the model fit were put in the table below (Hooper, Coughlan, & Mullen, 2008).

Table 3.8 CFA Criteria for Model Fit

Absolute Fit Indices	Level of Fit: Good	Level of Fit: Satisfactory
CMIN/df	$0 \leq \text{CMIN/df} \leq 3$	$3 \leq \text{CMIN/df} \leq 5$
RMR	$0 \leq \text{RMR} \leq 0.05$	$0.05 \leq \text{RMR} \leq 0.10$
GFI	$0.95 \leq \text{GFI} \leq 1.00$	$0.9 \leq \text{GFI} \leq 0.95$
AGFI	$0.95 \leq \text{AGFI} \leq 1.00$	$0.9 \leq \text{AGFI} \leq 0.95$
NFI	$0.95 \leq \text{NFI} \leq 1.00$	$0.9 \leq \text{NFI} \leq 0.95$
RFI	$0.95 \leq \text{RFI} \leq 1.00$	$0.9 \leq \text{RFI} \leq 0.95$
IFI	$0.95 \leq \text{IFI} \leq 1.00$	$0.9 \leq \text{IFI} \leq 0.95$
TLI	$0.95 \leq \text{TLI} \leq 1.00$	$0.9 \leq \text{TLI} \leq 0.95$
CFI	$0.95 \leq \text{CFI} \leq 1.00$	$0.9 \leq \text{CFI} \leq 0.95$
RMSEA	$0 \leq \text{RMSEA} \leq 0.05$	$0.05 < \text{RMSEA} \leq 0.08$

Finally, the identified structural model was tested using structural equation modeling in order to investigate and analyze the causal-explanatory paths of the predicted relationships in the model. According to Swanson and Holton (2005, p. 145-146), “the structural model is also confirmatory in nature and is used to specify the causal relations of the constructs to one another based on a priori theory and hypotheses.” Furthermore, the structural equation modeling “explores measured variables, establishes a measurement model linking latent variables to their indicators and investigates the relations among latent variables in the form of a structural model.”

3.8 Population and Sample

There were 14 Thai commercial banks in the Thai banking system. Being classified by asset-sized market share, the Bank of Thailand has placed Thai commercial banks into three groups as depicted in the table below: four large-sized banks, namely Bangkok Bank (BBL), Kasikorn Bank (KBANK), Siam Commercial Bank (SCB), and Krungthai Bank (KTB); three medium-sized; and seven small-sized banks.

Table 3.9 Classification of Thai Commercial Banks in the System

Size	Large Sized	Medium Sized	Small Sized
Definition	Asset size above 10 percent of the total Thai commercial bank market share	Asset size from 3 but less than 10 percent of the total Thai commercial bank market share	Asset size below 3 percent of the total Thai commercial bank market share
Number of Banks	4	3	7

Source: Bank of Thailand, 2018a.

The present study was conducted on three large-sized Thai commercial banks—Bangkok Bank, Kasikorn Bank, and Siam Commercial Bank—due to the transfer impact and number of samplings. Krungthai Bank, despite being classified as one of the large-sized commercial banks, was not included in this study due to its difference from the other three banks. According to the Stock Exchange of Thailand (2015), its major shareholder, owning 55.07 percent of the total shares, is Financial Institutions Development Fund (FIDF) and the management of the fund is run by the Bank of Thailand and the Ministry of Finance (Bank of Thailand, 2018b). Thus, KTB can be viewed as the Bank of Thailand and as the government's financial instrument for stabilizing the Thai economy or as a "state-owned bank" (Sucheera Pinijparakarn, 2017), which differs from the role of those three banks. In terms of the learning transfer impact, these three large-sized banks owned 3,439 branches or 50 percent of the total Thai commercial bank branches (Bank of Thailand, 2018a) and has 73,645 employees or 47 percent of the people employed by the 14 Thai commercial banks (Bangkok Bank, 2014; Kasikorn Bank, 2014; Siam Commercial Bank, 2014). The population in this research was the front-line employees (interfacing with the consumers) in retail banking, which accounted for half of the three banks' populations or approximately 36,819 workers. With such a large number of employees, it allowed sufficient data, and data on the diverse population to be collected.

Communication via letters, phone calls, face-to-face meetings, and e-mail was made with the human resource department authorities of the three banks to propose the concept and deliverables. It was planned that the assigned human resource department representatives would be requested to distribute, follow-up, and collect the questionnaires for the researcher. There were two options in regards to the questionnaire administration, hard copy or on-line survey. Instructions for completing the survey were provided at the top of the questionnaire page.

3.9 Sample in the Study

The target population for this study was the front-line staff of the three major retail banks[2]. The total number of workers was approximately 36,819 (Bangkok Bank, 2014; Kasikorn Bank, 2014; Siam Commercial Bank, 2014). The researcher used probability sampling, which is "a controlled procedure that assures each population element is given a known nonzero chance of selection" as "only probability samples [offer] the opportunity to generalize the findings to the population of interest from the sample population" (Cooper & Schindler, 2006, p. 343).

In terms of sample size, the rule of thumb for SEM (Swanson & Holton, 2005) and Yamane's sample size calculation formula (Yamane, 1973) methods were compared. When the two methods were calculated, whichever method yielded the higher figure, the sampling size of that method was adopted. The calculation of the SEM's rule of thumb and Yamane's sample size calculation formula are described as follows.

According to Swanson and Holton (2005, p. 155), the sample size requirements for the SEM method are "rules of thumb that focus on some minimum threshold for implementing SEM." The minimums are thought to be 100, 200 or greater (Boomsma, 1982; Marsh, Balla, & McDonald, 1988, as cited in Swanson & Holton, 2005). However, the researcher should consider expanding the sample size when the model is more complex.

[2] Retail banking is a division of a bank dealing with retail customers. Services offered include savings and transactional accounts, mortgages, personal loans, debit cards, and credit cards.

There were altogether twenty-four variables in this study and each variable included three items in the questionnaire; thus, a 72-item scale questionnaire was developed. Nunnally (1967, p. 4) recommended that with SEM estimation "a good rule is to have at least ten times as many subjects as variables". In this study at least 720 samplings were expected to be covered.

The other sample size calculation method was developed by Yamane (1973),

$$n = \frac{N}{1 + N * (e)^2}$$

where the sample size calculation formula is and where n is the sample size, N is the population size, and e is the acceptable sampling error. In calculating the sample size, the author used an acceptable sampling error of .05 and the total sample size calculated using Yamane's formula yielded 397 samples.

Table 3.10 Sample Size Calculation Table

Size	BBL	SCB	KBANK	Total
Retail banking population	13,066	12,946	10,807	36,819
Sample size: rule of thumb (Swanson & Holton, 2005)	240	240	240	720
Sample size: Yamane's formula (Yamane, 1973)	143	139	115	397

Comparing the sample size calculation, the rule of thumb method yielded the higher number of samplings; thus, the sample size for this study was expected to be 720. The questionnaires were distributed according to two modes: online and paper based. This was up to preferences of the HRD contacts of each bank. At KBANK the online mode was chosen as the researcher was not allowed to distribute the questionnaire at the training center. The online questionnaire was sent through the Line application to the KBANK Business Unit Heads and acquaintances there for assistance in collecting the data and 230 online questionnaires were submitted. At SCB, the researcher asked for cooperation and approval from one of the business heads, who then

passed the request on to the head of HR and a contact was sent to be in touch with the researcher. She suggested that the paper-based questionnaire was more appropriate, so the researcher sent 500 paper-based questionnaires to the SCB contact and 250 was returned. At BBL, 200 paper-based questionnaires were first sent and an online questionnaire was then generated for the HRD team and 310 questionnaires were returned. In total, 790 surveys were received; however, not all of the questionnaires were valid. After the data in the questionnaires were keyed in and cleaned, it was found that several questionnaires were not completed; the respondents left many of the items unanswered; and others selected the same answers for every item. These invalid cases might have been caused by the length of the questions asked. As a result, 679 samples (86%) were considered to be valid and were used for the analysis in the study.

Table 3.11 Number of Respondents

	KBANK	**SCB**	**BBL**
Mode of Distribution	Online	Paper-based	Online & paper-based
# Questionnaire sent	n.a.	500	Online & 200
# Distributed	n.a.	n.a.	Online & 200
# Received	230	250	310
# Valid	206	218	255
# Total Received		790 (100%)	
# Total Valid		679 (86%)	

3.10 Reliability

Table 3.12 illustrates the reliability of the Thai translated measurement instrument. The values of Cronbach's alpha ranged from .591 to .849, with the lowest value of .591 belonging to the "opportunity to use" factor and the highest value of .849 being "transfer design." As the lowest Cronbach's alpha found in the measurement instrument in the study was higher than 0.5, all of the factors were kept for further exploratory factor analysis.

Table 3.12 Reliability of the Instrument (679 Samples)

Dimension	Factor	Abbrev.	Item Number	Cronbach's Alpha
Secondary	Conscientiousness	C	55 59 60	.709
Influences	Neuroticism	N	64 65 66	.645
	Openness to Experience	OTE	67 68 69	.612
	Goal Orientation	GO	70 71 72	.797
	Locus of Control	LOC	56 57 58	.664
	Organization Commitment	OC	52 53 54	.719
	Job Involvement	JI	61 62 63	.834
	Performance Self-Efficacy	PSE	48 49 50	.650
	Learner Readiness	LR	1 11 12	.650
Motivation	Motivation to Transfer	MT	2 3 4	.833
	Transfer Effort to Performance	TEP	37 38 41	.836
	Performance Outcome Expectation	POE	39 40 42	.716
Environment	Utility Perceptions	UP	5 6 7	.857
	Performance Coaching	PC	46 47 51	.779
	Peer Support	PS	21 22 23	.840
	Supervisor Support	SS	24 25 29	.776
	Resistance to Change	RC	43 44 45	.769
	Personal Outcomes Positive	POP	8 9 10	.812
	Personal Outcomes Negative	PON	15 18 19	.665
	Supervisor Opposition	SO	26 27 28	.813

Table 3.12 (Continued)

Dimension	Factor	Abbrev.	Item Number	Cronbach's Alpha
Ability	Content Validity	CV	30 31 32	.838
	Transfer Design	TD	33 34 35	.849
	Personal Capacity to Transfer	PCT	13 14 17	.708
	Opportunity to use	OUT	16 20 36	.591

3.11 Summary

This chapter described the research design, the research instrument, the population and sample, the data collection, the data analysis techniques, and the reliability of the instrument. This study used a quantitative research design with a self-report questionnaire to study and create the conceptual model for learning transfer in the Thai banking sector. The instrument used in this study was derived from six measurement scales based on a literature review to correspond to the conceptual model proposed by Holton (2005), as illustrated in Figure 3.1. The 72-itemquestionnaire instrument was then translated into Thai and was then back-translated into English for approval. The index of item objective congruence of the translated version was performed by HRD executives of three banks and HRD professors. Although 31 of 72 items received 0.6 and an above-average IOC score, the translated content of 41 items was reconsidered and readjusted in order to make them more comprehensible to the target group. The pilot study of the instrument was conducted with 30 samples and the results were considered to be satisfactory. Thus, the final questionnaire was produced in both hard copy and online. The letters were sent and communications were made with the HRD executives of the three banks. The questionnaire was then distributed to the assigned HRD contacts of each organization. The valid 679 questionnaire forms were returned for analysis. The reliability and validity of the scale items were tested using Cronbach's alpha in order to check the internal consistency of the measurement. EFA of the Thai translated items of the modified Holton model (2005) was then

performed in order to explore the factor loading and the correlations among the observable variables so as to reduce or combine the related factors. Next, CFA was conducted in order to confirm and to test the relationships of the observable variables as hypothesized in the model and the literature review. The final step was to run SEM on the conceptual model in order to investigate and analyze the causal-explanatory paths of the predicted relationships in the model.

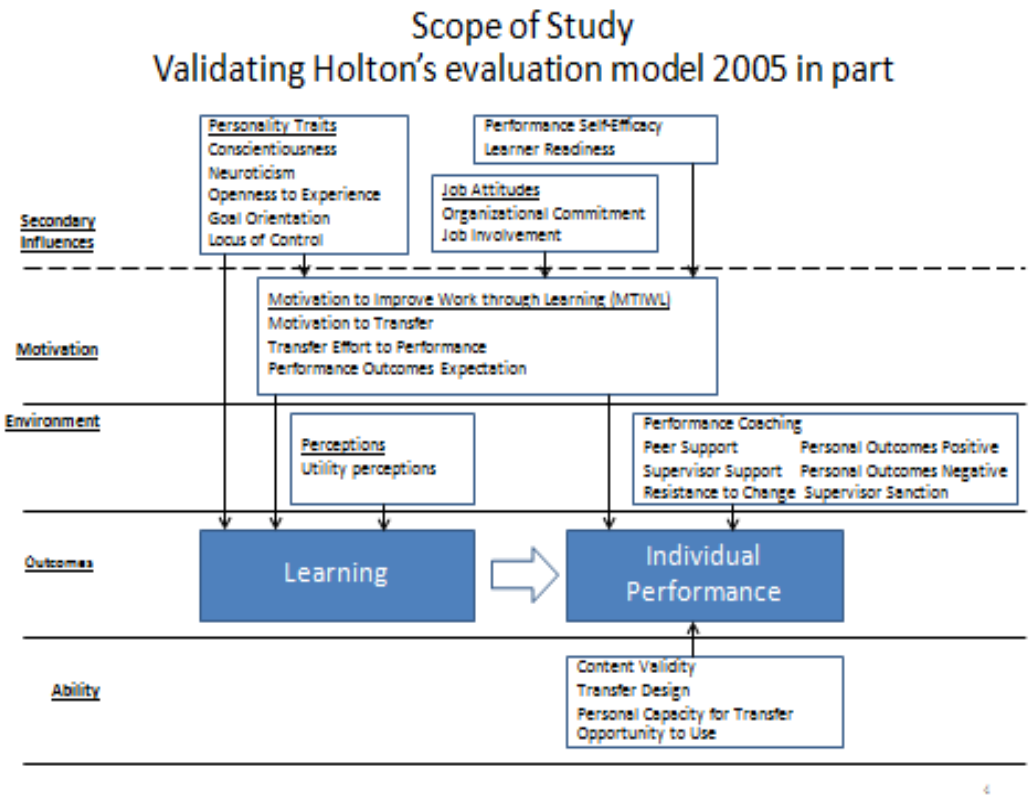

Figure 3.1 Holton's HRD Evaluation and Research Model

Source: Adapted from Holton, 2005.

CHAPTER 4

RESULTS

This chapter presents the results from the data analysis. First, the scale reliability is reported. Second, the EFA and CFA results are presented. Finally, the SEM was run on the data collected in order to investigate and analyze the causal-explanatory paths of the predicted relationships in the model. Two statistical program tools, SPSS statistics version 24 and SPSS AMOS version 24, were used to conduct the statistical analysis.

4.1 Sample

The participants in this study were 679 employees of the three large-sized commercial banks in Thailand. The sample consisted of 529 females (78%) and 150 males (22%). The largest age group of the participants was between 26-35 years (58%), with 557 participants (82%) that had a sales role and that had undertaken sales and service training courses. Most of them, 558 participants (82%), viewed the current training as having a work-related purpose and 84% of the participants had received training 1 to 3 times in the last twelve months. Table 4.1 illustrates the demographics of the participants.

