TRANSFER SYSTEM FACTORS ON TRAINING TRANSFER WITH REGARD
TO TRAINEE CHARACTERISTICS AND CONTEXTUAL VARIABLES:
A CASE OF THE CENTRAL BANK OF THE REPUBLIC OF TURKEY

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ABSTRACT

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The purpose of this study is to explore the factors affecting training transfer at the Central Bank of the Republic of Turkey (CBRT) through the transfer system framework. Learning Transfer System Inventory (LTSI) was adapted into the Turkish language (T-LTSI), and construct structure of the T-LTSI was examined with exploratory common factor analysis.

T-LTSI data collected from 606 respondents attended various in-service training programs delivered by the training center of the CBRT in years 2013, and 2014. Trainee characteristics including gender, level of education, and work experience, and contextual variables such as work unit, training type, and participation type were used to obtain perceptions of training participants on the T-LTSI factors. Further, training transfer scores of the security officers training program participants ($n = 95$) were used to investigate whether work environment factors of the T-LTSI account for a more significant portion of variance in the training transfer scores, compared to the other factors.

Results of factor analysis indicated that T-LTSI can provide psychometrically sound measurement for learning transfer system, in Turkey. In addition, Multivariate Analysis of Variance results revealed that learning transfer system perceptions were significantly different across all the selected trainee characteristics, and organizational variables. Results suggested that these differences must be taken into account in the design and delivery of the training programs in order to improve training transfer. Furthermore, Sequential Multiple Regression analysis disclosed that manager support, personal-outcomes negative, resistance to change were the work environment factors, and explained more variance than other significant predictors (motivation to transfer learning, and transfer design) of training transfer.

ÖZ

TRANSFER SİSTEM FAKTÖRLERİNİN KATILIMCI ÖZELLİKLERİ VE ORTAMSAL DEĞİŞKENLER AÇISINDAN EĞİTİMİN İŞE AKTARIMINA ETKİSİ: TÜRKİYE CUMHURİYET MERKEZ BANKASI ÖRNEĞİ

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Bu çalışmanın amacı Türkiye Cumhuriyet Merkez Bankasında (TCMB) eğitimin işe aktarımını etkileyen faktörleri transfer sistemi çerçevesi içinde araştırmaktır. Öğrenme Transferi Sistemi Envanteri (ÖTSE) Türkçe'ye uyarlanmış ve ÖTSE'nin faktör yapısı açımlayıcı faktör analizi yöntemi ile incelenmiştir.

ÖTSE'ye ilişkin veriler, TCMB'de 2013 ve 2014 yıllarında düzenlenen çeşitli hizmet-içi eğitim programlarına katılan 606 kişiden elde edilmiştir. Cinsiyet, öğrenim düzeyi ve çalışma kıdemi katılımcı/öğrenen özellikleri, çalışılan birim, eğitimin türü ve eğitime katılım biçimi ise ortama ilişkin değişkenler olarak, katılımcıların algılarını edinmek üzere, ele alınmıştır. Ek olarak, güvenlik görevlileri eğitim programı katılımcılarının (n = 95) eğitimi işe aktarmaya ilişkin puanları, ÖTSE'deki iş ortamı faktörlerinin transfer puanlarını daha iyi açıklayıp açıklamadığını araştırmak için kullanılmıştır.

Faktör analizi sonuçları, ÖTSE'nin Türkiye'de öğrenme aktarımına ilişkin ölçümlerde, psikometrik açıdan güvenilir bir şekilde, kullanılabileceğini göstermiştir. Ek olarak, Çok Değişkenli Varyans Analizi sonuçlarına göre katılımcıların öğrenme transferi sistemine ilişkin algıları, seçilen bütün katılımcı/öğrenen özelliklerine ve kurumsal değişkenlere göre farklılık göstermektedir. Sonuçlar, eğitimin işe aktarımını iyileştirmek için eğitimlerin tasarım ve uygulamasında bu farklılıkların dikkate alınması gerektiğini işaret etmektedir. Ayrıca, Hiyerarşik Çoklu Bağlanım analizi sonuçları, iş ortamına ilişkin faktörlerin (yönetici desteği, olumsuz kişisel sonuçlar, değişime direnç) diğer faktörlere oranla (öğrenmeyi transfer etme motivasyonu, transfere ilişkin tasarım) eğitimin işe aktarımını daha fazla yordadığını göstermektedir.

Anahtar Sözcükler: eğitimin işe aktarımı, ÖTSE, katılımcı/öğrenen özellikleri, kurumsal değişkenler, transfer iklimi

I dedicate this study to my wonderful twins

Çınar & Çiğdem,

who lent me their most precious toys,

a racing car and a plush lamb,

to relieve my stress during long library hours.

Considering how much they value these toys,

I appreciate their sacrifice very much.

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CHAPTER 1

INTRODUCTION

Training and staff development has become an increasingly crucial subject for many business and organizations. As activities of organizations become more knowledge-driven, efforts in training and development play an increasingly growing role in satisfying learning needs of individuals, and meeting strategic business imperatives (Harrison & Kessels, 2004). Hence, organizations are tended to enlarge their training and development budgets in today's competitive business world. Hutchins (2009) indicated that annual training and other development expenses of the U.S. companies were over $ 100 billion.

On the other hand, despite the significant proportion of resources allocated to training and staff development, organizational leaders are often not confident about the value and effectiveness of training activities. Reports of organizations concluded that trainees had applied less than 40 % of their learning obtained from training measured three months after training program (Hutchins, 2009). Further, Saks and Belcourt (2006) found that 62 % of the training participants apply what they have learned in training right after attending a training program. However, after six months, only 44 % make use of the skills and knowledge, and after one year, only a third (or 34 %) still uses what they learned in training on the job. Burke and Hutchins (2007) pointed out that since learning investments continue to produce deficient outputs, transfer of training would remain a central issue in the human resources development research.

In this chapter, first, the background to the present study is described. Next, the purpose and significance of the study, together with the definitions of the key terms, are presented.

1.1. Background of the Study

Training has been regarded as supplemental to the educational process within business for many years. Organizations identify their training needs according to their own business environment and observed organizational incidences. Performance reports including a decline in production results, problems in quality, increased number of accidents and high turnover rates are generally used as indices for determining training needs. While some organizations design and deliver in-house training programs (with the help of their human resources and training specialists), others arrange outsourced training activities through training institutes, training centers, learning/simulation laboratories etc. All the efforts and budget allocated to training and staff development is due to the strategic bridge of training between an organization's human resources strategy and overall corporate strategy (Mabey, Salaman, & Storey, 1998).

According to Goldstein and Ford (2002) training, however, is only instrumental to the employee and organization when it fosters learning and retention of these learned skills and knowledge, and helps employees in the transfer of these new learning to the job leading to meaningful changes in the work performance. Hence, the challenge for training specialists is to effectively design, deliver, and evaluate transfer strategies to promote the transfer of learning outcomes from training environment to the job context.

In their highly-noticed transfer of training review, Baldwin and Ford (1988) proposed that transfer of training was more than the learning obtained from a training experience, and in the transfer process acquired learning first must be *generalized* to the job and *maintained* on the job over a certain period of time. The authors further proposed a framework to examine the training transfer process indicating three major categories of training inputs: (1) trainee characteristics, (2) training design, and (3) work environment. This three-category framework is also recognized by other researchers in their reviews of the transfer of training literature,

and regarded as groups of variables influencing transfer of training (Blume, Ford, Baldwin, & Huang, 2009; Burke & Hutchins, 2007).

Burke and Hutchins (2007) reported that among trainee characteristics, cognitive ability, self-efficacy, variables related to motivation, locus of control, conscientiousness, openness to experience, extroversion, perceived utility are studied by the researchers. The authors reported that need analysis, learning goals, content relevance, practice and feedback, over-learning, cognitive overload, active learning, behavioral modeling, error-based examples, self-management strategies and technological support are studied as training design and delivery factor variables. Burke and Hutchins (2007) identified, finally, strategic link (alignment of the training with organizational goals and strategies), transfer climate (situations and consequences in organizations that either inhibit or facilitate transfer), supervisory support, peer support, opportunity to perform, and accountability variables under the work-environment influences factor.

Besides these variables, several demographic characteristics of the individuals like *age* (Baumgartel & Jeanpierre, 1972), *work experience* (Quinones, Ford, & Teachout, 1995), and *education level* (Ford, Quinones, Sega, & Sorra, 1992; Warr & Bunce, 1995), and several organizational and training-specific variables such as *type of organization* (Bates, Kauffeld, & Holton, 2007; Holton, Chen, & Naquin, 2003), *type of training* (Holton, Chen, & Naquin, 2003), *voluntary or obligatory type of participation* (Nikondrou, Brinia, & Bereri, 2009) have also been examined in terms of their influence on transfer.

Work environment factors identified by Baldwin and Ford (1988) received greater attention and operationalized as the *training transfer climate* by several researchers (Baldwin, & Ford, 1988; Baldwin & Magjuka, 1991; Ford, Quinones, Sega, & Sora, 1992; Kozlowski & Hults, 1987; Tannenbaum, & Yukl, 1992; Tracey, Tannenbaum, & Kavanagh, 1995; Rouiller & Goldstein, 1993). For example, Rouiller and Goldstein (1993) defined transfer climate as situational cues and consequences that either restrain or foster the transfer of what has been learned in training into the job context. Tracey and Tews (2005) conceptualized the training

climate as perceived support from management, work, and the organization for training and development activities performed by the employees.

Holton, Bates, Seyler, and Carvalho (1997) started with the Rouiller and Goldstein's (1993) training transfer climate conceptualization and transfer climate instrument. However, their research interest shifted to developing a new conceptual framework that explains the relationship between transfer of climate and transfer of training. This research, further enhanced by the Holton's (1996) HRD Research and Evaluation Model to expand the constructs in the instrument to reach more comprehensive set of factors explaining training transfer (Holton, Bates, & Ruona, 2000). Holton et al. (2000), widens their focus from transfer climate to *transfer system,* and their conceptual framework resulted in Learning Transfer System Inventory (LTSI).

The constructs included in the LTSI are grouped under five dimensions: (1) secondary influences (trainee characteristics), (2) motivation, (3) work environment, (4) ability, and (5) outcomes. The first four dimensions are composed of influence constructs, and fifth one is the outcome dimension including learning, individual performance, and organizational performance. Thus, framework of the LTSI model covers the complete transfer system, all factors in the person, training, and organization affecting the transfer of training to job context (Holton et al., 2000).

The impact of the LTSI constructs on the transfer of training was explored by Holton and colleagues through many studies (Chen, Holton, & Bates, 2005; Hutchins, Nimon, Bates, & Holton, 2013; Ruona, Leimbach, Holton, & Bates, 2002). Furthermore, the LTSI showed psychometric qualities and validity evidences for construct structure in the U.S. and several cross-cultural contexts (Bates, Holton & Hatala, 2012; Holton, Bates & Bookter, 2007; Holton, Bates, & Ruona, 2000; Khasawneh, Bates & Holton, 2006; Seyler, Holton, Bates, Burnett and Carvalho, 1998; Yamkovenko, Holton & Bates, 2007).

Research clearly demonstrates that transfer of training is complicated, associated with multiple factors, and is affected by a system of influences (Baldwin, & Ford, 1988; Burke & Hutchins, 2007; Rouiller & Goldstein, 1993). In that sense,

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transfer of training seemed to remain important in the development of human resources, especially for the companies making steady and enormous learning investments for their human capital. Therefore, both researchers and training and staff development specialists must devote conscientious attention to variety of factors and their interactions encompassing training transfer.

1.2.   Purpose of the Study

The Central Bank of the Republic of Turkey (CBRT) was established in 1930, as a joint stock company. With its main aim to achieve and maintain price stability, and with its exclusive privilege of issuing banknotes in Turkey, the CBRT is one of the key financial institutions of the Turkish Republic. The CBRT has a Head Office consisting of 15 directories, one Banknote Printing Plant, and 21 branches located in different cities within the country. On 2 January 2014, the CBRT had about 4.659 members of staff, 1.553 female and 3.106 male.

As clearly stated in the 2011-2015 Strategic Plan of the CBRT, one of the critical performance objective assigned to the Human Resources Directory is defined as "to increase the quality of human resources of the CBRT through training and staff development activities to increase organizational level efficiency" (CBRT 2011-2015 Strategic Plan Document, 2010, p.57). As per the organizational strategy stated above, the Training Department of the CBRT, with its own in-site training center, designs and delivers in-service training programs in consideration of the needs of the departments and employees.

Presently, 36 personnel works at the CBRT Training Center in total, 8 of whom are training specialists responsible for the development and delivery of training programs for the CBRT staff. The Training Center provides a wide range of training programs in following areas: central banking functions and regulations, law, information technology, auditing, management, security, career development, and personal development. In 2013, the CBRT Training Center designed and offered 65 different training programs to 135 different training groups and reached 4.374 training participants and 16.3 personal learning hour for its' per employee. Furthermore, in 2013, the CBRT spent nearly TRY 1.2 million (nearly $ 563.000) for in-service learning and development activities for its staff.

In the current practice of the CBRT Training Center, effectiveness of training programs are evaluated with an online evaluation form fulfilled by the participants right after the completion of a training program. However, this is a perceptual measure and related only to the reaction, and learning levels of Kirkpatrick's evaluation model (Kirkpatrick, 1994). However, on-the-job performance transfer, and organizational impact levels are not considered. In addition, except for some career development programs, learning obtained from training programs is evaluated only through self-report data provided by the training participants. Although training specialists are aware of the importance of transferring learning outcomes to the work environment, there is no current systematic attempt to evaluate such a transfer phenomenon at the CBRT Training Center.

In this context, this study was conducted to explore the factors affecting training transfer at the CBRT through the transfer system approach. The Learning Transfer System Inventory (Holton et al., 2000) was selected for the study due to its transfer system framework including a wide range of factors influencing training transfer, and its sound psychometric qualities demonstrated in many studies. First, training participants' perceptions regarding factors affecting transfer were examined through trainees' demographic characteristics and organizational variables. *Gender*, *level of education, and work experience* were identified as the demographic variables of interest, and *work unit of the participants*, *training type*, and *participation type* (voluntary or mandatory) were organizational variables of interest of the current study. The second and final research interest of the study focused on whether work environment factors of the LTSI were able to explain more variance on the transfer of training outcomes compared to the other constructs (trainee characteristics, motivation, and ability/enabling scales) of the LTSI.

Parallel to the research interests described above, this study addressed the following three research questions:

(1)   Do perceptions of the trainees on the T-LTSI factors differ in terms of demographic characteristics including *gender*, *education level,* and *work experience*?

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(2)   Do perceptions of the trainees on the T-LTSI factors differ in terms of *work unit of the trainees*, *training type,* and *participation type* (*voluntary or obligatory*) in the training?

(3)   How well do the work environment factors predict training transfer more than other factors of the T-LTSI (trainee characteristics, motivation, and ability/enabling scales) in terms of training transfer scores of the 'Security Officers Training Program' delivered by the Training Center of the CBRT?

1.3. Significance of the Study

Training researcher and practitioners have always sought to build up methods to improve increasing training effectiveness. Training specialists need to understand the factors influencing the training transfer and must realize how these factors can be interpreted in developing and delivering training programs, and enhancing the transfer of training.

In this sense, the first significance of the study is exploring the perceptual differences on the LTSI constructs regarding demographic characteristics of the CBRT staff and specified organizational factors. Analysis of these demographic and organizational variables is critical in terms of effective transfer system development. Observed differences in these variables, if any, can be used in tailoring of training programs according to these differences. For example, if mean scores of the LTSI constructs display differences depending on the work experience and work unit of the trainees, specific interventions can be targeted by taking these differences into account, which in turn fosters effective training transfer.

Secondly, due to the diagnostic nature of the LTSI (Holton et al., 2000), this study provides help in assessing potential problems hindering the successful transfer of the learning outcomes to the work environment. The mean scores of the LTSI constructs (for example, lower *supervisory support*, higher *resistance to change*, low *motivation to transfer learning*) can be used in targeting interventions designed to eliminate potential inhibitors prior to training and improve the effectiveness of the training transfer in the CBRT.

Blume, Ford, Baldwin, and Huang (2010) reported that there was a need to specify which predictors actually make a difference in enhancing training transfer. Thirdly, this study contributes to the training transfer literature by reporting that which LTSI factors significantly predict training transfer scores of participants of the security officers training program.

LTSI was validated through several studies conducted in the United States (Holton, Bates, & Ruona, 2000; Holton, Bates, Seyler, & Carvalho, 1997) together with several other cross-cultural studies conducted in Germany (Bates, Kauffeld, & Holton, 2007), in France (Devos, Dumay, Bonami, Bates, & Holton, 2007), in Jordan (Khasawneh, Bates, & Holton, 2006) in Taiwan (Chen, Holton, & Bates, 2005), and in Ukraine (Yamkovenko, Holton, & Bates, 2007). However, there is no cited research study investigating LTSI or any other system approach to the transfer phenomenon in Turkey. This study is the first one examining the transfer of training with a system model through LTSI in Turkey. Hence, finally the study provides validated Turkish version of the LTSI (T-LTSI) for Turkish researchers aiming to study training transfer with a comprehensive set of transfer system factors.

1.4. Definition of the Terms

"Transfer of training: generalization of the material learned in training to the job context and maintenance of the learned material over a period of time on the job (Baldwin & Ford, 1988, p.64)".

"Training/learning outcomes: the amount of original learning that occurs during the training program and the retention of that material after the program is completed (Baldwin & Ford, 1988, p.64)".

Positive transfer of training: the extent to which the learning acquired from a training activity transfers to the job and leads to meaningful changes in the work performance (Goldstein & Ford, 2002).

"Transfer Generalization: the extent to which the knowledge and skill acquired in a learning setting are applied to different settings, people, and/or situations from those trained (Blume, Ford, Baldwin, & Huang, 2010, p.1067)".

"Transfer Maintenance: the extent to which changes that result from a learning experience persist over time (Blume, Ford, Baldwin, & Huang, 2010, p.1067)".

"Organizational transfer climate: situations and consequences that either inhibit or help to facilitate the transfer of what has been learned in training into the job situation (Rouiller & Goldstein, 1993, p.379)".

"Training climate: perceived support from management, work, and the organization for formal and informal training and development activities (Tracey & Tews, 2005, p.358)".