Table 4.1 Demographics of the Participants

	Variable	**Number**	**%**
Gender	Male	150	22
	Female	529	78
Age	Less than 26	192	28
	26-35 years	397	58
	36-45 years	43	6

Table 4.1 (Continued)

	Variable	Number	%
	46-55 years	40	6
	56-65 years	7	1
Job	Management	12	2
	Sales	557	82
	Service	110	16
Course	Leadership	28	4
	Sales & Service	613	90
	Operations	38	6
Training Duration	1-3 days	400	59
	4-6 days	48	7
	7-9 days	231	34
Objective of this	Work related	558	82
training	Self-development	113	17
	Both	8	1
Training received in	1-3 times	568	84
12 months	4-6 times	76	11
	7-9 times	10	1
	10 or more times	25	4

4.2 Exploratory Factor Analysis Results

In this study, EFA was adopted in order to explore Holton's revised HRD evaluation and research model (2005) as there was evidence from the literature (Holton, 2005) suggesting that 8 new factors should be added to the HRD evaluation research and measurement model (Holton, 1996) and tested. Although the learning transfer system inventory measurement scale (Bates, Holton, & Hatala, 2012), a measurement developed from the HRD evaluation research and measurement model (Holton, 1996), had been validated by EFA and CFA by a number of researches from many counties (Holton, Bates, & Ruona, 2000; Kirwan & Birchall, 2006; Holton, Bates, Bookter, &

Yamkovenko, 2007; Bhatti & Kaur, 2010; Yamkovenko & Holton, 2010; Bates, Holton, & Hatala, 2012; Hutchins, Nimon, Bates, & Holton, 2013), 24 scale items corresponding to the eight modified factors, with a 3-item scale for each factor, (conscientiousness, neuroticism, openness to experience, goal orientation, locus of control, organization commitment, job involvement, utility perceptions) were integrated, and it was essential that the instrument be tested by EFA. The EFA results are shown in each training domain as follows.

4.2.1 The Specific Training Domain

The EFA results showed a good fit of Kaiser-Meyer-Olkin test (KMO = .906) with a significant Bartlett test of sphericity $\chi 2 = 13006.652$, $df = 630$, $p < .001$, $n = 679$). The number of factors in the specific training domain was reduced from 12 to 7 factors, as depicted in Table 4.2 and 4.3, describing 62.52% of the total variance.

The seven emerging factors in the specific training domain consisted of 1) transfer design, with a factor loading ranging from 0.688 to 0.796; 2) a supportive environment, with a factor loading ranging from 0.492 to 0.798; 3) motivation, with a factor loading ranging from 0.432 to 0.758; 4) lack of opportunity to apply, with a factor loading ranging from 0.436 to 0.846; 5) supervisor opposition, with a factor loading ranging from 0.747 to 0.806; 6) personal outcomes negative, with a factor loading ranging from 0.651 to 0.916; and 7) personal outcomes positive, with a factor loading ranging from 0.594 to 0.870.

Table 4.2 KMO and Bartlett's Test of the Specific Training Domain

KMO	**Measure of Sampling Adequacy**	**.906**
Bartlett's Test of Sphericity	Approx. Chi-Square	13006.652
	df	630
	Sig.	.000

Table 4.3 Total Variance Explained

Component	Total	Initial Eigenvalues	
		% of Variance	Cumulative %
1	9.924	27.566	27.566
2	4.440	12.332	39.898
3	2.060	5.721	45.619
4	1.851	5.143	50.761
5	1.589	4.414	55.175
6	1.471	4.086	59.261
7	1.173	3.259	62.520

Table 4.4 EFA of Specific Training Domain

Item	Factor						
	1	2	3	4	5	6	7
30 CV1	0.688						
31 CV2	0.761						
32 CV3	0.710						
33 TD1	0.770						
34 TD2	0.773						
35 TD3	0.796						
36 OUT3	0.748						
21 PS1		0.737					
22 PS2		0.798					
23 PS3		0.749					
24 SS1		0.625					
25 SS2		0.501					
29 SS3		0.492					
20 OUT2		0.522					
1 LR1			.692				

Table 4.4 (Continued)

Item	Factor						
	1	**2**	**3**	**4**	**5**	**6**	**7**
11 LR2			.475				
12 LR3			.573				
2 MT1			.758				
3 MT2			.719				
4 MT3			.709				
16 OUT1			.432				
5 UP1				0.780			
6 UP2				0.846			
7 UP3				0.841			
13 PCT1				0.554			
14 PCT2				0.476			
17 PCT3				0.436			
26 SO1					0.806		
27 SO2					0.747		
28 SO3					0.794		
15 PON1						0.651	
18 PON2						0.904	
19 PON3						0.916	
8 POP1							0.870
9 POP2							0.868
10 POP3							0.594

Seven factors emerged from the specific training domain as follows:

1) Content validity (CV) and transfer design (TD) were loaded together and the name transfer design (TD) was adopted,

2) Peer support (PS) and supervisor support (SS) were loaded together and renamed as supportive environment (SE),

3) Learner readiness (LR) and motivation to transfer (MT) were loaded together and name motivation to transfer (MT) was used,

4) Utility perceptions (UP) and personal capacity to transfer (PCT) were loaded together and renamed as lack of opportunity to apply (OA),

5) Supervisor opposition (SO),

6) Personal outcomes negative (PON) and

7) Personal outcomes positive (POP).

Noticeably, three items of the opportunity to use (OUT) factor were loaded separately on three different factors; one item loaded with the transfer design (TD), another loaded with the supportive environment (SE), and the other loaded with motivation to transfer (MT).

4.2.2 The General Training Domain

The EFA results of the general training domain showed a good fit of Kaiser-Meyer-Olkin test (KMO = .905) with a significant Bartlett test of sphericity $\chi 2$ = 11444.669, df = 630, p < .001, n = 679). The number of factors in the general training domain was reduced from 12 to 8 factors, as depicted in Table 4.5 and 4.6, describing 62.294% of the total variance.

The eight emerging factors in the general training domain consisted of 1) transfer effort to performance, with a factor loading ranging from 0.448 to 0.771; 2) conscientiousness, with factor loading ranging from 0.455 to 0.742; 3) employee commitment, with a factor loading ranging from 0.453 to 0.768; 4) resistance to change, with a factor loading ranging from 0.713 to 0.848; 5) openness to new experience, with a factor loading ranging from 0.442 to 0.762; 6) neuroticism, with a factor loading ranging from 0.750 to 0.852; 7) locus of control, with a factor loading ranging from 0.596 to 0.729; and 8) performance coaching, with a factor loading ranging from 0.482 to 0.601.

Table 4.5 KMO and Bartlett's Test

KMO	**Measure of Sampling Adequacy**	**.905**
Bartlett's Test of Sphericity	Approx. Chi-Square	11444.669
	Df	630
	Sig.	.000

Table 4.6 Total Variance Explained

Component	**Total**	**Initial Eigenvalues**	
		% of Variance	**Cumulative %**
1	9.960	27.668	27.668
2	3.602	10.006	37.674
3	2.026	5.629	43.302
4	1.655	4.596	47.899
5	1.551	4.308	52.207
6	1.338	3.715	55.922
7	1.193	3.314	59.237
8	1.101	3.058	62.294

Table 4.7 EFA of General Training Domain

Item	**Factor**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
49PSE2	0.448							
50PSE3	0.471							
37TEP1	0.699							
38TEP2	0.743							
41TEP3	0.771							
39POE1	0.606							

Table 4.7 (Continued)

Item	Factor							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
40POE2	0.761							
42POE3	0.644							
55 C1		0.552						
59 C2		0.742						
60 C3		0.697						
63 JI3		0.455						
52 OC1			0.615					
53 OC2			0.768					
54 OC3			0.762					
61 JI1			0.527					
62 JI2			0.453					
43 RC1				0.713				
44 RC2				0.848				
45 RC3				0.826				
67OTE1					0.442			
68OTE2					0.699			
69OTE3					0.762			
70 GO1					0.618			
71 GO2					0.553			
72 GO3					0.537			
64 N1						0.814		
65 N2						0.852		
66 N3						0.750		
56LOC1							.729	
57LOC2							.694	
58LOC3							.596	
46 PC1								.581

Table 4.7 (Continued)

Item	Factor							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
47 PC2								.601
51 PC3								.482
48 PSE1								.507

Eight factors emerged from the general training domain as follows:

1) Personal self-efficacy, transfer effort to performance, and personal outcomes expectation were loaded together and the name transfer effort to performance (TEP) was adopted,

2) Conscientiousness and one item of job involvement were loaded together and name conscientiousness was adopted,

3) Organization commitment and two items of job involvement were loaded together and renamed as Employee Commitment (EC),

4) Openness to new experience and goal orientation were loaded together and the name openness to new experience was adopted,

5) Resistance to change,

6) Neuroticism,

7) Locus of control and

8) Performance coaching.

The emerged factors of the conceptual model are illustrated in the table below.

Table 4.8 Emerged Factors from the EFA

Domain of Training	Emerged Factor	Item	Former Factor
Specific	1. Transfer Design (TD)	CV1, CV2, CV3, TD1,	-Content Validity -Transfer Design -Opportunity to Use

Table 4.8 (Continued)

Domain of Training	Emerged Factor	Item	Former Factor
		TD2, TD3, OUT3	
	2. Supportive Environment (SE)	PS1, PS2, PS3, SS1, SS2, SS3, OUT2	-Peer Support -Supervisor Support -Opportunity to Use
	3. Motivation (MT)	LR1, LR2, LR3, MT1, MT2, MT3, OUT1	-Learner Readiness -Motivation to Transfer -Opportunity to Use
	4. Lack of Opportunity to Apply (OA)	UP1, UP2, UP3, PCT1, PCT2, PCT3	-Utility Perceptions -Personal Capacity to Transfer
	5. Supervisor Opposition (SO)	SO1, SO2, SO3	-Unchanged
	6. Personal Outcomes Negative (PON)	PON1, PON2, PON3	
	7. Personal Outcomes Positive (POP)	POP1, POP2, POP3	
General	1. Transfer Effort to Performance (TEP)	PSE2, PSE3, TEP1, TEP2, TEP3, POE1, POE2, POE3	-Performance Self-Efficacy -Transfer Effort to Performance -Performance Outcome Expectation
	2. Conscientiousness (C)	C1, C2, C3, JI3	-Conscientiousness -Job Involvement

Table 4.8 (Continued)

Domain of Training	Emerged Factor	Item	Former Factor
	3. Employee Commitment (EC)	OC1, OC2, OC3, JI1, JI2	-Organization Commitment -Job Involvement
	4. Resistance to Change (RC)	RC1, RC2, RC3	-Unchanged
	5. Openness to Experience (OTE)	OTE1, OTE2, OTE3, GO1, GO2, GO3	-Openness to Experience -Goal Orientation
	6. Neuroticism (N)	N1, N2, N2	-Unchanged
	7. Locus of Control (LOC)	LOC1, LOC2, LOC3	
	8. Performance Coaching (PC)	PC1, PC2, PC3, PSE1	-Performance Coaching -Performance Self-Efficacy

It should be noted that item number 48 (PSE1), which originally belonged to performance self-efficacy, was loaded into performance coaching with a .507 loading. However, when the content of the item was reviewed, it was not aligned with the objective measured in that factor. The item number 48 (PSE1) was deleted. Therefore, 71 items, 15 factors, were further tested using CFA. The table below illustrates the item content of variable 48 compared to those measured in the performance coaching factor (variable 46, 47 and 51).

Table 4.9 Variable 48 Item Description

Category	Factor	Item	Description
Environment	Performance Coaching	V46	People often make suggestions about how I can improve my job performance.
		V47	I get a lot of advice from others about how to do my job better.
		V51	People often tell me things to help me improve my job performance.
Self-efficacy	Performance Self-efficacy	V48	I never doubt my ability to use newly learned skills on the job.

In summary, the EFA results revealed that the factors in the specific training domain were reduced from 12 to 7 factors and that those in the general training domain were reduced from 12 to 8 factors; altogether 15 factors. The item loading in each construct in both the specific training domain and the general training domain demonstrated value greater than 0.4 and were retained for further CFA analysis, except for variable item number 48. As a result, 71 items were retained.

4.3 CFA Results

CFA evaluates a priori hypotheses and is largely driven by theory. CFA analysis requires the researcher to hypothesize, in advance, the number of factors, whether or not these factors are correlated, and which items/measures load onto and reflect which factors. As such, in contrast to exploratory factor analysis, where all loadings are free to vary, CFA allows for the explicit constraint of certain loadings to be zero (Vanichbancha, 2013).

The model for performing the CFA in this study emerged from the EFA results of the factors from the revised HRD evaluation and research model (Holton, 2005), as depicted in figure 4.1, consisting of 6 constructs: 1) traits, 2) employee commitment, 3)

motivation to improve work through learning, 4) lack of opportunity to use, 5) supportive environment, 6) and transfer design. Noticeably, in Holton's revised model (Holton, 2005), in the learning and individual performance part, there were 7 constructs in the model; however, as the EFA was performed, a construct of 2 factors, namely, learner readiness and performance self-efficacy variable 2 and 3, was merged with motivation and transfer effort to performance, whereas performance self-efficacy variable 1 was merged with performance coaching, leaving the 6 constructs in the EFA emerged model to be tested with the CFA.

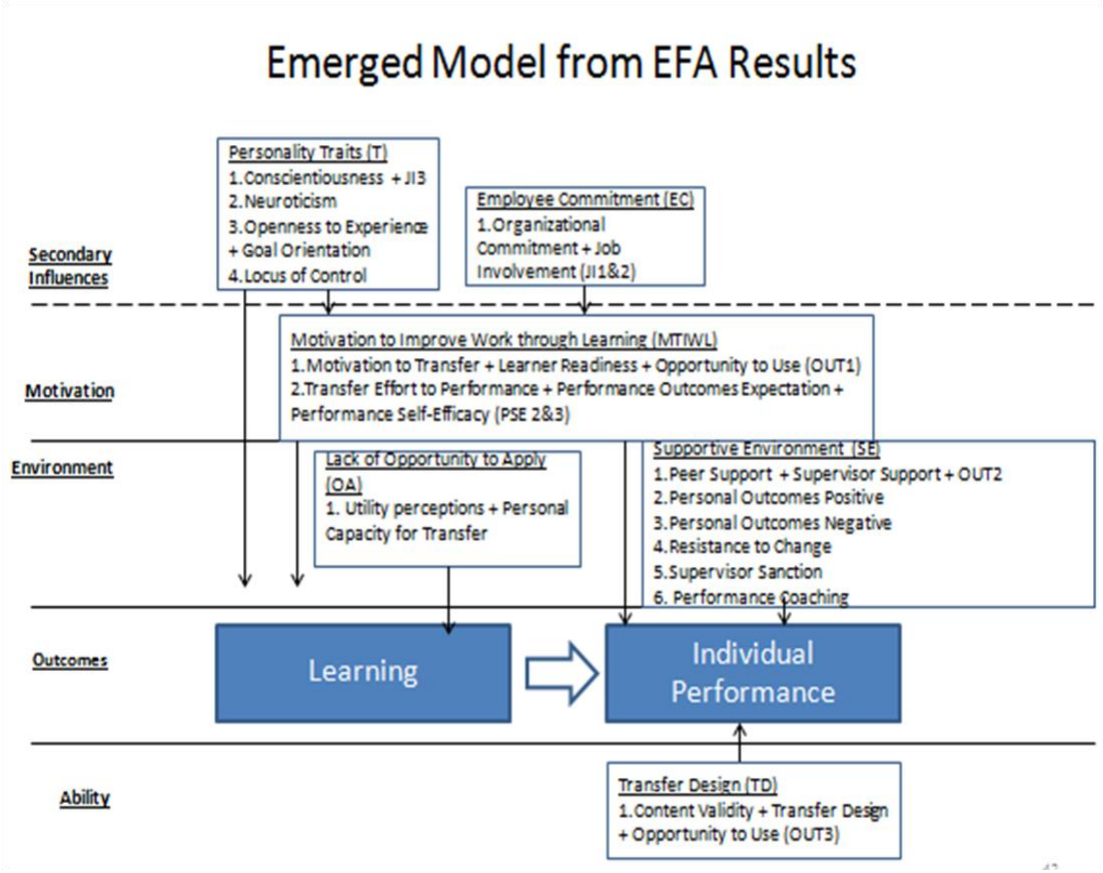

Figure 4.1 Emerged Constructs and Model from the EFA

Table 4.10 Constructs of the Conceptual Model

Dimension	Construct	Factor
Secondary Influences	1. Traits (T)	1. Conscientiousness + Job Involvement3 2. Neuroticism 3. Openness to Experience + Goal Orientation 4. Locus of Control
	2. Employee Commitment (EC)	1. Organization Commitment + Job Involvement1 & 2
Motivation	3. Motivation to Improve Work through Learning (MTIWL)	1. Motivation to Transfer + Learner Readiness + Opportunity to Use1 2. Transfer Effort to Performance + Performance Outcomes Expectations + Performance Self-Efficacy2 & 3
Environment	4. Lack of Opportunity to Use (OA)	1. Utility Perceptions
	5. Supportive Environment (SE)	1. Peer Support + Supervisor Support + Opportunity to Use2 2. Personal Outcomes Positive 3. Personal Outcomes Negative 4. Resistance to Change

Table 4.10 (Continued)

Dimension	Construct	Factor
		5. Supervisor Opposition
		6. Performance Coaching
Ability	6. Transfer Design (TD)	1. Content Validity +
		Transfer Design +
		Opportunity to Use3

4.3.1 CFA Results

The CFA results confirmed that the six constructs emerged from the EFA, as illustrated in Table 4.11. The six constructs consisted of 1) traits, 2) employee commitment, 3) motivation to improve work through learning, 4) lack of opportunity to apply, 5) supportive environment, and 6) transfer design. The construct validity and confirmatory factor analysis results for the six constructs are discussed in turn.

Table 4.11 Confirmatory Factor Analysis Results for the Six Emerged Constructs

Absolute Fit Indices	Traits	Employee Commitment	Motivation	Lack of Opportunity to Apply	Environment	Transfer Design
CMIN/df	3.037	0.404	3.133	2.491	3.091	3.089
RMR	0.061	0.006	0.024	0.023	0.058	0.012
GFI	0.947	0.999	0.953	0.992	0.925	0.988
AGFI	0.924	0.996	0.931	0.973	0.901	0.963
NFI	0.921	0.999	0.948	0.991	0.904	0.990
RFI	0.901	0.996	0.933	0.978	0.904	0.978
IFI	0.946	1.002	0.964	0.995	0.944	0.994
TLI	0.932	1.006	0.953	0.987	0.933	0.985
CFI	0.945	1.000	0.964	0.995	0.944	0.994
RMSEA	0.055	0.000	0.056	0.047	0.056	0.056
Level of Fit	Satisfactory	Good	Satisfactory	Good	Satisfactory	Satisfactory

4.3.2 Construct Validity of Traits

The traits construct consisted of 4 factors: conscientiousness, neuroticism, openness to experience, and locus of control. The results of the correlations showed that all of the observed variables had a relationship among them. The construct could measure Traits as a coefficient correlation that ranged from .115 to .704 at a significance level of 0.01. The strongest relationship was between conscientiousness and openness to experience at .704, followed by neuroticism and locus of control at .463, while conscientiousness and neuroticism was at .281, conscientiousness and locus of control was at .213, and neuroticism and openness to experience was at .204. Locus of control and openness to experience was the weakest at .115.

Table 4.12 Coefficient Correlations for Traits

Variable	Locus of Control	Openness to Experience	Neuroticism	Conscientiousness
Locus of Control	1.000			
Openness to Experience	.115	1.000		
Neuroticism	.463	.204	1.000	
Conscientiousness	.213	.704	.281	1.000

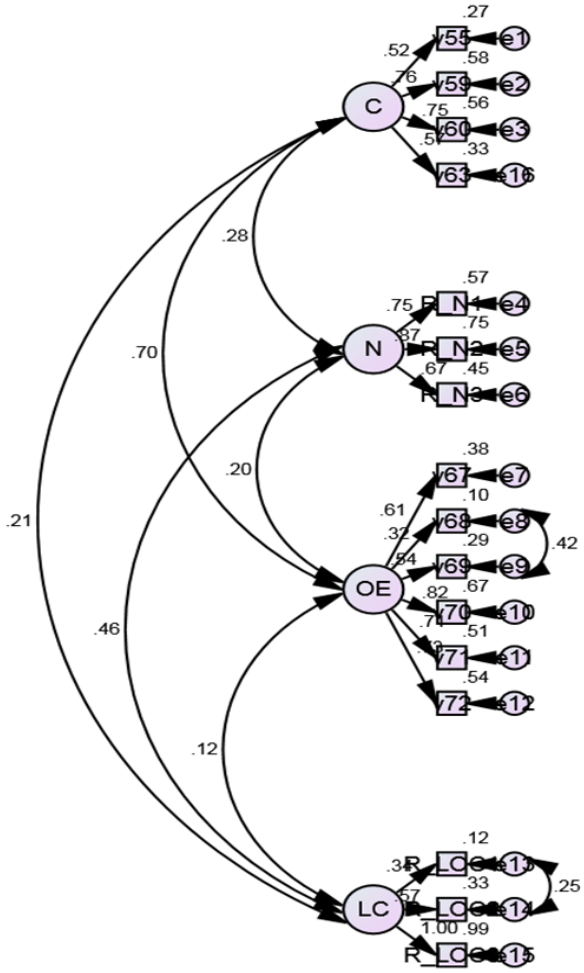

Figure 4.2 Coefficient Correlations for the Traits Construct

4.3.3 Confirmatory Factor Analysis of Traits

The results of the confirmatory factor analysis of the traits variables, as illustrated in table 4.12 and figure 4.2, revealed that the measurement model fit the empirical data by CMIN/df = 3.037, *df* = 96, *p* = .000, GFI = .947, AGFI = .924, RMSEA = .055. The CFA results confirmed that the Traits measurement model satisfactorily fit the empirical data.

Table 4.13 Confirmatory Factor Analysis of Traits

Variable	Factor Loading			R^2	Factor Score Regression
	b	***SE***	***β***		
Locus of Control	1.000	n.a.	.072	.005	.000
Openness to Experience	6.148	3.475	.671	.451	.019
Neuroticism	3.432	1.816	.238	.056	.003
Conscientiousness	7.082	3.984	.818	.669	.04
CMIN/df = 3.037, *df* = 96, *p* = .000, GFI = .947, AGFI = .924, RMSEA = .055, RMR = .061					

Note: ***p<0.01*

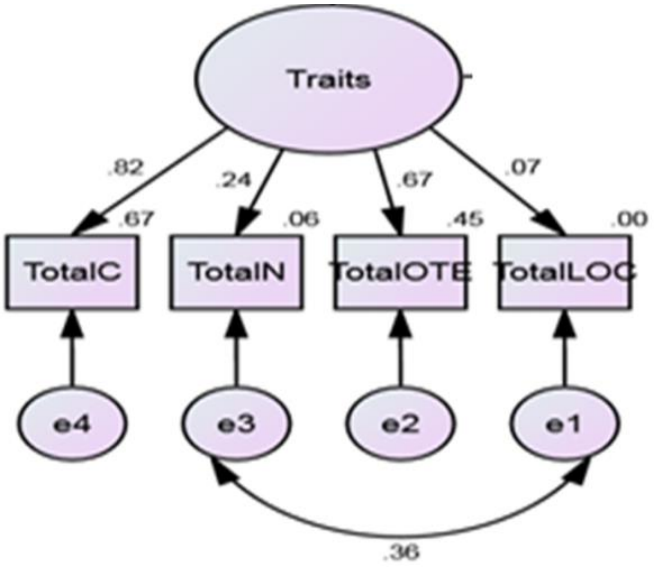

Figure 4.3 Construct Validity of Traits Construct

According to table 4.13, the confirmatory factor analysis of traits disclosed that all standardized factor loadings were positive, ranging from 0.07 to .82, with a significance level of 0.01; the strongest being conscientiousness (β = .82), openness to experience (β = .67), neuroticism (β = .24), and the weakest being locus of control (β =

.07). Moreover, the proportions of explained variance of traits were arranged in order from the greatest to the least as follows: conscientiousness ($R^2 = 0.67$), openness to experience ($R^2 = 0.45$), neuroticism ($R^2 = 0.06$), and locus of control ($R^2 = 0.01$).

Employee commitment was a combination of organization commitment and job involvement factors. The results of the correlations showed that all of the observed variables had a relationship among them. The construct measured employee commitment as a coefficient correlation that ranged from .49 to .77 at a significance level of 0.75. The strongest relationships were the organization commitment variables 2, 3 and 1 at 0.77, 0.70, 0.68, followed by the job involvement variables 1 and 2 at 0.63 and 0.49.

Table 4.14 Coefficient Correlations for the Employee Commitment Construct

Variable	**Organization Commitment**	**JI Variable 2**	**JI Variable 1**	**OC Variable 2**	**OC Variable 3**	**OC Variable 1**
Organization Commitment	1.000					
JI variable 2	0.49	1.000				
JI variable 1	0.63	0.60	1.000			
OC variable 2	0.70	0.34	0.44	1.000		
OC variable 3	0.77	0.38	0.48	0.54	1.000	
OC variable 1	0.68	0.33	0.43	0.32	0.53	1.000

Note: JI Job Involvement, OC Organization Commitment

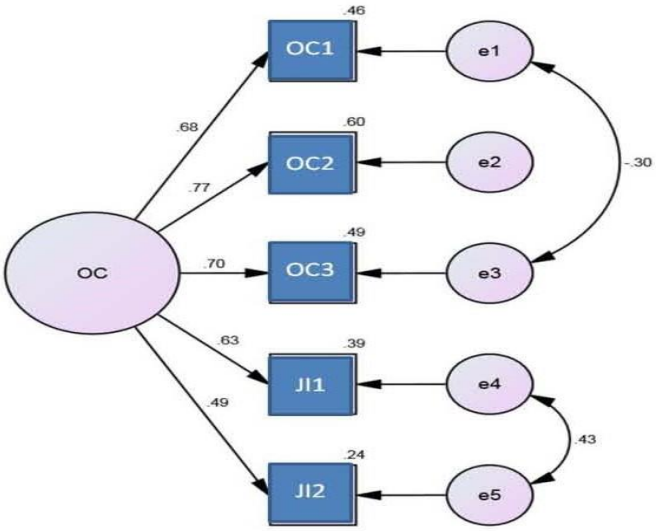

Figure 4.4 Coefficient Correlations for the Employee Commitment Construct

4.3.4 Confirmatory Factor Analysis of Employee Commitment

The results of the confirmatory factor analysis of the employee commitment variables as illustrated in table 4.15 revealed that the measurement model fit the empirical data by CMIN/df = 0.404, *df* = 3, *p* = .75, GFI = .999, AGFI = .996, RMSEA = .000. The CFA results confirmed that the Employee Commitment measurement model had a good fit with the empirical data.

Table 4.15 Confirmatory Factor Analysis of Employee Commitment

Variable	Factor Loading			R^2	Factor Score Regression
	b	***SE***	***β***		
OC variable 1	1.000	n.a.	0.68	0.47	0.22
OC variable 2	1.216	0.09	0.77	0.60	0.21
OC variable 3	1.133	0.089	0.70	0.49	0.21
JI variable 1	0.768	0.061	0.63	0.40	0.13
JI variable 2	0.661	0.065	0.49	0.24	0.04
CMIN/df = 0.404, *df* = 3, *p* = .75, GFI = .999, AGFI = .996, RMSEA = .000, RMR = .006					

Note: ***p>0.01*

According to table 4.15, the confirmatory factor analysis of employee commitment disclosed that all standardized factor loadings were positive, ranging from 0.49 to 0.77, with a significance level of 0.75, with the strongest being organization commitment variable 2 (β = .77), organization commitment variable 3 (β = .70), organization commitment variable 1 (β = .68), job involvement variable 1 (β = .63), and the weakest being job involvement variable 2 (β = .49). Moreover, the proportions of explained variance of employee commitment were arranged in order from the greatest to the least as follows: organization commitment variables 1 to 3 (R^2 = 0.22, 0.21, and 0.21 respectively), and job involvement variables 1 and 2 (R^2 = 0.13, 0.04 respectively).

4.3.5 Construct Validity of Motivation to Improve Work through Learning

The motivation to improve work through learning construct was the combination of six factors merged into two factors: motivation to improve and transfer effort to performance. Motivation to improve was formed by the following factors: learner readiness, motivation to transfer, and opportunity to use (variable 1), where transfer effort to performance was formed by performance self-efficacy, transfer effort to performance (variable 1 and 3), and performance outcomes expectations. The correlations of the latent variables in the MTIWL construct ranged from 0.215 to 0.788 at a significance level of 0.00. The correlations between motivation to improve and transfer effort to performance was at 0.769.

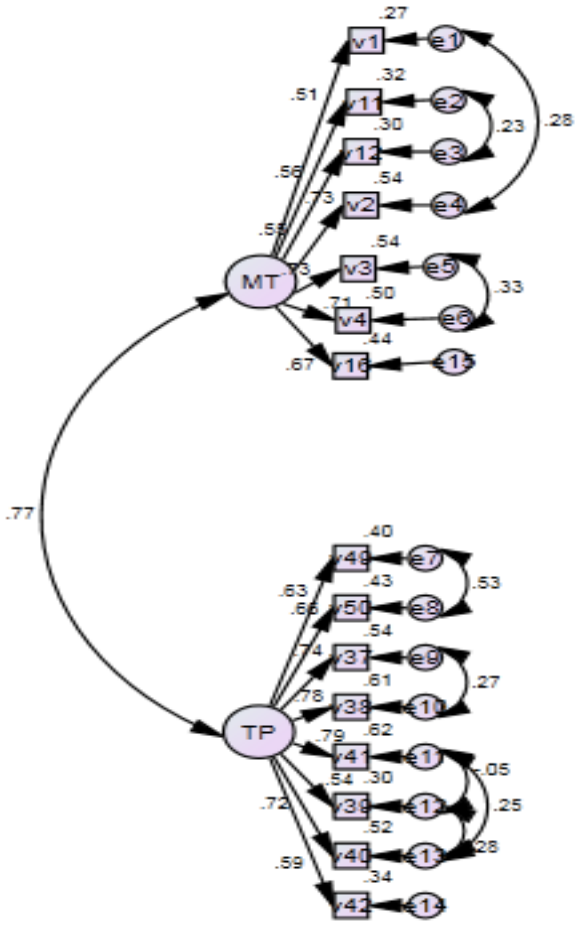

Figure 4.5 Coefficient Correlations for the Motivation to Improve Work Through Learning Construct

4.3.6 Confirmatory Factor Analysis of Motivation to Improve Work Through Learning

The results of the confirmatory factor analysis of motivation to improve work through the learning variables, as illustrated in table 4.16, revealed that the measurement model fit the empirical data by CMIN/df = 3.133, *df* = 81, *p* = .000, GFI = .953, AGFI = .931, RMSEA = .056. The CFA results confirmed that the motivation to improve work through learning measurement model had a good fit with the empirical data.

Table 4.16 Confirmatory Factor Analysis of Motivation to Improve Work Through Learning

Variable	Factor Loading			R^2	Factor Score Regression
	b	***SE***	***β***		
Transfer Effort to Performance	1.000	n.a.	0.85	0.747	0.219
Motivation to Improve	0.787	0.036	0.72	0.514	0.10
CMIN/df = 3.133, *df* = 81, *p* = .000, GFI = .953, AGFI = .931, RMSEA = .056, RMR = .024					

Note: ***p<0.01*

According to table 4.16, the confirmatory factor analysis of the motivation to improve work through learning disclosed that all standardized loadings as a beta weight were positive, ranging from 0.215 to 0.788 with a significance level of 0.00. The correlations between motivation to improve and transfer effort to performance was at 0.769 (β = .77).

4.3.7 Construct Validity of Lack of Opportunity to Apply

The lack of opportunity to apply construct was derived from two factors: utility perceptions and personal capacity to transfer. The results of the correlations showed that all of the observed variables had a relationship among them. The construct measured Lack of Opportunity to Apply as a coefficient correlation that ranged from .36 to .91 at a significance level of 0.021. The strongest relationship was utility perceptions variables 2, 3, and 1 at 0.91, 0.88, 0.68 respectively, followed by personal capacity to transfer variables 1, 3 and 2 at 0.50, 0.47 and 0.36.