"Transfer system: all factors in the person, training, and organization that influence transfer of learning to job performance (Holton, Bates, & Ruona, 2000, p.335)".

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter contains four sections of literature review. The first section focuses on reviewing factors affecting training transfer, the second section concentrates on reviewing the development and validation of the LTSI, the third section covers the Turkish context in terms of training transfer, and finally the fifth section provides summary for the review of the literature.

2.1. Factors Affecting Training Transfer

Baldwin and Ford (1988) identified the 'transfer problem' in the training transfer research by analyzing 63 empirical studies conducted between 1907 and 1987 and reported that samples, tasks, designs, measures, and criteria of interest of the transfer research inhibit the ability to understand the process of transfer. However, a meta-analytic review of Blume, Ford, Baldwin, and Huang (2009) recognized the very same problems in the transfer literature again, more than twenty years later. Although transfer of training is complex and opens to influences of a wide range of variables, researchers were able to group factors affecting training transfer under the three major categories: (1) trainee characteristics, (2) training design factors, and (3) work environment factors (Baldwin & Ford, 1998; Blume, Ford, Baldwin, & Huang, 2009; Burke & Hutchins, 2007).

Baldwin and Ford (1988) also proposed a framework for examining the training transfer process. In their model, trainee characteristics, training design, and

work-environment characteristics are grouped under the *training-input factors*, learning gained via training and retention of that acquisition after the program regarded as *training outcomes* and finally *conditions of transfer* are defined by generalization of learning to the job domain and maintenance of the training outputs over a period of time.

As the model proposes (See Figure 2.1.), in the training inputs, *trainee characteristics* include ability, personality and motivation variables of individual learner, *training design* comprehends integration of principles of learning, sequencing of training material for the ease of learning and alignment of training content with the job context and *work-environment characteristics* cover the support variables either from supervisors and/or peers and opportunity to use the learning obtained from the training on the job.
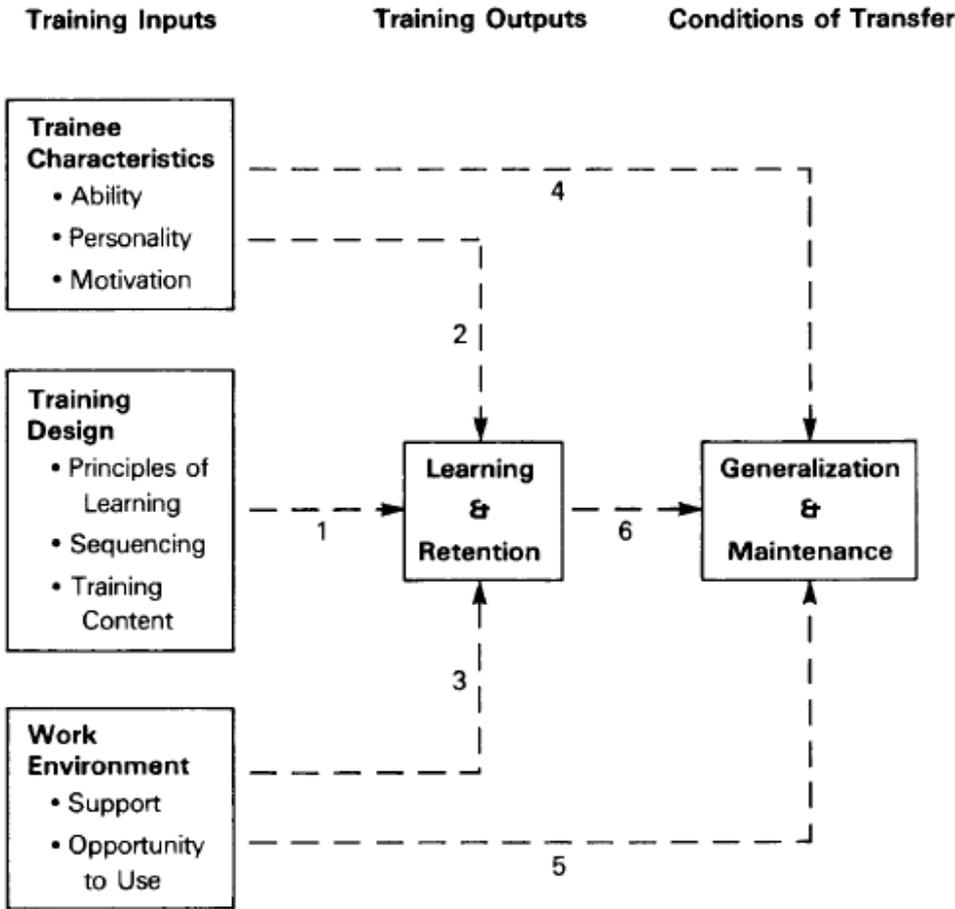
Figure 2.1. A Model of the Transfer Process. Adapted from 'Transfer of Training: a review and directions for future research,' by T. T. Baldwin, and J. K. Ford, 1998, *Personnel Psychology, 41*, p. 65.

Defined relationships of the variables in the model reveals that conditions of transfer are influenced both directly and indirectly from the training-input factors and training outcomes. In order to make transfer to happen, training material should have to be learned first and should be retained for the application in the job context (Arrow 6). Arrows 4 and 5 indicate that both trainee characteristics and work environment factors have direct effects on transfer conditions regardless of the training outputs (learning and retention). Training design factors (Arrow 1) have indirect impact on transfer through training outputs. Eventually, training outputs are considered as directly influenced by the training-input factors (Arrows 1, 2 and 3).

In their transfer research critique, Baldwin and Ford (1988) identified several problems. In the training-input factors, regarding training design, authors reported that the tasks used by the researchers include simple motor tasks and basic memory skills trainings, and not congruent with the organizational training domain which requires relatively complex and interpersonal skills. Further, their criterion of interest was defined as immediate learning or retention and measured just after the completion of the trainings which limits the generalizability of the findings in terms of generalization and maintenance of the training acquisitions. Related with the environmental characteristics, static nature of the research including only correlational studies, and usage of the only self-report data as a criterion measure pointed out as the transfer research problems by the Baldwin and Ford (1988). With respect to trainee characteristics, the authors highlighted the lack of theoretical framework to lead the research and lack of adequate criterion measures, due to use of the self-report measures only.

2.1.1. Trainee Characteristics

Characteristics of the learners affecting learning outcomes were one of the tenacious conceptualizations in the psychology of learning literature (Sackett, Gruys, & Ellingson, 1998). Similarly, it was reported that a great deal of research in the training transfer literature focuses on trainee characteristics (Baldwin & Ford, 1988; Noe & Schmidt, 1986; Rouiller & Goldstein, 1993). Burke and Hutchins (2007) grouped a wide range of variables under learner characteristics dimension

including cognitive ability, self-efficacy, pre-training motivation, motivation to learn, motivation to transfer, extrinsic vs intrinsic motivation, anxiety/negative affectivity, conscientiousness, openness to experience, extroversion, perceived utility, career planning, organizational commitment, and external vs internal locus of control.

Among the research oriented toward trainee/learner characteristics, Tziner, Fisher, Senior, and Weisberg (2007) conducted a study to investigate the predictive ability of the learner characteristics on training effectiveness. *Conscientiousness*, *self-efficacy*, *motivation to learn*, *learning goal orientation*, *performance goal orientation*, *instrumentality (value) of training* were identified as resembling the learner characteristics.

Tziner et al. (2007) collected data from 130 employees of a large industrial power company. Respondents were the participants of a two-month technical in-service training program. A 57-item questionnaire was designed by the authors to measure independent variables, trainee and work environment characteristics, and distributed to participants right after the start of the training program. Transfer effectiveness was observed with two separate measures, *training grade* and *supervisor evaluation of post-training job performance*. Training grade measure was recorded through a training course examination applied at the end of training and supervisor evaluation of post-training job performance was obtained from the immediate supervisors of the participants after three weeks of training program. Cronbach's alpha reliability measures of the independent and dependent variables were in the range of .83 to .93. The authors performed two regression models in order to test the predictive ability of the independent variables of interest. In model one, *self-efficacy* and *motivation to learn* are the significant predictors of the outcome variable which is training grade. In model two, supervisory evaluation of post-training job performance was the dependent variable, and *motivation to learn*, *learning goal orientation*, and *performance goal orientation* were found to be significant predictors.

Noe and Schmitt (1986) identified attitudes and attributes that likely to influence trainee motivation and proposed a model on motivational influences on

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training effectiveness (See Figure 2.2. for the proposed model). Authors indicated that, organizational behavior and training and development literature provided the variables included in the model. Locus of control, expectancies, reaction to skill assessment, career and job attitudes, motivation to learn, reaction to training, learning, environmental favorability, motivation to transfer, behavior change, and results were the main components of Noe and Schmitt's (1986) proposed model of training effectiveness. Overview of the model indicates that, locus of control, whether an individual has internal or external attributions on work outcomes, directly affects the reaction to skill assessment which can be considered as training need analysis, expectancies regarding the effort and training performance, and rewards resulting from the training achievement, and finally career and job attitudes of the individual. Motivation to learn, described as a specific desire on the part of the trainee to learn the content of the training program (Noe, & Schmitt, 1986, p.501), influenced directly from the reaction to skill assessment, expectancies and career and job attitudes, as well as the environmental favorability with the belief of trainees' are well aware of constraints regarding task nature of the job and non-supportive peers and supervisors together with the practice opportunities and potential rewards of application of the acquired learning on the job. Motivation to transfer component of the model, assumed to moderate the learning and behavior change relationship through fostering desire to apply learning to work.