Table 4.17 Coefficient Correlations for the Lack of Opportunity to Apply Construct

Variable	Perceptions	PCT v 3	PCT v 2	PCT v 1	UP v 3	UP v 2	UP v 1
Perceptions	1.000						
PCT v 3	0.47	1.000					
PCT v 2	0.36	0.36	1.000				
PCT v 1	0.50	0.53	0.48	1.000			
UP v 3	0.88	0.41	0.32	0.44	1.000		
UP v 2	0.91	0.43	0.33	0.45	0.80	1.000	
UP v 1	0.68	0.32	0.24	0.34	0.60	0.62	1.000

Note: PCT Personal Capacity to Transfer, UP Utility Perceptions

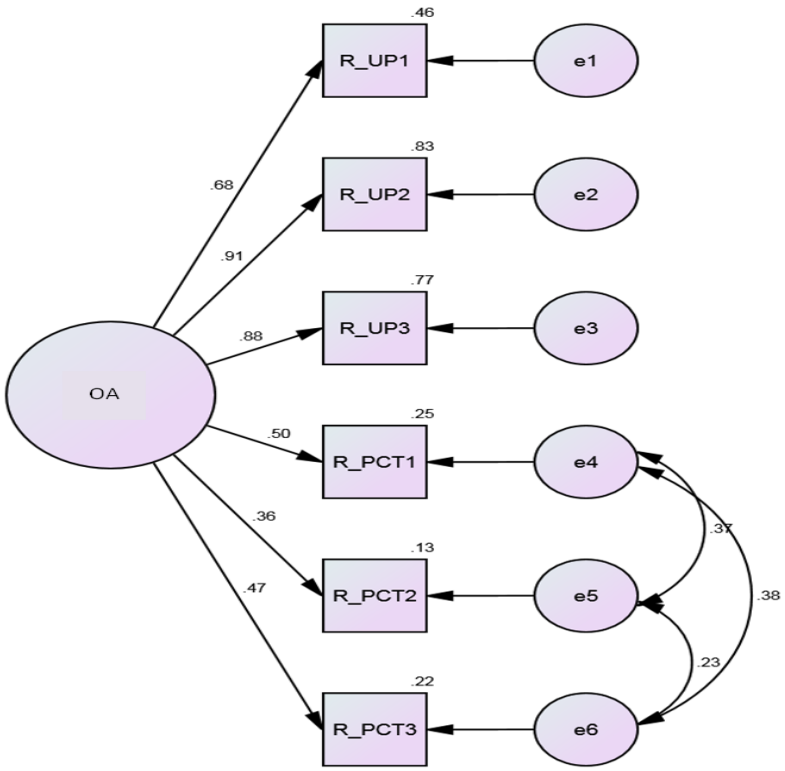

Figure 4.6 Coefficient Correlations for the Lack of Opportunity to Apply Construct

4.3.8 Confirmatory Factor Analysis of Lack of Opportunity to Apply

The results of confirmatory factor analysis of lack of opportunity to apply variables as illustrated in table 4.18 and figure 4.6 revealed that the measurement model fit with the empirical data by CMIN/df = 2.491, *df* = 6, *p* = .021, GFI = .992, AGFI = .973, RMSEA = .047. The CFA results confirmed lack of opportunity to apply measurement model a good fit with the empirical data.

Table 4.18 Confirmatory Factor Analysis of Lack of Opportunity to Apply

Variable	Factor Loading			R^2	Factor Score
	b	***SE***	***β***		**Regression**
UP variable 1	1.000		0.677	0.458	0.078
UP variable 2	0.961	0.047	0.914	0.835	0.486
UP variable 3	0.932	0.048	0.88	0.775	0.342
PCT variable 1	0.652	0.055	0.497	0.247	0.031
PCT variable 2	0.544	0.062	0.36	0.13	0.011
PCT variable 3	0.619	0.056	0.465	0.217	0.027
CMIN/df = 2.491, *df* = 6, *p* = .021, GFI = .992, AGFI = .973, RMSEA = .047, RMR = .023					

Note: ***p>0.01*

According to table 4.18, the confirmatory factor analysis of lack of opportunity to apply disclosed that all standardized loadings as a beta weight were positive, ranging from 0.36 to 0.914 with a significance level of 0.021, the strongest being utility perceptions variable 2 (β = .914), utility perceptions variable 3 (β = .88), utility perceptions variable 1 (β = .68), personal capacity to transfer variable 1 (β = .48), personal capacity to transfer variable 3 (β = .47), and the weakest being personal capacity to transfer variable 2 (β = .36). Moreover, the proportions of explained variance of lack of opportunity to apply were arranged in order from the greatest to the least as follows: utility perceptions variables 2, 3, and 1 (R^2 = 0.84, 0.78, and 0.46), and personal capacity to transfer variables 1, 3 and 2 (R^2 = 0.25, 0.22, and 0.13) respectively.

4.3.9 Construct Validity of Environment

The environment construct was derived from 6 factors: supportive environment, resistance to change, performance coaching, personal outcomes negative, personal outcomes positive, and supervisor opposition. The results of the correlations showed that all of the observed variables had a relationship among them. The construct measured environment as a coefficient correlation that ranged from -0.147 to 0.7 with a significance level of 0.000. The strongest relationship was between supportive environment and performance coaching.

Table 4.19 Coefficient Correlations for the Environment Construct

Variable	SO	POP	PON	PC	RC	SE
Supervisor Opposition (SO)	1.000					
Personal Outcomes Positive (POP)	0.059	1.000				
Personal Outcomes Negative (PON)	0.285	-0.147	1.000			
Performance Coaching (PC)	0.126	0.391	-0.123	1.000		
Resistance to Change (RC)	0.479	0.062	0.138	0.343	1.000	
Supportive Environment (SE)	0.216	0.413	-0.127	0.699	0.318	1.000

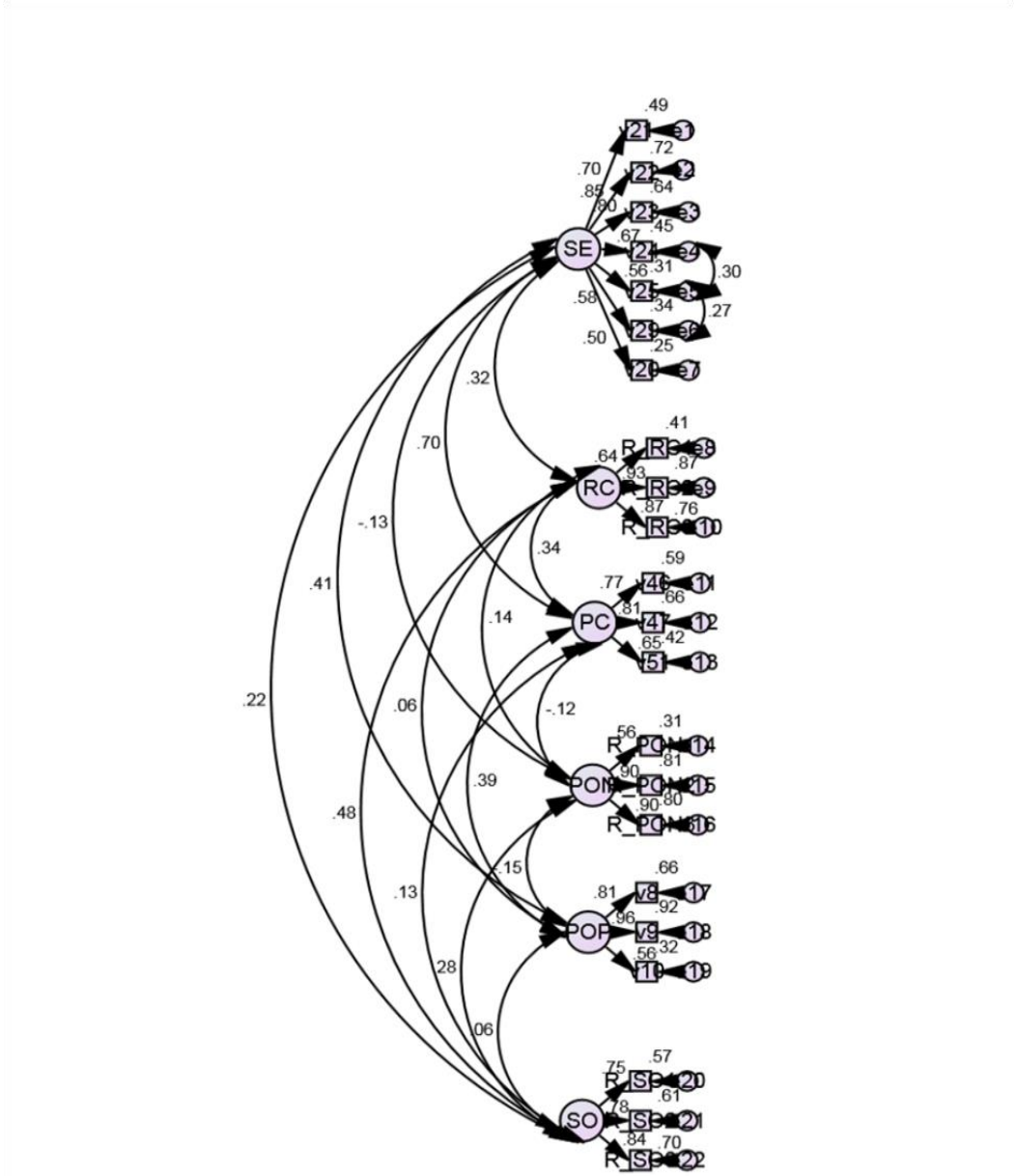

Figure 4.7 Coefficient Correlations for the Environment Construct

4.3.10 Confirmatory Factor Analysis of Environment

The results of the confirmatory factor analysis of the environment variables, as illustrated in table 4.20, revealed that the measurement model fit the empirical data by CMIN/df = 3.091, *df* = 192, *p* = .000, GFI = .925, AGFI = .901, RMSEA = .056. The CFA results confirmed that the environment measurement model had a good fit with the empirical data.

Table 4.20 Confirmatory Factor Analysis of Environment

Variable	Factor Loading			R^2	Factor Score Regression
	b	***SE***	***β***		
Supportive Environment	1.000	n.a.	0.841	0.708	0.314
Personal Outcomes Positive	0.792	0.057	0.549	0.302	0.067
Personal Outcomes Negative	-0.373	0.077	-0.195	0.038	-0.017
Supervisor Opposition	0.228	0.061	0.137	0.019	0.035
Resistance to Change	0.345	0.079	0.178	0.032	-0.031
Performance Coaching	0.935	0.046	0.729	0.532	0.164
CMIN/df = 3.091, *df* = 192, *p* = .000, GFI = .925, AGFI = .901, RMSEA = .056, RMR = .058					

Note: ***p<0.01*

According to table 4.20, the confirmatory factor analysis of environment disclosed that all standardized loadings as a beta weight ranged from -0.2 to 0.84 with a significance level of 0.000, the strongest being supportive environment (β = .84), which was the EFA combination from the factors of peer support, supervisor support, and opportunity to use (variable 2), followed by performance coaching (β = .73) and personal outcomes positive (β = .55). The weakest loading was personal outcomes negative (β = -0.2). Similarly, the proportions of the explained variance of environment were arranged in order from the greatest to the least as follows: supportive environment (R^2 = 0.71), performance coaching (R^2 = 0.53), and personal outcomes positive (R^2 = 0.3).

4.3.11 Construct Validity of Transfer Design

The transfer design construct was derived from the EFA analysis of three factors, which were content validity, transfer design, and opportunity to use. The results of the correlations showed that all of the observed variables had a relationship among them. The construct measured transfer design as a coefficient correlation that ranged from 0.62 to 0.88 with a significance level of 0.001. The strongest relationship was between supportive environment and performance coaching.

Table 4.21 Coefficient Correlations for the Transfer Design Construct

Variable	TD	CV 1	CV 2	CV 3	TD 1	TD 2	TD 3	OUT 3
Transfer Design (TD)	1.000							
Opportunity to Use (OUT 3)	0.782	1.000						
Transfer Design (TD 3)	0.805	0.74	1.000					
Transfer Design (TD v 2)	0.772	0.604	0.707	1.000				
Transfer Design (TD 1)	0.794	0.621	0.639	0.613	1.000			
Content Validity (CV 3)	0.721	0.564	0.54	0.557	0.573	1.000		
Content Validity (CV 2)	0.722	0.565	0.581	0.558	0.574	0.671	1.000	
Content Validity (CV 1)	0.656	0.513	0.528	0.507	0.521	0.473	0.684	1.000

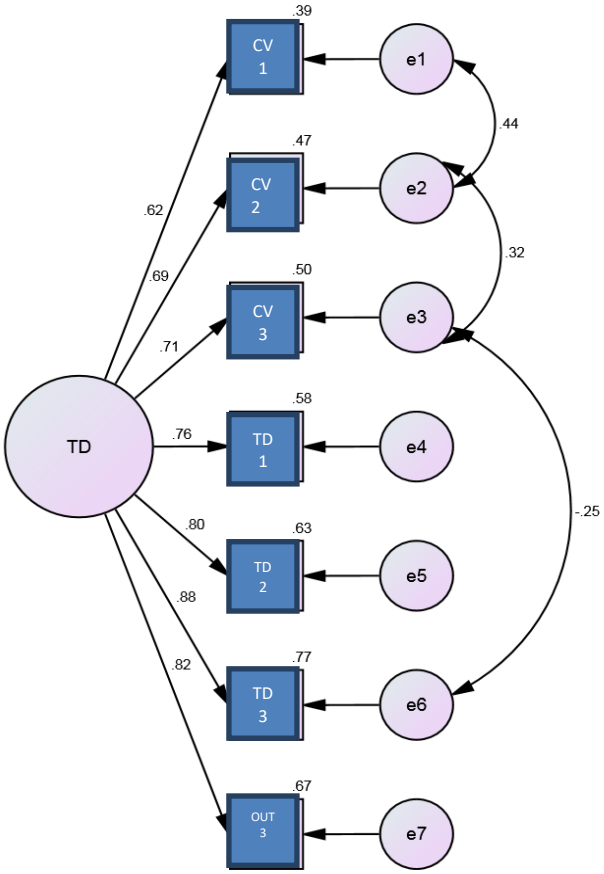

Figure 4.8 Coefficient Correlations for the Transfer Design Construct

4.3.12 Confirmatory Factor Analysis of Transfer Design

The results of the confirmatory factor analysis of the transfer design variables, as illustrated in table 4.22, revealed that the measurement model fit the empirical data by CMIN/df = 3.089, *df* = 9, *p* = .001, GFI = .988, AGFI = .963, RMSEA = .056. The CFA results confirmed that the transfer design measurement model had a good fit with the empirical data.

Table 4.22 Confirmatory Factor Analysis of Transfer Design

Variable	Factor Loading			R^2	Factor Score Regression
	b	***SE***	***β***		
Content Validity1	1.000	n.a.	0.656	0.431	0.070
Content Validity2	1.021	0.049	0.722	0.522	0.055
Content Validity3	0.985	0.061	0.721	0.52	0.122
Transfer Design1	0.991	0.057	0.794	0.631	0.203
Transfer Design2	0.994	0.060	0.772	0.596	0.144
Transfer Design3	1.010	0.061	0.805	0.648	0.147
Opportunity to Use3	1.005	0.060	0.782	0.611	0.143
CMIN/df = 3.089, *df* = 9, *p* = .001, GFI = .988, AGFI = .963, RMSEA = .056, RMR = .012					

Note: ***p<0.01*

According to table 4.22, the confirmatory factor analysis of transfer design disclosed that all standardized loadings as a beta weight ranged from 0.66 to 0.81, with a significance level of 0.001, the strongest being transfer design (variable 3) (β = .81). The weakest loading was content validity (variable 1) (β = 0.66). Moreover, the proportions of the explained variance of transfer design were arranged in order from the greatest to the least as follows: transfer design (variable 1, 3 and 2) (R^2 = 0.2, 0.15 and 0.14), followed by opportunity to use (variable 3) (R^2 = 0.14), and content validity (variable 3, 1 and 2) (R^2 = 0.12, 0.07, and 0.06).

4.4 Structural Equation Modeling of the Learning Transfer Conceptual Model

The results of the structural equation modeling of the learning transfer conceptual model by using the maximum likelihood revealed an acceptable fit, according to the fit indices of CMIN/df = 4.339, df = 85, p = .000, CFI = .938, GFI = .938, AGFI = .901, RMSEA = 0.07 and RMR = .063, as depicted below. The statistical values of the conceptual model revealed an acceptable fit of the model and the empirical data.

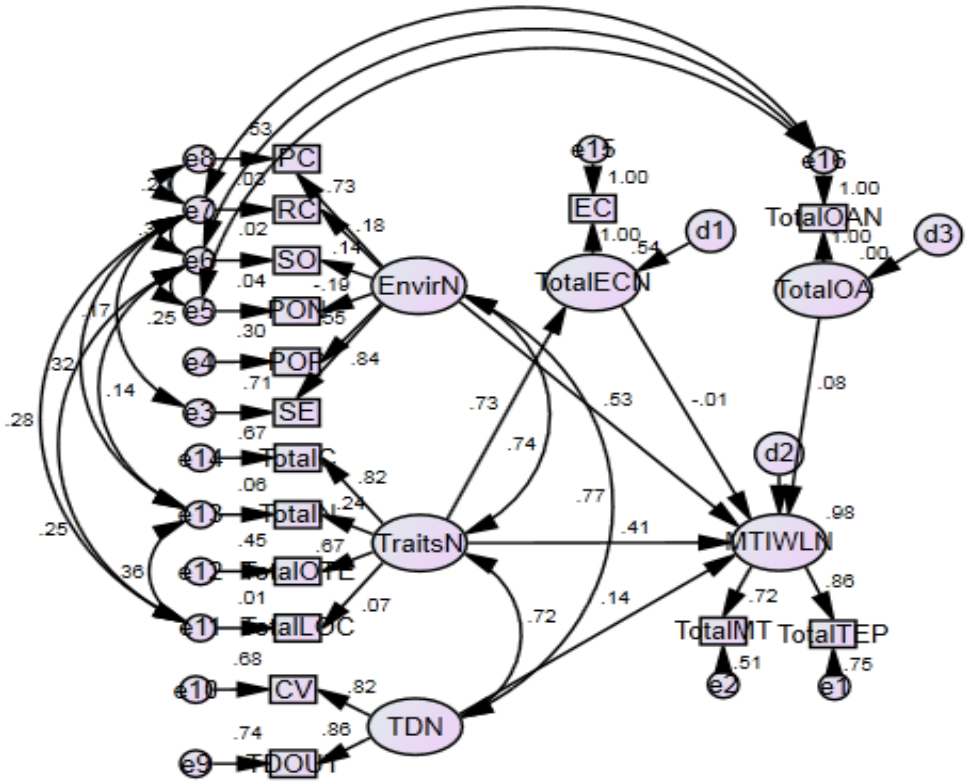

Figure 4.9 SEM Results of the Conceptual Model

Table 4.23 Structural Model Testing: Results of the Conceptual Model

Absolute Fit Indices	Good Model Fit Range	Satisfactory Model Fit Range	Value of Model Studied	Level of Fit
CMIN/df	0 ≤ CMIN/df ≤ 3	3 ≤ CMIN/df ≤ 5	4.339	Satisfactory
RMR	0 ≤ RMR ≤ 0.05	0.05 ≤ RMR ≤ 0.10	0.063	Satisfactory
GFI	0.95 ≤ GFI ≤ 1.00	0.9 ≤ GFI ≤ 0.95	0.938	Satisfactory
AGFI	0.95 ≤ AGFI ≤ 1.00	0.9 ≤ AGFI ≤ 0.95	0.901	Satisfactory
NFI	0.95 ≤ NFI ≤ 1.00	0.9 ≤ NFI ≤ 0.95	0.921	Satisfactory
RFI	0.95 ≤ RFI ≤ 1.00	0.9 ≤ RFI ≤ 0.95	0.889	Good
IFI	0.95 ≤ IFI ≤ 1.00	0.9 ≤ IFI ≤ 0.95	0.938	Satisfactory
TLI	0.95 ≤ TLI ≤ 1.00	0.9≤ TLI ≤ 0.95	0.912	Good
CFI	0.95 ≤ CFI ≤ 1.00	0.9 ≤ CFI ≤ 0.95	0.938	Satisfactory
RMSEA	0 ≤ RMSEA ≤ 0.05	0.05 < RMSEA ≤ 0.08	0.07	Satisfactory

The table below describes the Standardized Regression Weights of the structural model as follows:

Table 4.24 Standardized Regression Weights of the Structural Model

			Estimate
Employee Commitment	←	Traits	.734
Motivation to Improve Work through Learning	←	Environment	.528
Motivation to Improve Work through Learning	←	Traits	.406
Motivation to Improve Work through Learning	←	Transfer Design	.144
Motivation to Improve Work through Learning	←	Employee Commitment	-.006
Motivation to Improve Work through Learning	←	Lack of Opportunity to Apply	.085

Table 4.24 reveals the standardized regression weights between the latent variables in the conceptual model. Traits had a very strong impact on employee commitment (0.73), while environment had a relatively strong impact on motivation to improve work through learning (0.53), followed by traits (0.41), and transfer design (0.144). Lack of opportunity to apply had very little impact on motivation to improve work through learning (0.085), while employee commitment barely had any impact on motivation to improve work through learning (-0.006).

In terms of the total effects, and the direct effects and indirect effects, the results are depicted in the table below.

Table 4.25 Results of the Conceptual Model Path Analysis

Exogenous Variable	Endogenous Variable						
	Effects	**T**	**TD**	**E**	**OA**	**EC**	**MTIWL**
EC	TE	.734	-	-	-	-	-
	DE	.734	-	-	-	-	-
	IE	-	-	-	-	-	-
MTIWL	TE	.401	.144	.528	.085	-.006	-
	DE	.406	.144	.528	.085	-.006	-
	IE	-.005	-	-	-	-	-
C	TE	.818	-	-	-	-	-
	DE	.818	-	-	-	-	-
	IE	-	-	-	-	-	-
N	TE	.238	-	-	-	-	-
	DE	.238	-	-	-	-	-
	IE	-	-	-	-	-	-
OTE	TE	.671	-	-	-	-	-
	DE	.671	-	-	-	-	-
	IE	-	-	-	-	-	-
LOC	TE	.072	-	-	-	-	-
	DE	.072	-	-	-	-	-
	IE	-	-	-	-	-	-
CV	TE	-	.825	-	-	-	-
	DE	-	.825	-	-	-	-
	IE	-	-	-	-	-	-
TD	TE	-	.862	-	-	-	-
	DE	-	.862	-	-	-	-
	IE	-	-	-	-	-	-
PC	TE	-	-	.729	-	-	-
	DE	-	-	.729	-	-	-
	IE	-	-	-	-	-	-

Table 4.25 (Continued)

Exogenous Variable	Endogenous Variable						
	Effects	**T**	**TD**	**E**	**OA**	**EC**	**MTIWL**
RC	TE	-	-	.178	-	-	-
	DE	-	-	.178	-	-	-
	IE	-	-	-	-	-	-
SO	TE	-	-	.137	-	-	-
	DE	-	-	.137	-	-	-
	IE	-	-	-	-	-	-
PON	TE	-	-	-.195	-	-	-
	DE	-	-	-.195	-	-	-
	IE	-	-	-	-	-	-
POP	TE	-	-	.549	-	-	-
	DE	-	-	.549	-	-	-
	IE	-	-	-	-	-	-
SE	TE	-	-	.841	-	-	-
	DE	-	-	.841	-	-	-
	IE	-	-	-	-	-	-

Environment had the highest total effects on motivation to improve work through learning (.53), followed by traits (.40) and transfer design (.14). Lack of opportunity to apply hardly had any effects on motivation to improve work through learning (0.09), and employee commitment barely had an impact and a negative one on motivation to improve work through learning. The results also showed that traits had a relatively high impact on employee commitment (.73), while employee commitment rarely had any effects on motivation to improve work through learning.

4.5 Conclusion

This chapter reported the results of the EFA, the CFA, and the model testing of the conceptual model under study. The EFA findings revealed that the factors in the specific training domain were reduced from 12 to 7 factors and that those in the general training domain were reduced from 12 to 8 factors; altogether 15 factors. The items loadings in each construct in both the specific training domain and general training domain demonstrated a value greater than 0.4 and were retained for further CFA analysis. As a result, 72 items were retained.

The CFA test confirmed that the measures of the constructs were consistent with the measurement model hypothesized in Holton (2005), with an acceptable fit between the data and the models in terms of statistics. Despite the fact that there were originally 8 constructs in the conceptual model of Holton (2005), only 6 constructs emerged from the EFA, which was then tested with the CFA and all the six constructs were confirmed with acceptable statistics revealing a good and acceptable fit.

The structural model testing disclosed that environment had a high impact on the motivation to improve work through learning, followed by traits and transfer design. Moreover, traits had high impact on employee commitment and a moderate impact on motivation to improve work through learning. However, employee commitment hardly had any impact on motivation to improve work through learning. That employee commitment had little impact on the motivation to improve work through learning was in contrast to what had been hypothesized in Holton's (2005) conceptual model. In the hypothesized model (Holton, 2005) there were no arrows indicating the causal link and impact between environment and motivation to improve work through learning. According to the results, causal arrow links should be added from environment and transfer design to motivation to improve work through learning.

CHAPTER 5

SUMMARY, DISCUSSION AND RECOMMENDATIONS

This chapter provides a summary of the research, the conclusion and discussion, as well as recommendations for future research and practice.

5.1 Summary

This section summarizes the objectives of the study, the research method, and the findings.

5.1.1 Research Objectives

The main objectives of the study were to study Holton's conceptual model 2005 (excluding organizational performance outcome portion) in order to develop and validate a new learning transfer instrument combining Holton's conceptual model 2005 modified constructs. The study also aimed to test the emerged learning transfer conceptual model, adapted from Holton (2005), with samples in the Thai banking sector and to investigate the factors affecting learning transfer and its relationships.

5.1.2 Research Questions

The main research question was "What factors, hypothesized in Holton's evaluation and research model (2005), can be identified when using the LTSI translated for the Thai population in the banking sector?" The following research questions are "What are the factors affecting the conceptual model for learning transfer in the Thai banking sector?" and "To what extent does each factor in the conceptual model influence others?"

5.1.3 Research Method

In order to achieve the research objectives, the literature involving the factors affecting learning transfer was reviewed. The revised HRD evaluation and research model of Holton (2005) was closely examined based on the referred literature and scales were utilized for the eight modified constructs.

This study used a quantitative research design with a self-report questionnaire to validate Holton's HRD evaluation and research model (2005). The survey used six existing measurement instruments based on theoretical and empirical foundations; namely, the learning transfer system inventory (Bates, Holton, & Hatala, 2012), the big five inventory (John, Naumann, & Soto, 2008), goal orientation (Button, Mathieu, & Zajac, 1996), locus of control (Levenson, 1981), job attitudes (Meyer & Allen, 2004), and utility reactions (Tan, Hall, & Boyce, 2003). The six instruments were integrated into a questionnaire, the contents of which were translated from English into Thai by language and HRD professionals. LTSI scales version 4 was back-translated into English and sent to the licensed owners for approval (Bates, Holton, & Hatala, 2012). LTSI version 4 (48 items) and 24 new modified items were translated from English to Thai by an English to Thai translation expert. The 48-item English-translated version was then sent to Professor Reid Bates for review; 41 items were requested to be re-adjusted. Another translation expert was asked to adjust the translation and the final version was resent to the licensed researcher and was finally approved. In order to test the reliability and validity of the instrument in this study, IOC was adopted. Of 72 items, 31 passed the cutoff criterion of 0.6, signifying that 3 of 5 experts agreed that the items measured the specified objective. Forty-one items were revised and re-adjusted to ensure that they measured the corresponding objectives. This study used the 72-item instrument to validate Holton's model (2005). The instrument was separated into 2 domains—specific and general training. Both domains consisted of 36 items measuring 12 factors; altogether 72 items measuring 24 factors. Each factor consisted of three items. In this study, exploratory factor analysis, confirmatory factor analysis, and path analysis were adopted to establish and test the proposed model, including the relationships among the variables. The valid 679 questionnaire forms were returned for analysis. The reliability and validity of the scale items were tested through Cronbach's alpha, where the values ranged from .591 to .849; the lowest value .591

belonged to the "opportunity to use" factor and the highest value .849 was "transfer design." As the lowest Cronbach's alpha found in the measurement instrument in the study was higher than 0.5, all of the factors were kept for further exploratory factor analysis. The EFA results revealed that the factors in the specific training domain were reduced from 12 to 7, and that those in the general training domain were reduced from 12 to 8 factors; altogether 15 factors. The item loadings in each construct in both specific training domain and general training domain demonstrated a value greater than 0.4 and were retained for further CFA analysis, except for variable item number 48. As a result, 71 items were retained. The CFA results confirmed that the model of the six constructs that emerged from the EFA had an acceptable fit with the data. The six constructs consisted of 1) traits, 2) employee commitment, 3) motivation to improve work through learning, 4) lack of opportunity to apply, 5) supportive environment, and 6) transfer design. The SEM results revealed the standardized regression weights between the latent variables in the conceptual model as follows. Environment had a relatively high impact on motivation to improve work through learning (0.53), followed by traits (0.41) and transfer design (0.14). Lack of opportunity to apply had very little impact on MTIWL (0.085), while employee commitment barely had any impact on MTIWL (-0.006). On the other hand, traits had a very strong impact on employee commitment (0.73).

5.2 Findings

This section presents the answers to the research questions. Due to the limitation in the data collection that the learning outcomes and the individual performance of the samples in the three banks were not available, the specified model could not be tested entirely. However, the data collected were able to shed light on some parts, if not the entire model.

As mentioned above that the learning outcomes and the individual performance could not be collected in this study, motivation to improve work through learning was instead used to predict the learning transfer in the conceptual model. According to Naquin and Holton (2002), motivation to improve work through learning, which is a function of motivation to train and motivation to transfer, predicted learning transfer

the most and explained 40 percent of the variance in attitudes toward training, 58 percent of motivation to train, 90 percent of motivation to transfer, and 47 percent of performance outcome expectations. Noe (1986) posited that motivation to learn and motivation to transfer were mediators among the trainee's characteristics, the trainee's reactions, the transfer climate, and training and learning transfer outcomes. Pasachon Bumroongtham (2008) found that the motivation to transfer affects learning transfer. The following section discusses the answers to the research questions.

Research Question 1: "What factors, hypothesized in Holton's Evaluation Model (2005), can be identified when using the LTSI translated for a Thai population in the banking sector?"

In order to answer this question, EFA, and CFA analysis were conducted in order to identify the structure of the relationships among the variables and to test whether the constructs that emerged from the EFA were consistent with or different from those hypothesized in Holton (2005). The following factors, hypothesized in Holton's evaluation research model (2005), were identified when using the LTSI translated for a Thai population in the banking sector: 1) traits, 2) employee commitment (job attitudes), 3) motivation to improve work through learning, 4) lack of opportunity to apply (perceptions), 5) supportive environment and 6) transfer design. Noticeably, in Holton's revised model (2005), in the part of learning and individual performance, there were 7 constructs in the model; however, as EFA was performed, factors were merged namely, learner readiness and performance self-efficacy variable 2 and 3, motivation and transfer effort to performance, whereas performance self-efficacy variable 1 merged with performance coaching, leaving the 6 constructs in the EFA emerged model to be tested with the CFA. The CFA results confirmed the six constructs that emerged from the EFA as specified above. Thus, six factors, hypothesized in Holton's revised HRD evaluation and research model (2005), were identified. However, in terms of the relationship and causal links among the latent variables, they differed from what was hypothesized in Holton's revised HRD evaluation and research model (2005), which will be discussed in the answer to research question 2.

Research Question 2: "What are the factors affecting the conceptual model for learning transfer in the Thai banking sector?"

In order to answer this question, structural equation modeling was performed in order to identify the causal linkages among the variables to determine the factors affecting learning transfer. Due to the data collection constraint mentioned, motivation to improve work through learning was adopted as the predictor of the learning transfer results in the present study. In terms of the factors affecting the learning transfer in the Thai banking sector in this study, when SEM was conducted, it was found that traits was the only factor, based on Holton's hypothesized evaluation research model (2005), that exerted a relatively high impact on MTIWL (.41). On the other hand, employee commitment (job attitudes) did not have any impact on MTIWL (-.01), as opposed to what had been hypothesized in Holton's model (2005).