Noe and Schmitt (1986), tested their proposed model using path analysis on the training program designed to improve administrative and interpersonal skills of educators, who are evaluated in an assessment center to diagnose their potential to be nominated as school administrators. Attitudinal measures collected before the training program whereas motivation to transfer and environmental favorability measures are obtained right after the completion of the training. Pre- and post-training learning, behavior and performance measures yielded the gain scores of trainees. Training effectiveness measures are composed of reaction, learning, behavior and performance criteria. Participants are 60 educators who attended the training program. Result of path analysis, according to the reproduced and residual correlations, indicated that, most of the path coefficients are small and statistically
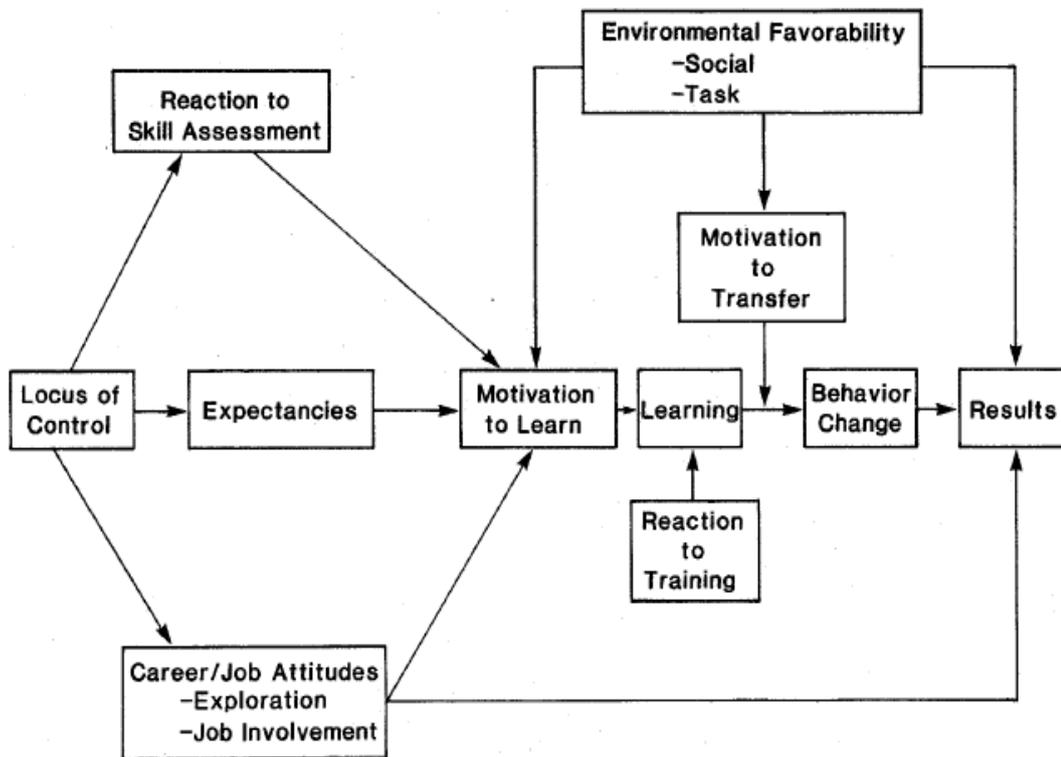
Figure 2.2. Motivational Influences on Training Effectiveness. Adapted from 'The influence of trainee attitudes on training effectiveness: test of a model,' by R. Noe, and N. Schmitt, 1986, *Personnel Psychology, 39,* p. 500.

non-significant except the relationship between the behavior change and performance improvement, and moderating effect of post-training motivation on the learning-behavior change relationships are not supported. However, by depending on the exploratory nature of their study, Noe and Schmitt (1986), preferred to apply post-hoc interventions according to the statistical rationale by declaring that this is the best effort to fit the data to a conceptually meaningful framework. Authors proposed the alternative model which has comparatively better fit index than the proposed model however the hypothesized influences of the motivational variables are not supported.

Chiaburu and Tekleab (2005) studied individual and contextual factors impact on multiple dimensions of training effectiveness. Training motivation and performance goal orientation are the individual variables whereas continuous-learning culture and supervisory support are included as contextual variables of the

study. Training effectiveness measures are operationalized as immediate learning, training transfer, training generalization and training maintenance. Chiaburu and Tekleab (2005) collected data from 119 trainees attended communication and professional business presentations training program delivered in a large company in USA. Continuous-learning culture, supervisory support training motivation, and performance goal orientation measures together with the pre-test of content related training knowledge were collected at the beginning of the training program. Right after the completion of the training program, post-test of training knowledge was applied. Finally, training transfer, training generalization, and training maintenance measures were collected from the participants, six to twelve weeks after from the program completion with six-item, eight-item, and two-item scales, respectively. Regression analysis results of Chiaburu and Tekleab (2005) study revealed that continuous-learning culture and supervisor support were the significant predictors of the training motivation as expected by the authors. Training motivation, expected as the significant predictors of post-training knowledge and three types of transfer measures, was found to be the significant predictor of training maintenance, only.

Lim and Johnson (2002) studied the factors perceived by trainees to influence the learning, training transfer, and the impact of different factors on the transfer process. In their qualitative research, authors developed structured interviews containing open-ended questions and Likert-type scales to examine the nature of transfer of learning. Interviews were made with the 10 participants of a three-week human resources development (HRD) training program delivered in one of the largest company, in Korea. The authors identified three units for the level of analysis; trainees' perceived degree of learning, perceived degree of learning transfer, and perceptions of why transfer did or did not take place. Also, reasons of low and high transfer conditions were questioned. Likert-type items measuring learning yielded that average perceived degree of learning was 3 out of 4-point scale in considering the total of 70 learning objectives. These result indicated that trainees perceived relatively high degree of learning from the training. The average perceived degree of transfer was found to be 2.6, to some degree lower than the perceived learning. Lim and Johnson (2002) further examined the high and low

transfer objectives of the participant's perceptions. Among 37 high transfer objectives of the training program, opportunity to use (77.4 %), used for personal use (14.3 %), and used to persuade others (4.8 %) were indicated as the primary reasons fostering the transfer. Among the 33 low transfer objectives, lack of opportunity to apply on the job (64.3 %), not directly related to my job (15 %), and lack of understanding (9.3 %) were reported as hindering factors of training transfer.

In another qualitatively oriented study, Nikandrou, Brinia, and Bereri (2009) conducted interviews with trainees to examine trainee characteristics impact on the training transfer. The authors conducted in-depth interviews with 44 participants of management training program delivered by the Greek Union of Merchants. Participants were from several different organizations operating in Greece. Nikandrou et al. (2009) performed content analysis on the interviews and they found out that almost 50 % of the trainees valued the role of trainees' goals and expectations on training transfer. Further, career utility, job utility and training motivation were specified as the important individual characteristics influencing the training transfer. Authors finally reported that, if participation to the training decision was given by the participants themselves, active role playing during the training was enhanced and motivation to transfer the learning was fostered.

2.1.2. Training Design and Delivery Factors

The second group of variables that have direct or indirect impact on training transfer through their influence on learning includes training design and delivery. In their literature review, Burke and Hutchins (2007) identified need analysis, learning goals, content relevance, practice and feedback, over-learning, cognitive overload, active learning, behavioral modeling, error-based examples, self-management strategies and technological support variables as training design and delivery factors that were used by the training transfer researchers.

Content relevance or content validity of the training goals and materials to the transfer tasks was critical in training transfer according to Bates (2003). Yamnill and McLean (2005) designed a study for investigating the predictive abilities of the

factors affecting training transfer and revealed that content relevancy was perceived as the primary factor predicting successful transfer by the Thai managers.

How to design and teach for improved transfer was also investigated by the researchers. Overlearning, a design strategy, described as repeated practice even after expected learning and performance has been exhibited, can improve transfer of skills that remained unused for long times in the job context (Fisk, Hertzog, Lee, Rogers, & Anderson, 1994). Fisk et al. (1994) examined the effects of extensive practice of consistent mapping on retention in the visual search skill training program. The authors reported that extensive practice on the task-specific learning stimuli has significant effect on retention of learning measured after 16 months of the completion of the training program.

Tziner, Haccoun and Kadish (1991) adopted the relapse prevention (RP) concept of the behavioral self-management (BSM) approach, which is aimed to increase the awareness of trainees regarding skill erosion and teaching them coping responses to prevent the potential decline. Tziner et al. (1991) added two-hour RP module at the end of the advanced training methods program, and 45 of the participants randomly assigned to the program with RP module out of 94 trainees. Locus of control, work environment support, motivation to transfer are the independent variables and training reactions, content mastery, use of trained skills and use of transfer strategies are the dependent variables. ANOVA results indicated that RP program participants have significantly higher content mastery and are more likely to use skill transfer strategies (self-report measure) and are more likely to transfer and apply skills (supervisory report measure) compared to the attendants of the program without RP module. The effect of the RP module is increasing in the participants having an internal locus of control and participants believing that they are working in the supportive work environment. Results indicated that RP is an effective method that could be used to increase the skill of the trainees in using transfer strategies.