In addition to what had been hypothesized in the revised HRD evaluation and research model (Holton, 2005), supportive environment was found to exert the greatest impact on MTIWL (.53), followed by Traits (.41) and transfer design (.14). Although employee commitment did not have any impact on MTIWL, it was found that traits did have a very strong impact on employee commitment (.73).

Research Question 3: "To what extent does each factor in the conceptual model influence others?"

This question was answered by performing an SEM analysis and based on the results of the standardized direct effects, and the indirect and total effects, it was found that environment had the greatest direct effects on motivation to improve work through learning (.53), followed by traits (.40) and transfer design (.14). Lack of opportunity to apply had very little effects on motivation to improve work through learning (0.09), and employee commitment did not have any effects on motivation to improve work through learning (-0.01). The results also showed that traits had relatively strong direct effects on employee commitment (.73), while employee commitment did not have any effects on motivation to improve work through learning. In this study, almost all of the effects were direct, except for traits, which also exerted mildly negatively indirect effects on motivation to improve work through learning. In the discussion section, these findings will be elaborated.

5.3 Discussion

Learning transfer has long been an enduring and persistent issue worldwide at the national level, both in public and private organizations (Tharenou, Saks, & Moore, 2007; Hutchins et al., 2013). The learning function has never been challenged as it has today to demonstrate the return on training and the proof of learning effectiveness (Aguinis & Kraiger, 2009; Donovan & Darcy, 2011). Despite the fact that there are a large number of learning transfer measurement models and scales, many of them have been developed from a western perspective, which may not necessarily fit the Thai organizational cultural context, as mentioned at the outset of this study (Sirikalaya Vathanalee, 2004; Walisara Kasemsri, 2004; Yamnill & McLean, 2005; Thammarat Jungsiriwattana, 2006; Pasachon Bumroongtham, 2008). Although Holton's HRD evaluation and research model (2005) was developed by a western researcher, the model included additional factors that had been introduced in the literature by researchers internationally as having an impact on learning transfer, such as personality traits, the trainee's perceptions, and job attitudes (Colquitt, LePine, & Noe, 2000; Morgan & Casper, 2000; Noe, 2000; Naquin & Holton, 2002; Ruona et al., 2002; Tan, Hall, & Boyce, 2003) and thus became a more comprehensive model worth studying. Interestingly, this model under study was never further tested or validated, and a measurement scale for the model has never been developed before this study. Validating and testing the model and measurement scale using Thai samples in the banking sector would result in knowing how and to what extent the model fit the Thai context. This learning transfer model and measurement scale were another resource for HRD practitioners to put into use and for HRD academics to further explore and refine the model and measurement.

Due to the data collection limitations, the present study could not shed light on the entirety of the learning transfer model tested. Nonetheless, the findings are meaningful and will be beneficial to the future research and HRD practice. The answers to the research questions are discussed in the following.

1) Environment or transfer climate, which included performance coaching (feedback), peer support, supervisor support, openness to change, and

personal outcomes positive, had the strongest impact on the motivation to improve work through learning (0.53).

It was evident in this study that, of all the factors in the model, the work environment had the greatest impact on the learning transfer (0.53). The transfer climate was generally defined as members' perception of the "salient characteristics of the organizational context" (Schneider, 1990, as cited in Tracey, Tannebaum, & Kavanaugh, 1995, p. 240) based on "the interaction between observable, objective elements of the organizational setting and the perceptual processes of organizational members" (Hellreigel & Slocum, 1974; James & Jones, 1974; Schneider, 1983a, 1983b as cited in Holton et al., 1997, p. 240).

Environment or transfer climate has been classified similarly into three elements: supervisor and co-workers, reinforcement and feedback, and organizational constraints (Noe & Schmitt, 1986; Brinkerhoff & Montesino, 1995; Blume et al., 2010). As seen in this study, supervisor support and peer support had the strongest impact (0.84) on the transfer climate, followed by performance coaching (feedback) (0.73) and personal outcomes positive (0.55). Thus, in order to enhance learning transfer, the organization's climate, particularly supervisor support (Gumuseli & Ergin, 2002; Cromwell & Kolb, 2004) and peer support (Chiaburu & Marinova, 2005), must be conducive to facilitate it (Kirwan & Birchall, 2006). Supervisor support, as compared to peer support, was found to have a stronger correlation with learning transfer (Holton et al., 2003). The role of the supervisor was viewed as "a key work-environment variable" (Holton et al., 2003, p. 93), the person that set an example (Huczynski & Lewis, 1980; Sims & Manz, 1982) and goals (Wexley & Baldwin, 1986), and provided reinforcement (Huczynski & Lewis, 1980; Baumgartel et al., 1984) and encouragement in terms of intrinsic and extrinsic motivation (Baldwin & Ford, 1988). Aligned with the literature, performance coaching or feedback from supervisors had a great impact on the subordinates' learning transfer (0.73). Having studied the work environment factors affecting the transfer of training in the Thai telecommunications industry, Salayaporn Boonkiat (2003) posited that supervisor support, organizational support, and peer support were the main factors affecting learning transfer, while lack of understanding and lack of cooperation from the supervisor were the factors inhibiting it.

Personal outcomes positive also exerted a relatively high impact on learning transfer (0.55) as evident from this research. Motivation to transfer was influenced by environmental favorability, namely social and task, which leads to behavioral change and performance. Noe (1986, p. 743) posited that motivation to transfer was defined as "the trainees' desire to use the knowledge and skills mastered in the training program on the job". In terms of environment favorability, variables such as the trainees' perceived opportunities to use, reinforcement, and feedback from supervisors and peers were identified. Motivation to learn and motivation to transfer were hypothesized to be mediators among the trainee's characteristics, the trainee's reactions, the transfer climate, and the training and learning transfer outcomes (Noe, 1986).

Thus, in order to ensure that learning transfer takes place, the environment m the work setting or the transfer climate should be conducive and facilitate the transfer. According to the results from the present research, support and encouragement from supervisors and peers were seen to have a significant impact on the transfer. Performance coaching from the supervisors to the trainees was also seen to be crucial for speeding up the transfer of learning. Moreover, communication about one's career path, and recognition would also give a boost to the trainees in terms of personal outcomes positive.

2) Traits, which consisted of conscientiousness, neuroticism, openness to new experience, and locus of control, had moderate impacts on motivation to improve work through learning (0.40).

As seen in this study, conscientiousness had the strongest direct impact on traits (0.82), followed by openness to new experience (0.67) and neuroticism (0.24). On the other hand, locus of control had very little impact on traits (0.07). According to Yamkovenko and Holton (2010), traits re the mechanism driving people's behaviors and this mechanism works differently with different people. As people are the most important assets in the organizations and learning transfer is the organization's desired behavior, understanding how this mechanism works is crucial for the organization's success. A number of researches have shown that traits have an influence on the learning transfer (Naquin & Holton, 2002; Chiaburu & Marinova, 2005; Yamkovenko & Holton, 2010). Holton (2005) for example reviewed the literature and identified

three of the big five personality traits with strong research support, namely, conscientiousness, neuroticism, and openness to experience as having an impact on the motivation to learn and training outcomes.

Conscientiousness was found to impact both learning and the transfer of learning (Digman & Takemoto-Chock, 1981; Salgado, 1997; Dean, Conte, & Blankenhorn, 2006), and is a valid predictor of job performance for all occupational groups—professionals, police, managers, sales persons, and skilled/semi-skilled workers, and also is a valid predictor of job and training proficiency (Barrick & Mount, 1991). Yamkovenko and Holton (2010) also explored the relationships among the five factor model of personality, goal orientation, self-efficacy, and intent to transfer using SEM. It was reported that 48 percent of the intent to transfer could be explained by conscientiousness, motivation to transfer, and learner readiness, with conscientiousness being the only significant variable. In the studies of Holton (2005) and Yamkovenko and Holton (2010), conscientiousness was found to affect motivation to learn, intention to transfer, and training outcomes.

Openness to experience has been seen to be associated with "being imaginative, cultured, curious, original, broad-minded, intelligent, and artificially sensitive" (Barrick & Mount, 1991, p. 5). It was found to be correlated with training proficiency and positively correlated with transfer (Herold et al., 2002; Naquin & Holton, 2002) and influenced motivation to learn and training outcomes (Holton, 2005). In this study, openness to new experience and goal orientation were merged during the EFA and the merged factors were confirmed with CFA. There are a number of empirical studies identifying that openness to new experience and learning goal orientation are closely correlated (VandeWalle, 1997; Chan & Tesluk, 2000; Connolly & Vieswesvaran, 2002). Payne et al. (2007, as cited in Yamkovenko & Holton, 2010) for example found that "openness to experience is positively and strongly related to learning goal orientation (p=.44)." Several researches have also pointed out that individuals that scored high in openness to new experience tended to "engage more in learning activities and had a more positive attitude toward learning experiences" (Barrick & Mount, 1991; Mount, 1991; Costa & McCrae, 1992; Herold et al., 2002; Judge & Ilies, 2002; Dean et al., 2006; Payne et al., 2007). Individuals with learning goal orientation were open to adopt, attempt, and develop new skills and to achieve the

mastery of new skills (Ford, Weissbein, Smith, Salas, & Gully, 1998, as cited in Yamkovenko & Holton, 2010). They liked challenging tasks and tended to have an adaptive response pattern whereby they persisted in the face of failure, used more complex learning strategies, and were in pursuit of difficult and challenging learning materials and tasks (Bell & Kozlowski, 2002). The learning goal oriented persons viewed negative feedback as an opportunity to improve oneself (Ford et al., 1998).

Thus, the findings from the present study imply that those that are conscientious and open to new experience will have the tendency to be motivated to transfer what they have learned to the job. Organizations that are determined to transform themselves could leverage these findings by studying their employees' traits and selecting those with traits of conscientiousness and openness to new experience to be at the forefront of their organization, as change agents to undertake new learning and development programs.

3) Employee commitment, which consisted of organizational commitment and job involvement, was not seen to have any impact on motivation to improve work through learning (-0.01). However, traits did have a significant and direct impact on employee commitment (0.73).

According to this study, employee commitment did not have any impact on learning transfer, despite a few studies supporting this idea. Organizational commitment was classified according to three forms based on three different mindsets of the organization's employees: affective commitment, normative commitment, and continuance commitment (Lai, 2001; Cabautan, 2002). Tolentino (2013) found that only the affective commitment scale (desire to stay) significantly and positively correlated with job performance. The two other commitment scales namely, the normative commitment scale (obliged to stay) and the continuance commitment scale (CCS), were not seen to be related to job performance.

Job involvement was defined as the extent to which a person is involved in his job psychologically and values his work in terms of total self-image (Noe, 1986). According to Noe and Schmitt (1986), job involvement is significantly related to learning (r=.45) and is moderately related to career planning (r=.34). The person that is highly involved with his or her job is likely to be highly motivated to learn and to improve his or her work skills. Additionally, when combined with appropriate cues in

his or her work environment, his or her behavior will tend to change in a favorable way and his or her performance will improve. However, Colquitt, LePine, and Noe (2000) discovered that high job involvement was not significantly related to learning outcomes. According to Colquitt et al. (2000), job involvement was not found to be a significant predictor of motivation to transfer and organization commitment could not be tested as it did not receive "sufficient research attention in the training literature" (as cited in Holton, 2005, p. 42) and thus were not included in the meta-analysis. Thus, the key take away from this research was that employee commitment did not have an impact on learning transfer.

4) Transfer design, including content validity and learning design, also had some impact on motivation to improve work through learning (0.14). Both the learning design and content validity had strong impacts on the transfer design at 0.86 and 0.83 respectively.

A number of studies have indicated that learning design correlates with learning and motivation to transfer (Thorndike & Woodworth, 1901; Gagne, 1985; Baldwin & Ford, 1988; Knox, 2002; Montesino, 2002; Grossman & Salas, 2011; Lau & McLean, 2013; van der Locht, van Dam, & Chiaburu, 2013). Liebermann and Hoffmann (2008) posited that perceived practical relevance had an impact on the trainees' affective reactions ($y=0.86$), which in turn influenced transfer motivation ($\beta=0.63$) and learning transfer. According to the present study, the perceived practical relevance of training content exerted total effects of 0.817 on transfer motivation and 0.566 on learning transfer. Perceived content relevancy or training content consistent with job requirements has also generally been cited as a predictor of transfer outcomes (Rouiller & Goldstein, 1993; Axtell, Maitlis, & Yearta, 1997; Bates, Holton, & Seyler, 1998; Bates et al., 2000; Holton, Bates, & Ruona, 2000; Bates & Holton, 2004; Yamnill & McLean, 2005; Lau & McLean, 2013).

In summary, this research investigated the factors affecting learning transfer and it was found that the work environment had the strongest impact on the motivation to improve work through learning, followed by traits and transfer design. Employee commitment, on the other hand, and as opposed to the hypothesized model, did not have any impact on the motivation to improve work through learning. It was also found that traits had a significant impact on employee commitment.

5.4 Limitations of the Study

There are several limitations to this study. First, the results of this study may not be able to be generalized to other industries and other countries as the samples are the front-line employees of three large-sized Thai commercial banks.

Second, in terms of common method bias, the current study was designed as a self-reported one, where the data were collected from the same group of samples at one time using a Likert scale, and question items consisting of a mix of both positive and negative questions, which may have confused the respondents. Thus, the results could be prone to errors and bias.

Third, the learning outcome data and the individual performance outcome data were not possible to collect as the organizations deemed them as confidential.

Fourth, in terms of the learning outcomes data, different organizations held different training courses for their employees and each course assessment depended on the curriculum designer of each organization. When the learning outcome data were collected from the learners taking different courses and the learning outcome measurements differed, the learning outcome data validity could not be achieved. If the learning outcome data were to be reliable and valid, the participants in the survey were required to take the same course and assessment. The assessment itself would need to be standardized across organizations. In terms of financial institutes, the standardized test and assessment results from the survey participants, such as an investment contact (IC) license or certified financial planning (CFP), would allow the data to be valid and used for future study. Unfortunately, this study did not have such a luxury in collecting those data.

Fifth, apart from the fact that every organization classified the individual performance data as confidential, each organization had different performance measurement scales and definitions. In addition, the performance outcome ratings were prone to the raters' subjectivity. Therefore, the data were unlikely to be reliable and valid. To test the entire conceptual model would be very challenging.

Even though the learning and performance outcomes were received from the organizations studied, the validity of the data would have been a big question. As a

consequence, in this study the model on the outcome level and other parts related to the outcomes could not be tested due to the unavailability of data.

5.5 Recommendations for Practice

This study will be beneficial for HRD practitioners as follows. The environment, the traits of the trainee, and relevant learning designs are crucial for the learning transfer in the Thai banking sector context. It was confirmed from this study that the environment impacts learning transfer and that the work environment of a team is conducive to motivate or de-motivate performance. It is the HRD practitioners' responsibility to influence and point out to the supervisors in organizations that the team environment has a great impact on the team's motivation to improve its work performance through learning, and that it is the leaders' responsibility to ensure that the team's environment is conducive to learning. Performance coaching is another essential factor for the supervisors to motivate their team members to transfer what they have learned to their work, and to provide support and encouragement. HRD practitioners should raise awareness of the benefits and importance of having regular performance coaching between the supervisors and their team members and of reinforcing such action. Furthermore, HRD practitioners should ensure that the career plans of each individual are mapped and communicated, including the corresponding organization's merits and recognition schemes, as these will give a boost to the trainees in terms of personal outcomes positive.

According to the study it was evident that the employees of the three Thai commercial banks, whose characteristics were conscientious, open to new experience, and emotional stability, were likely to be motivated to improve their work through learning. Thus, upon sequencing the roll-out plan of the important training topics, such as the organization's transformation, the staff members whose traits are conscientious and open to new experience could be selected to attend the first few batches of the training as they could be the organization's change agents, adopting what they learned in the training, putting it into practice, and becoming role models for their peers and beginning a "ripple effect." The measurement scale used in this study to identify the people's characteristics could be adopted for HRD practices on the condition that

approval of those scales is granted beforehand or the HRD practitioners could use other scales measuring the specified traits.