Hutchins (2009), as rarely focused in the transfer literature, studied trainer's perceptions of training transfer best practices. By depending on the Burke and Hutchins (2008) study, four transfer factors grounded in the study which were

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(a) learner characteristics, (b) training design and delivery, (c) work environment, and (d) trainer characteristics and they were used to code qualitative data obtained from the 139 training professionals who were the members of the American Society for Training and Development (ASTD). Hutchins (2009) used content analysis procedure to examine text-based responses of the participants. Content analysis results indicated the emergence of the fifth category that is *evaluation*. Evaluation was described as degree of application of trained knowledge and skills. Results further indicated that training professionals most frequently reported best transfer strategies as associated with the *training design* (41 %), *work environment factors* (33 %), *evaluation practices* (14 %), *trainer characteristics* (10 %) and *learner characteristics* (2 %).

2.1.3. Work Environment Factors

Rouiller and Goldstein (1993) criticized the dominance of the individual and program characteristics and pointed out that characteristics of the organizational transfer climate and the question of whether these characteristics help to determine transferability of training behavior onto the job were ignored. Authors identified two dimensions of the transfer climate, *situational cues* composed of goal cues, social cues, task cues and self-control cues and *consequences* composed of positive feedback, negative feedback, punishment and no feedback (see Table 1 for the definitions of transfer climate variables).

Rouiller and Goldstein (1993) proposed a model depicting the relationship between learning in training, organizational climate, and trainee performance (see Figure 4 for the model). The study was conducted in a large, fast-food franchised chain operating over one hundred physically separated individual restaurants. The training program is a mandatory one for the individuals selected to be assistant managers. Learning in training, organizational transfer climate, and unit performance measures were used to predict training transfer behavior by Rouiller and Goldstein (1993). Results of the multiple regression analysis indicated that, learning and organizational transfer climate were the significant predictors of the transfer behavior, learning explained the 8 % and climate accounted for the

46 % variance. Results indicated that climate was a better predictor when compared to learning. The authors concluded that above and beyond learning, positive organizational transfer climate was important in the transfer of training into the work organization.

Table 2.1.

Definitions of Organizational Transfer Climate Variables

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1. Situational Cues. Cues that serve to remind trainees of their training or provide them with an opportunity to use their training once they return to their jobs.

> A. Goal cues. Serve to remind trainees to use their training when they return to their jobs; for example, existing managers set goals for new managers that encourage them to apply their training on the job.

> B. Social cues. Arise from group membership and include the behavior and influence processes exhibited by supervisors, peers and/or subordinates; for example, new managers who use their training supervise differently from the existing managers. (Reverse scored)

> C. Task cues. Concern the design and nature of the job itself; for example, equipment is available in this unit that allows new managers to use the skills they gained in training.

> D. Self-control cues. Concern various self-control processes that permit trainees to use what has been learned; for example, "I was allowed to practice handling real and job-relevant problems".

2. Consequences. As employees return to their jobs and begin applying their learned behavior, they will encounter consequences that will affect their future use of what they have learned.

> A. Positive feedback. In this instance, the trainees are given positive information about their use of the trained behavior; for example, new managers who successfully use their training will receive a salary increase.

> B. Negative feedback. Here, trainees are informed of the negative consequences of not using their learned behavior; for example, area managers are made aware of new managers who are not following operating procedures.

> C. Punishment. Trainees are punished for using trained behaviors; for example, more experienced workers ridicule the use of techniques learned in training. (Reverse scored)

> D. No feedback. No information is given to the trainees about the use or importance of the learned behavior; for example, existing managers are too busy to note whether trainees' use learned behavior. (Reverse scored)

Note. Adapted from 'The relationship between organizational transfer climate and positive transfer of training,' by J. Rouiller, and I. Goldstein, 1993, *Human Resources Development Quarterly, 4,* p.383.
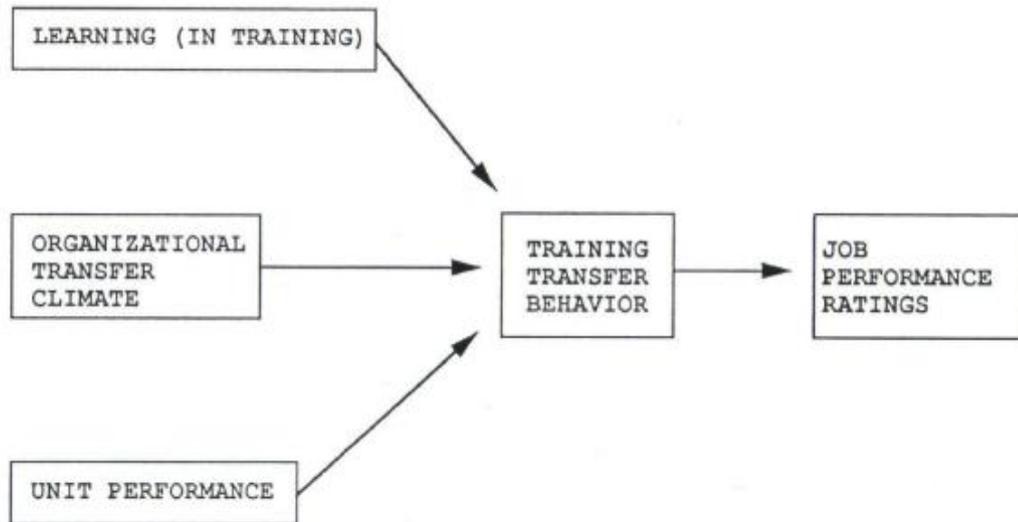
Figure 2.3. Relationship Between Learning in Training, Organizational Climate, and Trainee Performance in the Job Setting. Adapted from 'The relationship between organizational transfer climate and positive transfer of training,' by J. Rouiller, and I. Goldstein, 1993, *Human Resources Development Quarterly, 4,* p.383.

Congruent with the Rouiller and Goldstein (1993) research, Tracey, Tannenbaum and Kavanagh (1995) conducted a study exploring the importance of work environment on the transfer of training. Tracey et al. (1995) pointed out the increasing attention of other researchers to the variables resembling work environment in the transfer of training literature (Baldwin & Ford, 1988; Baldwin & Magjuka, 1991; Ford, Quinones, Sega & Sora, 1992; Rouiller & Goldstein, 1993;Tannenbaum & Yukl, 1992). Tracey et al. (1995) operationalized the work environment concept in terms of training-specific organizational climate. The authors were assessed transfer of training climate by using Rouiller and Goldstein (1993) climate measure. Out of eight scales of the Rouiller and Goldstein (1993) instrument only *self-control cues* was excluded since it was not appropriate to use in the study. Hence, Tracey et al. (1995) training-specific organizational climate measure composed of 33 items from the *goal cues*, *social cues* and *task cues* of the situational cues dimension and *positive feedback*, *negative feedback*, *punishment* and *no feedback* scales of the consequences dimensions. All the items reworded to the training-specific characteristics of the work environment of the study respondents.

Tracey et al. (1995) further included continuous-learning culture variable in their study due to its potential to associate with the transfer climate in the prediction of the training transfer. Continuous-learning culture was measured through 24-item questionnaire generated for this study by the researchers depending mainly on the Dubin's work, Rosow and Zager's study, and Kozlowski and Hults's research (as cited in Tracey et al. 1995). The items assessed perceptions, beliefs expectations, and values matching with the personal, task, and organizational factors that guide learning and application.

Tracey et al. (1995) conducted their study in a private company operating in 77 supermarkets in northeastern part of the U.S. Supervisory skill training program offered by this company was selected for the study. The authors measured training transfer with an 18-item supervisory behavior questionnaire developed from the training content including problem solving, decision making, and communication. Both pre-training and post-training behavior measures were obtained from the training participants and their immediate supervisors, three weeks before the training and 6-8 weeks after the training, respectively. At the end of the training program, transfer of training climate, and continuous learning culture questionnaires were applied to the training participants and they were requested to give the questionnaires to the four or five managerial peers and their supervisor.

Tracey et al. (1995) collected data from 104 managerial trainees, 104 supervisors of trainees, and 297 coworkers, in total 505 managers. The authors were hypothesized that: (a) transfer of training climate and continuous-learning culture will have direct influence on the post-training behaviors, (b) transfer of training climate and continuous learning culture will moderate the relationship of the learning obtained from the training and post-training behaviors, and (c) learning obtained from the training is related to post-training behavior. The authors were proposed a transfer of training model (see Figure 5 for the model) depending on their hypothesis.

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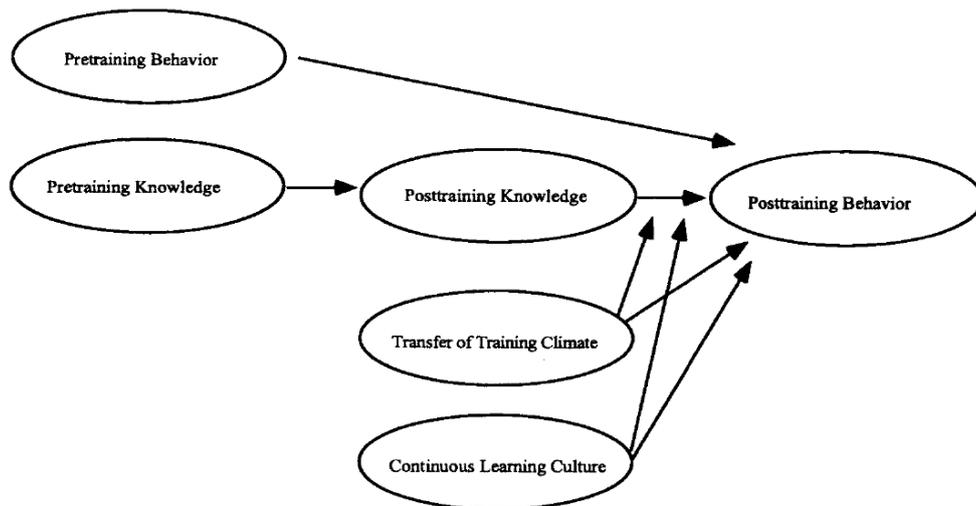
Figure 2.5. Model of transfer of training. Adapted from 'Applying Trained Skills on the Job: The Importance of the Work Environment,' by J. B. Tracey, S. I. Tannenbaum, and M. J. Kavanagh, 1995, *Journal of Applied Psychology, 80*, p. 244.

Prior to the test of their proposed model, Tracey et al. (1995) reported *t* test analysis revealing that post-training knowledge test scores and post training behavior scale scores of participants were significantly higher than the pre-training knowledge and pre-training behavior scores of the training participants, respectively. Furthermore, factor analytic results of the transfer of training climate and continuous-learning culture measures indicated a nine-factor structure explained the 68.3 % of the variance. Six factors related to the transfer of climate measure; social and goal cues, task cues, no-feedback consequences, negative reinforcement consequences, extrinsic reinforcement consequences, and intrinsic reinforcement consequences and three factors related with the continuous-learning culture measure; social support, continuous improvement, and continuous competitiveness.

Tracey et al. (1995) conducted a series of structural equation modelling analyses to test the hypotheses and the proposed model through LISREL VII. First, examination of a model with single indicators of climate and culture (total scale scores of both measures) yielded good fit of the model with the data, goodness-of-fit index was .98 and the RMSEA value was .04. Standardized path coefficients of the transfer of training climate and continuous-learning culture were significant whereas post-training knowledge was not. Hence, hypothesis (a) was fully supported but hypothesis (c) was not supported. Second, moderating effects of climate and culture

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on post-training behavior was examined and since interaction terms did not provided significantly better fit indexes hypothesis (b) was not supported. Finally, to test which of the climate and culture factors were the better indicators in the model, multiple indicators of climate and culture were included separately. The model with multiple indicators was significant and standardized path coefficients yielded that *social and goal cues* of the climate scale and *social support* of the culture scale was the better indicators with .90 and .91 path coefficients, respectively.

Tracey et al. (1995) concluded that both transfer of training climate and continuous-learning culture had direct influence on post-training supervisory behaviors, and organizations should analyze their work environment to enhance the expected behavioral change from the trainings. Further, all of the climate and culture constructs contributed significantly to the post-training behavior, however the most salient ones were social and goal cues, and social support factors indicating the importance of the social support systems of the organizations, in transfer of training.

Consequent to the results of the Tracey et al. (1995) and Tracey's other studies, Tracey and Tews (2005) were conceptualized the training climate in terms of perceived support of the three interrelated systems: (1) *managerial support*, (2) *job support*, and (3) *organizational support*. Managerial support was described as the degree to which supervisors and managers strengthen learning on-the-job, skill and knowledge acquisition, innovation and maintain recognition to workers in support of these activities. Job support was defined as the extent to which jobs are arranged to facilitate continuous learning and give flexibility for gaining new knowledge or skills. Finally, organization support resembles the policies, procedures and applications signaling the importance of training and development efforts.

Tracey and Tews (2005) retained 15 items, by depending on their three-dimensional conceptualization and the results of several other studies, out of 24-item pool of the initial measure used in the Tracey et al. (1995) study. Each dimension was represented with the 5 items and finally 15-item questionnaire was formed and named as General Training Climate Scale (GTCS) by the authors.

Tracey and Tews (2005) conducted two consecutive studies in order to examine the construct validity of the GTCS to be used confidently in diagnostic and theory testing efforts. In the first study, the authors examined the content validity of the instrument. A sample of 32 graduate business students in one private university in the U.S. were given the definitions of the three sub-scales and the items and asked to evaluate the items by using 5-point Likert scale with the described domains of the GTSC. A series of one-way ANOVA was performed to compare an item's mean rating on one scale with the same item's mean score on the other two scales. Significant F values were provided for the 14 items, except for the one item from the managerial support scale, indicated the content validity evidence according to the authors.

In the second phase of the study, Tracey and Tews (2005) examined the GTCS in terms of convergent, discriminant and the criterion-related validity evidences. The authors gathered data from the managers working for a company owing 120 midscale restaurants in the U.S. Surveys were distributed to the participants via mail with a return envelope. Together with the GTCS, the authors also collected *service climate* (Schneider's 7-item global service climate survey), *organizational commitment* (Allen and Meyer's affective commitment scale) and *training investment* (number of hours workers attend in formal training activities) measures from the respondents (as cited in Tracey and Tews, 2005, p.363). Of the 400 distributed, 246 complete and usable surveys were returned.

To examine convergent validity, Tracey and Tews (2005) performed a series of factor analysis. First, exploratory factor analysis with principal component method and oblique rotation was used. The results provided a clean three-factor solution explaining the 65.8 % of the common variance. All the items loaded on the intended factors. Further, the data subjected to the confirmatory factor analytic procedure through LISREL software, and goodness-of-fit statistics of the three-factor model yielded satisfactory results (CFI = .97 and SRMSR = .048.) confirming the three-dimensional structure of the GTCS.

For discriminant validity assessment two of the comparison scales (service climate, and organizational commitment) were separately factor analyzed with the

GTSC with the same procedure described in the previous paragraph. For the GTSC and service climate items, four-factor solution accounted for the 61.8 % of the variance and all the items, except for one in the service climate scale, loaded on anticipated factors. For the GTCS and organizational commitment items, five-factor solution explained for the 68.4 % of the variance, GTCS items remained their place, however commitment scale split into two. Confirmatory factor analysis of the four-factor models of GTCS and service climate, and GTCS and organizational commitment yielded satisfactory goodness-of-fit indexes.

Lastly, Tracey and Tews (2005) performed regression analysis using dimensions of the GTCS as predictor of training investment to examine the criterion-related validity of the GTCS. Only, Job support scale was found a significant predictor of the training investment. The authors concluded that the findings of their study enhance previous research and present evidence of the construct validity of the GTCS.

Rouiller and Goldstein (1993) study also gave inspiration to the Holton, Bates, Seyler & Carvalho (1997) to examine the mediating role of transfer climate on the transfer of training. Since Holton et al. (1997) study leaded to the development of the LTSI, a major instrument of the current research interest, Holton and colleagues' studies were given under the development and validation of the LTSI heading.

2.2. Development and Validation of the LTSI

This section reviews the initial development of the LTSI, revisions of the LTSI, research done with the original English version of the LTSI, and finally cross-cultural research and validity evidences of the LTSI.

2.2.1. Initial Development of the LTSI

The initial development of the LTSI was based on the root idea of developing a valid and generalizable set of transfer climate scale. Holton, Bates, Seyler & Carvalho (1997) investigated the mediating role of transfer climate that either support or inhibit the transfer of learning acquired from a training program.

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Authors also noted that operationalization of the transfer climate and its constructs, together with the validated transfer climate scales, are crucial for HRD research focusing on transfer process.

Holton et al. (1997) with the aim of reaching a generalizable transfer climate instrument with sufficient psychometric qualities, started with the constructs and instrument proposed by the Rouiller and Goldstein (1993). The authors, modified the Rouiller and Goldstein (1993) 63-item instrument for their study by eliminating fourteen items and adding seventeen items to compose a new construct called 'opportunity to perform' and to strengthen the existing constructs. The expanded transfer climate instrument reached 66 items and was called as the 'Learning Transfer Questionnaire (LTQ), the first version of the LTSI.

Holton et al. (1997) administered the LTQ to the 189 operating technicians attending a compulsory certification program in four manufacturing facilities of a petrochemical company. Two separate sets of factor analysis were performed on the collected data. First one is performed on the original 49-item questionnaire of Rouiller and Goldstein (1993) to see whether underlying factor structure could be replicated or not. Results of the exploratory factor analysis revealed no support for the situation-consequence dual factor structure.

Secondly, same factor analysis procedure was performed on the final 66-item instrument and results indicated the nine-factor structure composing of *supervisor support*, *opportunity to use*, *peer support*, *supervisor sanctions*, *personal outcomes – positive*, *personal outcomes – negative*, *resistance*, *content validity*, and *transfer design*. Together with the low respondent-to-item ratio and low generalizability due to the homogenous sample characteristics of the study, Holton et al. (1997) concluded that trainees perception of transfer climate are based organizational referents rather than psychological cues and provided research directions for the generalizable transfer climate instrument. The authors concluded that continued research is needed to develop and validate the LTQ and other transfer climate scales.