Transfer design had somewhat of an impact on the motivation to improve work through learning. In order to facilitate the transfer of learning, the curriculum designer should ensure that both the learning design and content validity are similar with those in the actual work settings so that the learners can transfer the learning without difficulty. If the transfer design is not properly been laid out in such a way that the learners cannot relate to it and be engaged, it is unlikely that they will use the knowledge and skills to improve their work and the training investment will be wasted.

Another important point that should be noted from this study is that employee commitment is unlikely to have any impact on the motivation to improve work through learning. It has normally been presumed that a person that is loyal to the organization and to the job s/he holds will have the motivation to improve his/her work through learning. Despite their being loyal and job-involved, it does not necessarily mean that they will be motivated to improve their work or that they are motivated to learn. These two factors of employee commitment and motivation to improve work through learning were not found to be connected in this study.

5.6 Recommendations for Future Research

There is a need for future research to test the conceptual model of Holton (2005) in part, if not the entire model. Holton (2005) recommended that the model be validated in steps: on a single level, for example validating learning and all intervening variables affecting learning, and then moving on to a multi-level analysis at the next phase. He also suggested that the model be tested using structural equation modeling to be able to see the causal links among the latent variables. Despite the fact that this study was successful with only part of the model testing, the results yielded valuable insights into the factors affecting learning transfer. Had it been possible for the entire model to be tested, such a contribution would have been a tremendous help to HRD practitioners and academics.

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APPENDICES

APPENDIX A

LEARNING TRANSFER CONTENT VALIDITY ASSESSMENT FORM

LEARNING TRANSFER CONTENT VALIDITY ASSESSMENT FORM

Assessor ……...

Instruction: Please rate each question item in the middle column and consider if it is congruent with the question objective in the left column, using the following rating scale.

Rate 1 when you are certain that the question item clearly measures the objective

Rate 0 when you are not certain if the question item can measure the objective

Rate -1 when you are certain that the question item cannot measure the objective and please suggest the alternative question that is more appropriate

Objective	**Item**	**Question**	**Rating Score**		
			1	**0**	**-1**
Specific Training Program					
Learner Readiness	1	I knew what to expect from the training before it began.			
	2	Before the training, I had a good understanding of how it would fit my job-related development.			
	3	Prior to the training, I knew how the program was supposed to affect my performance.			
Motivation to Transfer	4	I believe the training will help me do my current job better.			
	5	When I leave training, I can't wait to get back to work to try what I learned.			
	6	Training will increase personal productivity.			

Objective	Item	Question	Rating Score		
			1	0	-1
Utility Perceptions	7	The training program was useless for me.			
	8	This training was a waste of time.			
	9	This training program taught me nothing I will use on the job.			
Peer Support	10	My colleagues will encourage me to use the skills I have learned in this training.			
	11	My colleagues will appreciate my using the new skills I learned in this training.			
	12	At work, my colleagues will expect me to use what I learned in this training.			
Supervisor Support	13	My supervisor will meet with me to discuss ways to apply this training on the job.			
	14	My supervisor will meet with me regularly to work on problems I may be having in trying to use this training.			
	15	My supervisor will help me set realistic goals for job performance based on my training.			
Personal Outcomes Positive	16	I am likely to receive some recognition if I use my newly learned skills on the job.			
	17	Successfully using this training will help me get a salary increase.			
	18	If I use this training I am more likely to be rewarded.			

Objective	Item	Question	Rating Score		
			1	0	-1
Personal Outcomes Negative	19	If I do not utilize this training I will be cautioned about it.			
	20	If I do not use new techniques taught in this training I will be reprimanded.			
	21	Employees in this organization will be penalized for not using what they have learned in this training.			
Supervisor Opposition	22	My supervisor will think I am being less effective when I use the techniques taught in this training.			
	23	My supervisor will oppose the use of techniques I learned in this training.			
	24	My supervisor will probably criticize this training when I get back to the job.			
Content Validity	25	I like the way this training seems so much like my job.			
	26	The instructional aids (equipment, illustrations, etc.) used in this training are very similar to real things I use on the job.			
	27	I like the way this training seems so much like my job.			
Transfer Design	28	The trainer(s) used lots of examples that showed me how I could use my learning on the job.			
	29	The way the trainer(s) taught the material made me feel more confident I could apply it in my job.			
	30	It is clear to me that the people conducting this training understand how I will use what I learn.			

Objective	Item	Question	Rating Score		
			1	0	-1
Personal Capacity to Transfer	31	I don't have time to try to use this training on my job.			
	32	Trying to use this training will take too much energy away from my other work.			
	33	There is too much happening at work right now for me to try to use this training.			
Opportunity to Use	34	The resources needed to use what I learned in this training will be available to me.			
	35	I will be able to try out this training on my job.			
	36	I will get opportunities to use this training on my job.			
General Training Program					
Conscientiousness	37	I perform a thorough job.			
	38	I make plans and follows through with them.			
	39	I persevere until the task is finished.			
Neuroticism	40	I worry a lot.			
	41	I often feel that I am inferior to others.			
	42	Sometimes I feel depressed and blue.			
Openness to Experience	43	I am curious about many different things.			
	44	I am sophisticated in art, music, or literature.			
	45	I like to reflect and play with ideas.			

Objective	Item	Question	Rating Score		
			1	0	-1
(Learning) Goal Orientation	46	The opportunity to do challenging work is important to me.			
	47	I prefer to work on tasks that force me to learn new things.			
	48	The opportunity to learn new things is important to me.			
(External) Locus of Control	49	I feel like what happens in my life is mostly determined by powerful people.			
	50	Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.			
	51	It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.			
Organization Commitment	52	I would feel guilty if I left my organization now.			
	53	I owe a great deal to my organization.			
	54	I would not leave my organization right now because I have a sense of obligation to the people in it.			
Job Involvement	55	Most of my interests are related with my job.			
	56	Most of my personal goals are related with my job.			
	57	I am personally quite committed to my job.			
Performance Self-Efficacy	58	I never doubt my ability to use newly learned skills on the job.			

Objective	Item	Question	Rating Score		
			1	0	-1
	59	I am sure I can overcome obstacles on the job that hinder my use of new skills or knowledge.			
	60	At work, I feel very confident using what I learned in training even in the face of difficult or taxing situations.			
Transfer Effort to Performance	61	The harder I work at learning, the better I do my job.			
	62	The more training I apply on my job, the better I do my job.			
	63	My job performance improves when I use new things that I have learned.			
Performance Outcome Expectation	64	For the most part, the people who get rewarded around here are the ones that do something to deserve it.			
	65	When I do things to improve my performance, good things happen to me.			
	66	My job is ideal for someone who likes to get rewarded when they do something really good.			
Performance Coaching	67	I get a lot of advice from others about how to do my job better.			
	68	People often make suggestions about how I can improve my job performance.			
	69	People often tell me things to help me improve my job performance.			
Resistance to Change	70	My workgroup is reluctant to try new ways of doing things.			

Objective	Item	Question	Rating Score		
			1	0	-1
	71	People in my group are not willing to put in the effort to change the way things are done.			
	72	Experienced employees in my group ridicule others when they use techniques they learn in training.			

แบบประเมินความสอดคล้องของคำถามกับหัวข้อในการวัด (IOC)
สำหรับงานวิจัยหัวข้อระบบถ่ายโอนความรู้ (Learning Transfer)

ชื่อผู้ประเมิน .....

คำแนะนำในการประเมิน: ขอให้ท่านพิจารณาคำถามแต่ละข้อใน Column โดยให้คะแนนดังนี้

ให้คะแนน 1 เมื่อท่านเห็นว่าคำถามนั้นสามารถวัดสิ่งที่ต้องการวัดอย่างชัดเจน

ให้คะแนน 0 เมื่อท่านไม่แน่ใจว่าคำถามนั้นสามารถวัดสิ่งที่ต้องการวัดได้

ให้คะแนน -1 เมื่อท่านเห็นว่าคำถามนั้นไม่สามารถวัดสิ่งที่ต้องการวัดอย่างชัดเจน และกรุณาให้คำแนะนำสิ่งที่ควรปรับในบรรทัดต่อจากข้อคำถาม