2.2.2. Revisions of the LTSI

Following the Holton et al. (1997) study, Holton, Bates & Ruona (2000) introduced the concept of 'learning transfer system' briefly describing that learning transfer system is a broader concept than the transfer climate, it considers variety of factors regarding person, training and organization. The authors used the HRD Research and Evaluation Model (Holton, 1996) as a theoretical framework to expand the constructs in the LTQ and to reach more comprehensive set of factors influencing the training transfer.

Holton et al. (2000) based on the review of the literature, added seven new constructs fitting to the Holton's evaluation model. These new scales were Performance Self-Efficacy, Transfer Effort-Performance Expectations, Performance-Outcomes Expectations, Personal Capacity for Transfer, Feedback/Performance Coaching, Learner Readiness and Motivation to Transfer. These 16 constructs, together with the 112 items, was called the Learning Transfer System Inventory (LTSI).

The LTSI was divided into two construct domains; the first part, *training in specific* measuring factors affecting a particular training programs attended, included 11 constructs and 76 items. Training in specific domain constructs were; Learner Readiness, Motivation to Transfer, Positive Personal Outcomes, Negative Personal Outcomes, Personal Capacity for Transfer, Peer Support, Supervisory Support, Supervisor Sanctions, Perceived Content Validity, Transfer Design, and Opportunity to Use. The second part, *training in general*, measuring more general factors that influence any training program conducted, included 5 constructs containing 36 items.

Training in general domain constructs were; Transfer Effort-Performance Expectations, Performance-Outcome Expectations, Resistance/Openness to Change, Performance Self-Efficacy, and Feedback-Performance Coaching. Figure 5 illustrates the link between the four categories of the HRD Research and Evaluation Model: (1) secondary elements/influences, (2) motivation, (3) work environment, and (4) ability/enabling factors and the constructs of the LTSI. Definitions of the

scales included in the LTSI together with the sample items, will be provided in the section describing the final version of the instrument used also in this study that is version 4.

Holton et al. (2000) collected data from the wide range of organizations and various training programs, reached the 1.616 trainees. In order to analyze the validity of the construct structure of the LTSI an exploratory factor analysis was performed separately for the two construct domains. The results of factor analysis revealed 68 items, with factor loadings of .40 or above, for the 16 constructs. Internal consistency measures of the version two of the LTSI constructs ranged from .63 to .91, in terms of Cronbach's alpha reliability.

Following to Holton et al. (2000) study, 21 items were added to the *personal outcomes-positive (α=.69)*, *personal capacity for transfer (α=.68)*, *supervisor sanctions (α=.63)*, *opportunity to use (α=.70)*, and *feedback/performance coaching (α=.70)* constructs having Cronbach's Alpha measure of .70 and/or below in order to define these constructs more clearly and to increase their internal consistency measure. Together with additional 21 items, version three of the LTSI (LTSI-v3) is created, a 16-construct and an 89-item instrument. Version 3 of the LTSI has been translated into 14 languages in the last decade, and studies have accumulated supporting validity evidences for dual nature and 16-construct structure of the instrument. However, due to the minor disparities in factor structure emerged in some studies and several items having problematic factor loadings oriented Bates, Holton & Hatala (2012) to conduct a study for construct validity and further scale refinement efforts of the LTSI.

Bates, Holton & Hatala (2012) indicated that all factorial validity studies regarding the LTSI used exploratory factor analytic (EFA) approach, that is data-driven, however without confirmatory factor analytic (CFA) procedure it is not powerful to demonstrate the construct validity of the instrument. Bates et al. (2012) employed purposive sampling methodology and they included studies that have been conducted in the last ten years by the authors of the instrument and other researchers who used the LTSI as a research instrument. Sample size reached 5.990

people who were participated in-service training programs from a variety of organizations including health care, banking, insurance, information technology, municipal and governmental organizations, manufacturing, engineering, higher education, hotel, petroleum, retail, insurance, transportation and telecommunications.

Secondary influences	Performance Self-Efficacy Learner Readiness	
Motivation	Motivation to Transfer Transfer Effort-> Performance Performance-> Outcomes	
Environment	Feedback Peer Support Supervisor Support Openness to Change	Personal Outcomes-Positive Personal Outcomes-Negative Supervisor Sanctions
Outcomes	Learning / Individual Performance / Organizational Performance	
Ability	Content Validity Transfer Design Personal Capacity for Transfer Opportunity to Use	

Figure 2.5. Learning Transfer System Inventory: Conceptual Model of Instruments Constructs. Adapted from 'Development of a generalized learning transfer system inventory,' by E. F. III. Holton, R. A. Bates, and W. E. A. Ruona, 2000, *Human Resource Development Quarterly, 11*, p. 339.

Bates et al. (2012) divided the data into two equal size sub-samples to conduct both exploratory and confirmatory factor analyses separately. In the first run, authors performed EFA with common factor analysis with oblique rotation dueto the correlations among the LTSI factors. The 11 factor and 63-item training-specific, and the 5 factor and 26-item training-general domains were analyzed distinctly. EFA resulted in clean and interpretable 11 factor solution for the training-specific domain and all the items loaded on the expected factors. Factor solution explained 60.28 % of the total variance. For the training general domain, EFA results indicated clean and interpretable 5 factor solution explaining the 56.08 of the common variance and similarly with other domain all the items loaded on the

anticipated factors. Reliability estimates for the all factors, both for training-specific and training general domains were acceptable, within the range of .71 to .85. Inter-factor correlation scores and reliability values for the scales were presented in Table 2. Before CFA procedure, by depending on the item-factors loadings results and the scale reliabilities, scale refinement efforts were made by the authors in order to reduce item redundancy, better resembling of the underlying constructs and shorten the scale length. Generally, items carrying high factor loadings were retained however in some cases relatively low loaded items were preferred over high loaded items due to their harmony with the scale conceptualization and providing item heterogeneity in a desirable direction. As a result, three items were retained for each scale yielding a 48-item LTSI.

For the CFA, two sub-samples were formed randomly. With the first sub-sample, Bates et al. (2012) were tested the model fit of the 48-item LTSI (CFA1) and with the second sub-sample, authors were tested the fit of the final model (CFA2) that was emerged from the CFA1. Both CFA1 and CFA2 procedure were run for the training-specific and training-general domains, resulting in four separate sets fit indexes. Results of the CFA1 for the training-specific domain indicated that 11-factor model has an acceptable fit with the data since all the fit indices were at the .95 level or very near and root mean square error of approximation was below .05. According to the CFA1 results, 5-factor training-general domain also demonstrated the good fit with the sub-sample 1 (n=1484) data. TLI, IFI and CFI indices were .97 and above and RMSEA was .03.

Table 2.2.

Inter-scale Correlations and Reliability Estimates of the LTSI

Scale	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Content Validity	2986	.80															
2 Transfer Design	2995	.46*	.80														
3 Personal Capacity	2992	-.13*	-.21*	.78													
4 Opportunity to Use	2978	.50*	.55*	-.29*	.79												
5 Motivation to Transfer	3004	.36*	.38*	-.15*	.41*	.78											
6 Learner Readiness	2993	.33*	.25*	-.07*	.30*	.38*	.71										
7 Supervisor Support	2996	.34	.27*	.00	.33*	.29*	.26*	.84									
8 Supervisor Opposition	3001	-.02	-.16*	.44*	-.20*	-.03	.03*	.06*	.83								
9 Peer Support	3008	.38*	.36*	-.11*	.43*	.37*	.28*	.44*	-.04*	.83							
10 Personal Outcomes Positive	2989	.27*	.21*	.07*	.29*	.36*	.28*	.42*	.21*	.37*	.83						
11 Personal Outcomes Negative	3000	.18*	.01	.26*	.07*	.13*	.12*	.31*	.37*	.25*	.45*	.81					
12 Performance Self-Efficacy	3000	.28*	.34*	-.14*	.35*	.30*	.23*	.24*	-.07*	.25*	.16*	.06*	.75				
13 Transfer Effort Perf Expect	3004	.31*	.42*	-.15*	.40*	.44*	.23*	.26*	-.13*	.37*	.23*	.06*	.40*	.75			
14 Performance Outcome Expect	3005	.31*	.28*	-.02*	.36*	.34*	.23*	.43*	.06*	.38*	.50*	.23*	.28*	.40*	.72		
15 Performance Coaching	3007	.30*	.24*	.06*	.28*	.24*	.22*	.46*	.13*	.37*	.39*	.30*	.22*	.25*	.46*	.85	
16 Resistance to Change	2997	-.10*	-.11*	.41	-.20*	-.00	-.03*	-.06*	.43*	-.14*	.06*	.16*	-.08*	-.10*	-.05*	-.04*	.80

Note. *p < .05 (two-tailed); Scale reliabilities (Cronbach's alpha) are on the diagonal. Training-general domain scales are shaded. Adapted from 'A revised Learning Transfer System Inventory (LTSI): Factorial replication and validation,' by R. A. Bates, E. F. III. Holton, and J. P. Hatala, 2012, *Human Resource Development International, 15*, p.560.