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
Specific Training Program (โปรดนึกถึงการอบรมครั้งนี้โดยเฉพาะ)					
Learner Readiness ความพร้อมและความเต็มใจของผู้เรียนในการเข้ารับการอบรม โดยทราบถึงวัตถุประสงค์ของการอบรมและประโยชน์ที่ตนจะได้รับ	1	ข้าพเจ้ารู้ว่าจะคาดหวังอะไรได้บ้างจากการฝึกอบรมครั้งนี้ก่อนที่จะเริ่ม			
	2	ก่อนมาฝึกอบรมครั้งนี้ ข้าพเจ้ามีความเข้าใจดีว่าการฝึกอบรมจะช่วยพัฒนาข้าพเจ้าในส่วนที่เกี่ยวข้องกับงานของตัวเองอย่างไร			
	3	ก่อนการฝึกอบรมครั้งนี้ ข้าพเจ้ารู้ว่าหลักสูตรนี้จะมีผลต่อผลการทำงานของข้าพเจ้า			
Motivation to Transfer ความปรารถนาของผู้เข้าอบรมที่จะนำความรู้และทักษะที่เรียนในการอบรมมาใช้ในการพัฒนาการทำงาน	4	ข้าพเจ้าเชื่อว่าการฝึกอบรมครั้งนี้จะช่วยให้สามารถทำงานที่รับผิดชอบอยู่ในปัจจุบันได้ดีขึ้น			
	5	หลังจากที่ฝึกอบรมเสร็จแล้ว ข้าพเจ้าอยากจะรีบกลับไปทำงานและได้ลองทำในสิ่งที่ได้เรียนรู้มา			
	6	การฝึกอบรมครั้งนี้จะช่วยเพิ่มผลผลิตในการทำงานของข้าพเจ้า			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
Utility Perceptions ประโยชน์ของการอบรมในมุมมองของผู้เรียน	7	การอบรมครั้งนี้ไร้ประโยชน์สำหรับข้าพเจ้า			
	8	การอบรมครั้งนี้ทำให้ข้าพเจ้าเสียเวลา			
	9	การอบรมครั้งนี้ไม่ได้สอนอะไรที่ข้าพเจ้าจะนำไปใช้งานได้เลย			
Peer Support การสนับสนุนจากเพื่อนร่วมงานให้นำสิ่งที่เรียนมาใช้ในการทำงาน	10	เพื่อนร่วมงานจะสนับสนุนให้ข้าพเจ้านำทักษะใหม่ๆ ที่ได้เรียนมาจากการฝึกอบรมนี้มาใช้งาน			
	11	เพื่อนร่วมงานจะชื่นชมที่ข้าพเจ้านำทักษะใหม่ๆ ที่ได้จากการฝึกอบรมนี้มาใช้ในการทำงาน			
	12	ขณะปฏิบัติงาน เพื่อนร่วมงานคาดหวังว่าข้าพเจ้าจะนำสิ่งที่ได้เรียนมาจากการฝึกอบรมมาใช้			
Supervisor support การสนับสนุนจากหัวหน้าให้นำสิ่งที่เรียนมาใช้ในการทำงาน	13	หัวหน้างานมักจะพบกับข้าพเจ้าเพื่อพูดคุยถึงแนวทางที่จะนำสิ่งที่อบรมนี้มาใช้ในการทำงาน			
	14	หัวหน้างานจะพบกับข้าพเจ้าเป็นประจำเพื่อแก้ไขปัญหาที่อาจเกิดขึ้น เมื่อข้าพเจ้าลองนำสิ่งที่ได้จากการฝึกอบรมมาใช้			
	15	หัวหน้าจะช่วยข้าพเจ้าตั้งเป้าของผลงานที่เป็นไปได้จริง โดยอิงจากการฝึกอบรมที่ได้เรียนรู้มา			
Personal Outcomes Positive ผลลัพธ์ที่ผู้เข้าอบรมคาดว่าจะเกิดในเชิงบวก (หากนำสิ่งที่เรียนไปใช้)	16	ข้าพเจ้าน่าจะได้รับการยอมรับ ถ้าได้นำเอาทักษะใหม่ๆ ที่ได้เรียนรู้มา ไปใช้ในการทำงาน			
	17	ถ้าข้าพเจ้านำสิ่งที่ได้จากการอบรมครั้งนี้ไปใช้ในการทำงาน จะทำให้มีโอกาสมากขึ้นที่จะได้รับรางวัลตอบแทน			
	18	การนำสิ่งที่อบรมนี้มาปรับใช้ในการทำงานได้สำเร็จจะช่วยให้ข้าพเจ้าได้รับการขึ้นเงินเดือน			
Personal Outcomes Negative ผลลัพธ์ที่ผู้เข้าอบรมคาดว่าจะเกิดในเชิงลบ	19	หากข้าพเจ้าไม่นำการฝึกอบรมนี้มาใช้ให้เกิดประโยชน์ ข้าพเจ้าจะถูกว่ากล่าวตักเตือน			
	20	หากข้าพเจ้าไม่นำทักษะใหม่ๆ ที่สอนในการฝึกอบรมครั้งนี้มาใช้ ข้าพเจ้าจะถูกตำหนิ			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
(หากนำสิ่งที่เรียนไปใช้)	21	พนักงานในองค์กรนี้จะถูกลงโทษหากไม่นำสิ่งที่ได้จากการฝึกอบรมครั้งนี้มาใช้ในการทำงาน			
Supervisor Opposition การต่อต้านจากหัวหน้าในการนำสิ่งที่เรียนมาใช้ในการทำงาน	22	หัวหน้ามักคิดว่าข้าพเจ้ามีผลการทำงานลดลงหากนำเอาวิธีการที่สอนในการฝึกอบรมมาใช้			
	23	หัวหน้าจะต่อต้านการนำทักษะต่างๆ ที่ได้จากการฝึกอบรมมาใช้			
	24	หัวหน้างานอาจวิพากษ์วิจารณ์การฝึกอบรมครั้งนี้เมื่อข้าพเจ้ากลับไปทำงาน			
Content Validity เนื้อหา อุปกรณ์ และวิธีการเรียนการสอนในการอบรมมีความสอดคล้องกับการปฏิบัติงาน	25	วิธีที่ใช้ในการฝึกอบรมใกล้เคียงกับวิธีการทำงานจริงของพวกเรา			
	26	สื่อการสอนที่ใช้ในการฝึกอบรมนี้ (อุปกรณ์, ภาพประกอบต่างๆ เป็นต้น) ใกล้เคียงกับสิ่งที่ใช้ในการทำงานจริงเป็นอย่างมาก			
	27	ข้าพเจ้าชอบการฝึกอบรมแบบนี้ซึ่งเหมือนกับลักษณะงานที่ข้าพเจ้าทำอยู่			
Transfer Design การออกแบบการถ่ายโอนความรู้เพื่อให้ผู้เรียนเข้าใจและสามารถนำไปประยุกต์ใช้ในการทำงานได้	28	วิทยากรใช้ตัวอย่างที่แสดงให้เห็นว่าข้าพเจ้าจะสามารถนำไปใช้ในการทำงานได้อย่างไร			
	29	วิธีการที่วิทยากรใช้ในการสอนเนื้อหาสาระต่างๆ ทำให้ข้าพเจ้ารู้สึกมั่นใจมากขึ้นว่าจะสามารถนำมาปรับใช้กับงานของข้าพเจ้าได้			
	30	เป็นที่ชัดเจนสำหรับข้าพเจ้าว่าผู้จัดฝึกอบรมเข้าใจดีว่าข้าพเจ้าจะนำสิ่งที่ได้เรียนรู้มาไปใช้ได้อย่างไร			
Personal Capacity พละกำลังและความสามารถของผู้เข้าอบรมในการนำสิ่งที่เรียนไปใช้ในการทำงาน	31	ข้าพเจ้าไม่มีเวลาที่จะลองใช้การฝึกอบรมนี้กับงานของตัวเอง			
	32	การลองใช้สิ่งที่เรียนมาจากการฝึกอบรมจะดึงพละกำลังของข้าพเจ้าจากภาระงานอื่นๆ มากเกินไป			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
	33	ขณะนี้มีสิ่งต่างๆเกิดขึ้นในงานมากเกินกว่าที่ข้าพเจ้าจะลองใช้สิ่งที่ได้เรียนมาจากการฝึกอบรม			
Opportunity to Use ผู้เข้ารับการอบรมมีโอกาส และมีทรัพยากรที่เพียงพอในการนำสิ่งที่เรียนไปใช้	34	มีการจัดทรัพยากร และเครื่องมือต่างๆที่จำเป็นอย่างครบถ้วน ให้กับข้าพเจ้าสำหรับการทำงานตามรูปแบบที่อบรมมา			
	35	ข้าพเจ้าจะมีโอกาสได้ใช้การฝึกอบรมนี้กับงานของข้าพเจ้า			
	36	ข้าพเจ้าสามารถที่จะลองนำสิ่งที่เรียนจากการฝึกอบรมนี้ใช้ในการทำงาน			
Conscientiousness ลักษณะนิสัยของคนที่มีความน่าเชื่อถือ ความมุ่งมั่นสู่ความสำเร็จ ความขยัน และความเพียร	37	ข้าพเจ้าสามารถบังคับตัวเองให้ทำสิ่งต่างๆให้เสร็จภายในเวลาที่กำหนดได้เสมอ			
	38	ข้าพเจ้าตั้งเป้าหมายการทำงานอย่างชัดเจน และมีการปฏิบัติเพื่อมุ่งสู่เป้าหมายอย่างเป็นขั้นเป็นตอน			
	39	เมื่อข้าพเจ้าตั้งใจทำอะไรแล้ว ข้าพเจ้าจะพยายามทำจนสำเร็จลุล่วงไปด้วยดี			
Neuroticism ลักษณะนิสัยของคนที่มีความกระวนกระวาย ความวิตกกังวล ความหดหู่ การขาดความมั่นใจ และเป็นทุกข์	40	บ่อยครั้งที่ข้าพเจ้ารู้สึกเครียดและกระวนกระวายใจ			
	41	บ่อยครั้งที่ข้าพเจ้ารู้สึกว่าตัวเองด้อยกว่าคนอื่น บ่อยครั้งที่ข้าพเจ้ารู้สึกว่าตัวเองด้อยกว่าคนอื่น			
	42	บางครั้งที่ข้าพเจ้ารู้สึกอ่อนแอ และต้องการให้คนอื่นมาช่วยแก้ปัญหาต่างๆแทน			
Openness to Experience ลักษณะนิสัยของคนที่มีจินตนาการสูง สนใจวัฒนธรรม อยากรู้	43	ข้าพเจ้าสนใจอยากรู้ไปทุกสิ่ง			
	44	ข้าพเจ้ามีความลุ่มหลงในศิลปะ ดนตรี และวรรณกรรม			
	45	บ่อยครั้งที่ข้าพเจ้ารู้สึกสนุกกับเรื่องที่ต้องพิสูจน์หรือความคิดที่เป็นนามธรรม			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
อยากเห็น ใจกว้าง เปิดรับสิ่งใหม่ๆ เป็นตัวของตัวเอง มีไหวพริบ					
(Learning) Goal Orientation ลักษณะนิสัยของคนที่มีความต้องการที่จะเพิ่มขีดความสามารถของตัวเองด้วยการพัฒนาทักษะใหม่ๆ และบริหารจัดการความท้าทายที่เข้ามาได้	46	การได้ทำงานที่ยากและท้าทายมีความสำคัญต่อข้าพเจ้ามาก			
	47	ข้าพเจ้าชอบทำงานที่บังคับให้ข้าพเจ้าต้องเรียนรู้สิ่งใหม่ๆอย่างสม่ำเสมอ			
	48	โอกาสในการเรียนรู้สิ่งใหม่ๆนั้นสำคัญยิ่งสำหรับข้าพเจ้า			
(External) Locus of Control ลักษณะนิสัยของคนที่มีมุมมองว่าสิ่งที่เกิดขึ้นในชีวิตเป็นเพราะโชคชะตาฟ้าลิขิตที่ไม่สามารถคาดการณ์ได้เป็นปัจจัยที่อยู่นอกเหนือการควบคุมของตัวเอง	49	หลายครั้งข้าพเจ้ารู้สึกว่าข้าพเจ้าแทบจะไม่มีอิทธิพลในการควบคุมชีวิตของตัวเองเลย			
	50	ใครจะได้ขึ้นเป็นเจ้าคนนายคนนั้นขึ้นอยู่กับโชคชะตา			
	51	ไม่เป็นการดีที่จะวางแผนล่วงหน้ายาวๆเพราะหลายอย่างในชีวิตนั้นก็ขึ้นอยู่กับโชคอยู่แล้ว			
Organization Commitment ความผูกพัน ความจงรักภักดีของพนักงานที่มีต่อองค์กร และความต้องการของ	52	ข้าพเจ้าคงรู้สึกผิดถ้าข้าพเจ้าลาออกจากองค์กรตอนนี้			
	53	ข้าพเจ้ารู้สึกติดหนี้บุญคุณองค์กร			
	54	ข้าพเจ้าคงยังไม่ลาออกจากองค์กรตอนนี้เพราะรู้สึกผูกพันกับคนในองค์กร			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
พนักงานที่จะอยู่กับองค์กร					
Job Involvement ลักษณะนิสัยของคนที่ให้คุณค่ากับงานเป็นอย่างมาก โดยให้งานเป็นตัวกำหนดคุณค่าของชีวิต	55	ความสนใจส่วนตัวของข้าพเจ้ามักเกี่ยวพันกับเรื่องงาน			
	56	เป้าหมายในชีวิตของข้าพเจ้าส่วนใหญ่เกี่ยวข้องกับงานที่ทำ			
	57	ข้าพเจ้ารู้สึกผูกพันกับงานที่ทำเป็นอย่างมาก			
Performance Self-Efficacy ความเชื่อมั่นในสมรรถภาพของตนส่งผลต่อการตัดสินใจ ความทะเยอทะยาน และความบากบั่นในการเอาชนะอุปสรรคต่างๆในชีวิต	58	ข้าพเจ้าไม่เคยสงสัยในความสามารถของตัวเองที่จะนำทักษะที่เรียนรู้ใหม่ๆ มาใช้ในการทำงาน			
	59	ข้าพเจ้ามั่นใจว่าจะสามารถฟันฝ่าอุปสรรคต่างๆ ในการทำงานที่ขัดขวางการนำทักษะหรือความรู้ใหม่ๆ มาใช้			
	60	ในการทำงาน ข้าพเจ้ารู้สึกมั่นใจมากที่ได้นำสิ่งที่เรียนรู้มาจากการฝึกอบรมมาใช้ แม้จะอยู่ในสภาวการณ์ที่ยากลำบากหรือต้องใช้ความอุตสาหะอย่างมาก			
Transfer Effort - Performance Expectation ความคาดหวังของผู้เข้าอบรมต่อผลของความพยายามถ่ายโอนความรู้	61	ยิ่งข้าพเจ้าขยันในการเรียนมาก ข้าพเจ้าก็จะทำงานได้ดีขึ้น			
	62	ยิ่งข้าพเจ้านำสิ่งที่เรียนรู้มาใช้ ข้าพเจ้ายิ่งทำงานได้ดีขึ้น			
	63	ผลงานของข้าพเจ้าดีขึ้นเมื่อได้ใช้สิ่งใหม่ๆ ที่ได้เรียนรู้มา			
Performance Outcome Expectations ความคาดหวังของผู้เข้าอบรมต่อผลของการ	64	ที่องค์กรนี้ คนส่วนใหญ่ที่ได้รับรางวัลมักจะเป็นคนที่มีผลงานสมควรได้รับ			
	65	เมื่อไรก็ตามที่ข้าพเจ้าพัฒนาผลงานให้ดีขึ้น สิ่งดีๆ มักจะเกิดขึ้นกับตัวข้าพเจ้า			

สิ่งที่ต้องการวัด	ข้อ	คำถาม	คะแนน		
			1	0	-1
ทำงาน	66	งานของข้าพเจ้าเป็นงานที่เหมาะกับคนที่ต้องการได้รับรางวัลตอบแทนเมื่อเขาทำงานได้ดีจริงๆ			
Performance Coaching การที่ผู้เข้ารับการอบรมได้รับคำแนะนำในการทำงานจากบุคคลที่อยู่รอบข้าง	67	ข้าพเจ้ามักจะได้รับคำแนะนำมากมายจากคนอื่นว่าต้องทำอย่างไรเพื่อที่จะทำงานได้ดีขึ้น			
	68	ผู้คนรอบตัวมักจะให้คำแนะนำว่าข้าพเจ้าจะสามารถพัฒนาการทำงานได้อย่างไร			
	69	บ่อยครั้งที่ผู้คนมักจะบอกสิ่งที่ช่วยให้ข้าพเจ้าพัฒนาผลงานให้ดีขึ้น			
Resistance to Change การต่อต้านการเปลี่ยนแปลงเมื่อมีการทดลองนำสิ่งใหม่ๆที่เรียนจากการอบรมมาใช้ในการทำงาน	70	บุคลากรในกลุ่มงานของข้าพเจ้ามักลังเลที่จะลองทำงานในแนวทางใหม่ๆ			
	71	บุคลากรในกลุ่มงานของข้าพเจ้าไม่อยากที่จะเปลี่ยนวิธีการทำงานจากแบบเดิมๆ			
	72	บุคลากรที่มีประสบการณ์มากในกลุ่มงานของข้าพเจ้ามักล้อเลียนคนที่นำทักษะที่ได้จากการอบรมมาใช้ในการทำงาน			

APPENDIX B

BACK TRANSLATION QUESTIONNAIRE

Learning Transfer System

Please circle the number (1, 2, 3, 4 or 5) on the right of each statement which best represents your opinion towards this training.

1 – Definitely disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Definitely agree

Each statement below, please especially think about this training only.

1.	Before attending this training, I considered that it would affect my performance at work.	1 2 3 4 5
2.	Knowledge from this training will increase my work efficiency.	1 2 3 4 5
3.	After I finish this training, I would like to try out the new things I have learnt at work.	1 2 3 4 5
4.	I believe this training would help me improve my work performance.	1 2 3 4 5
5.	The training program was useless for me.	1 2 3 4 5
6.	This training was a waste of time.	1 2 3 4 5
7.	This training program taught me nothing I will use on the job.	1 2 3 4 5
8.	Applying knowledge to practice would make me get a higher salary.	1 2 3 4 5
9.	If I put knowledge from this training into work, I would have more opportunities to get a reward.	1 2 3 4 5
10.	I would be accepted if I can apply knowledge and skill I have learnt into my work environments.	1 2 3 4 5
11.	Before attending this training, I understand how this learning would develop my relevant working capability.	1 2 3 4 5

12.	I considered what I expect from this training before it starts.	1 2 3 4 5
13.	I do not have time to try out what I have learnt from this training with my task.	1 2 3 4 5
14.	To try out what I have learnt from this training will lose my power from other works.	1 2 3 4 5
15.	Employees of this organization would be punished if they do not put knowledge from this training to practice.	1 2 3 4 5
16.	I am able to bring what I have learned from this training to practice at work.	1 2 3 4 5
17.	Several things happen at work now so that I cannot try out this training.	1 2 3 4 5
18.	If I do not put new skills from this training into practice, I would be blamed.	1 2 3 4 5
19.	If I do not effectively apply this knowledge to work, I would be blamed.	1 2 3 4 5
20.	Environment and needed tools are fully provided for me to work as pattern I have learnt.	1 2 3 4 5
21.	My co-workers would admire me if I bring this knowledge into works.	1 2 3 4 5
22.	My co-workers would support me if I bring new skills into practices.	1 2 3 4 5
23.	While I am working, my co-workers expect me to bring what I have learnt into practices.	1 2 3 4 5
24.	My boss generally talks to me to deal with any problems that might happens when we brings knowledge from this training into practice at work.	1 2 3 4 5
25.	My boss would talk to me about the guideline to put knowledge into practices.	1 2 3 4 5
26.	My boss would resist bringing new skills from this training into works.	1 2 3 4 5

27.	My boss will think that my efficiency decrease if I bring new skills from this training into practices.	1 2 3 4 5
28.	My boss might criticize this training when I am back to work.	1 2 3 4 5
29.	My boss will help me set the possible goals by considering the outcome from this training.	1 2 3 4 5
30.	These learning materials (instruments, pictures etc.) are similar to what I have used at work.	1 2 3 4 5
31.	This training methodology is similar to our working processes.	1 2 3 4 5
32.	I like this training which closely relates to my works.	1 2 3 4 5
33.	It is definitely clear to me that training teams totally understand how I would apply knowledge into practice.	1 2 3 4 5
34.	Instructors gave several examples that I can apply knowledge into work easier.	1 2 3 4 5
35.	The training methods of instructors make me feel more confident to put that knowledge into practices at work.	1 2 3 4 5
36.	I will have a chance to try out knowledge from this training with my works.	1 2 3 4 5

Please Answer Question 37-72 below

Please Notice that these Statements below have New Instruction

Please Read Carefully

1 – Definitely disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Definitely agree

Each statement below, please think about any training programs in your organization.

37.	My efficiency is increasing when I apply new knowledge into works.	1 2 3 4 5

38.	More I learn, better I work.	1 2 3 4 5
39.	Most people around me who got reward typically made their own achievements and deserve those rewards.	1 2 3 4 5
40.	Whenever I improve my working capability, good things always happen to me.	1 2 3 4 5
41.	More I practice the things I have learnt, better I work.	1 2 3 4 5
42.	My task is an ideal one for others who want to get rewards after they could work effectively.	1 2 3 4 5
43.	Experienced co-workers in my group tease others who put new knowledge into practices.	1 2 3 4 5
44.	My co-worker is unwilling to change working method.	1 2 3 4 5
45.	My department hesitates to try out the new working method.	1 2 3 4 5
46.	People around me likely suggest me how to develop my capability.	1 2 3 4 5
47.	I have got several suggestions from others how to work better.	1 2 3 4 5
48.	I do not hesitate in my capability to bring new knowledge and skills into works.	1 2 3 4 5
49.	I ensure I can deal with any obstacles which block me to bring new knowledge and skills into practices.	1 2 3 4 5
50.	At work, I totally feel confident that I bring what I have learnt into practice although it is difficult situation or I have to work very hard.	1 2 3 4 5
51.	Others generally suggest me how to improve my efficiency.	1 2 3 4 5
52.	I would not leave my organization right now because I have a sense of obligation to the people in it.	1 2 3 4 5
53.	I would feel guilty if I left my organization now.	1 2 3 4 5
54.	I owe a great deal to my organization.	1 2 3 4 5
55.	I perform a thorough job.	1 2 3 4 5

56.	Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.	1 2 3 4 5
57.	It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	1 2 3 4 5
58.	I feel like what happens in my life is mostly determined by powerful people.	1 2 3 4 5
59.	I make plans and follows through with them.	1 2 3 4 5
60.	I persevere until the task is finished.	1 2 3 4 5
61.	I am personally quite committed to my job.	1 2 3 4 5
62.	Most of my interests are related with my job.	1 2 3 4 5
63.	Most of my personal goals are related with my job.	1 2 3 4 5
64.	I worry a lot.	1 2 3 4 5
65.	Sometimes I feel depressed and blue.	1 2 3 4 5
66.	I often feel that I am inferior to others.	1 2 3 4 5
67.	I am curious about many different things.	1 2 3 4 5
68.	I am sophisticated in art, music, or literature.	1 2 3 4 5
69.	I like to reflect and play with ideas.	1 2 3 4 5
70.	The opportunity to do challenging work is important to me.	1 2 3 4 5
71.	I prefer to work on tasks that force me to learn new things.	1 2 3 4 5
72.	The opportunity to learn new things is important to me.	1 2 3 4 5

BIOGRAPHY

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