As described above, CFA2 procedure was applied for the final model test, if any modifications were made according to the results of the CFA1. Since no modifications were required as a result of the CFA1, same models were analyzed with the CFA2. CFA2 results illustrated that both training-specific and training-general models were showed a good fit with the sub-sample 2 data. Bates, Holton & Hatala (2012) concluded that both EFA and consequent CFA analyses provided strong validity evidence for the factor structure of the LTSI. Three-item 16 factors, 11 training-specific and 5 training-general, were demonstrated a good fit with the data. The data collected from wide range of organizations, training programs and 17 different countries and this heterogeneous nature of the data provided strong evidence for the generalizability and the stableness of the factorial structure of the LTSI.

Bates et al. (2012) study yielded much shorter version of the LTSI composing of 48 items that requires less completion time and allows practicality. The authors recommended future research to concentrate on the criterion-related

validity for the 3-item factors of the fourth version of the instrument that is LTSI-v4. Table 4 provided scale definitions and reliability coefficients of the LTSI-v4 classified under the training-specific and training-general domains. For the detailed descriptions of the scales see Appendix A.

2.2.3. Research with the Original LTSI

Studies done with both the original English version and the translated versions of the LTSI have yielded convergent, divergent, predictive, construct and criterion-related validity evidences indicating the psychometric soundness of the instrument. As a recent one, Hutchins, Nimon, Bates and Holton (2013) conducted a study to explore whether the LTSI predicts transfer performance or not. Constructs of the LTSI were used as independent variables predicting the proximal transfer outcome score operationalized by *intent to transfer*. Intent to transfer, outcome variable of the study, was measured through 4-item scale.

In the Hutcins et al. (2013) study, police officers attending the leadership development training program at a state-supported training facility in the United States, were administered the LTSI together with the intent to transfer scale. Out of 244 participants, 235 were completed the questionnaire that is administered at the end of the training program. Cronbach's alpha reliability measures of the constructs were .67 and above, except for the *personal capacity for transfer* which is .54. Prior to multiple regression analysis (MR), linear correlations were analyzed and most of the constructs of the LTSI were found to be moderately and positively correlated with the outcome variable. Among 16 LTSI factors, *personal capacity for transfer* was eliminated from entering the regression equation. Results of the MR indicated that *motivation to transfer* was the only significant predictor among the LTSI constructs and explained the 30 % variance of the 41.3 % of the total variance explained by the predictors in the regression model.

Hutchins et al. (2013) concluded that motivation to transfer has direct influence on the transfer outcomes, however noting that using the self-report data and not an actual transfer score together with the convenience sampling method cause severe limitations for the generalizability of the findings.

Table 2.3.

Scale definitions and reliability coefficients of the LTSI-v4

#	Scale Name	Scale Definition	α
1	Perceived Content Validity	The extent to which the trainees judge the training content to accurately reflect job requirements.	.80
2	Transfer Design	The extent to which training has been designed to give trainees the ability to transfer learning to job application.	.80
3	Personal Capacity for Transfer	The extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job.	.78
4	Opportunity to Use Learning	The extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use the skills taught in training.	.79
5	Motivation to Transfer Learning	The direction, intensity and persistence of effort toward utilizing in a work setting skills and knowledge learned in training.	.78
6	Learner Readiness	The extent to which individuals are prepared to enter and participate in a training program.	.71
7	Supervisor/Manager Support	The extent to which managers support and reinforce the use of learning on-the-job.	.84
8	Supervisor/Manager Opposition	The extent to which individuals perceive negative responses from managers when applying skills learned in training.	.83
9	Peer Support	The extent to which peers reinforce and support use of learning on-the-job.	.83
10	Personal Outcomes-Positive	The degree to which applying training on the job leads to outcomes that are positive for the individual.	.83
11	Personal Outcomes-Negative	The extent to which individuals believe that if they <u>do not</u> apply new skills and knowledge learned in training that it will lead to outcomes that are negative.	.81
12	Performance Self-Efficacy	An individual's general belief that they are able to change their performance when they want to.	.75
13	Transfer Effort - Performance Expectations	The expectation that effort devoted to transferring learning will lead to changes in job performance.	.75
14	Performance - Outcomes Expectations	The expectation that changes in job performance will lead to outcomes valued by the individual.	.72
15	Performance Coaching	Formal and informal indicators from an organization about an individual's job performance.	.85
16	Resistance to Change	The extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training.	.80

Note. Scales in the training-general domain are shaded. All scales composed of three items. α: Cronbach's alpha. Scale definitions are taken from Holton, Bates & Ruona (2000), reliability coefficients are taken from Bates, Holton & Hatala (2012).

Holton, Bates, Bookter and Yamkovenko (2007) conducted a study to analyze convergent and divergent associations between the LTSI constructs and the other comparison measures. Holton et al. (2007) identified 28 comparison measures after extensive review of the literature. Content validity and transfer design scales of the LTSI were excluded since their exact correspondent measures were not found due to program specific nature of these constructs. Holton et al. (2007) collected data from 237 respondents participating training programs in a large quasi-public organization in the United States. The correlation analysis was performed to evaluate the divergent and convergent validity of the LTSI. The correlations of each of the fourteen LTSI scales with the two planned comparison measures were examined. Results indicated that among twenty-eight planned correlations, twenty-six ones were found to be in the negligible or low range, only two of them fell into the moderate range of association. Results showed the high degree of divergence indicating the unique nature of the LTSI constructs.

Ruona, Leimbach, Holton and Bates (2002) investigated the relationship between utility reactions of the trainees and predictors of learning transfer measured through LTSI. The same sample of the Holton et al. (2000) study was used. Five items were selected from a pool of reaction items used to evaluate organizational training programs in terms of perceived utility of training. Pearson product-moment correlation analysis results indicated that all correlations between the participant utility reactions and the 16 LTSI constructs were significant and ranged from $r = .62$ to $r = -.16$ (p < .001). Among the LTSI constructs; *transfer design* (r = .62), *content validity* (r = .46), *motivation to transfer* (r = .55), *transfer effort - performance expectations* (r = .48), and *performance self - efficacy* ($r = .36$) were appeared as strongly correlated with perceived utility reactions of the participants.

Holton, Chen and Naquin (2003) designed a study to explore how transfer system characteristics differ across organizational settings. Holton et al. (2003) study sample was selected from the LTSI response database among the 4.562 respondents obtained from three countries. Since cross-cultural comparisons were out of the study concern, only the data obtained from the U.S. organizations included, hence 1.099 employees from the eight companies composed the sample of

the study. The authors used the scales of the LTSI as the dependent variables and *type of organization* and *type of training* were identified as the independent variables of interest. Organizations were classified under three types; *public sector*, *private sector* and *nonprofit organizations* and trainings were categorized into nine types; *supervisory*, *public management*, *computer skills*, *soft skills*, *new employee academy*, *business professional skills*, *job competency*, *leadership*, and *sales*.

Holton et al. (2003) performed multivariate analysis of variance (MANOVA) to examine the effects of organization type and training type on the transfer system characteristics measured by the LTSI scales. MANOVA analysis presented statistically significant results for organization type revealing that transfer system characteristics differed in terms of type of organizations. Univariate Analysis of Variance (ANOVA) results demonstrated that except for the *learner readiness* and *performance self-efficacy* scales, these were the constructs of the learner characteristics dimension of the LTSI, all of the scale means significantly different across organization types.

Post hoc comparisons illustrated that, in terms of public and private sector comparison, *performance-outcomes expectations*, *opportunity to use learning* and *personal capacity for transfer* scale means of private organizations were significantly higher than the public organizations. On the contrary, *supervisor sanctions*, *resistance to change*, and *personal outcomes negative* scales means higher for the public companies than the private ones.

Holton, Chen and Naquin (2003) pointed out that within the two of the three motivation scales of the LTSI, *motivation to transfer learning*, and *transfer effort-performance expectations*, non-profit organizations demonstrated higher scale mean scores than the public and private sector organizations. In terms of four of the seven environment scales; *performance coaching*, *supervisor support*, *peer support*, and *personal outcomes positive*, scale means of non-profit organizations were also higher than the public and private organizations. Regarding *supervisor sanctions*, and *resistance to change* scales, public organizations were found to have higher mean scores than the private and non-profit organizations. Results implied that

private sector employees recognize that increase in performance leads to valued outcomes, they have more opportunity to apply their learning and more personal capacity to transfer new learning. On the other hand, public sector employees perceive that their managers are inclined to oppose the use of new learning outcomes, they are more likely to face with resistance to change and negative personal outcomes if they do not use their training outcomes. MANOVA analysis were also presented statistically significant results for training types revealing that transfer system characteristics differed in terms of type of training. Post hoc comparisons indicated no significant differences in terms of *performance coaching*, *peer support* and *content validity* scales. New employee academy training participants evaluated *personal outcomes-negative* and *supervisor sanctions* scales higher but *opportunity to use learning* scale lower than any other training participants.

Holton, Chen and Naquin (2003) illustrated that respondents receiving job competency training weighted *motivation to transfer* scale lower than supervisory, public management, leadership, and sales training programs. Supervisory training participants rated *performance outcome-expectations* scale higher than the participants of public management, computer, soft skills, new employee academy, and job competency training programs. *Performance-outcome expectations*, *opportunity to use learning*, and *transfer design* scale means rated higher while *supervisor sanctions* and *personal outcomes-negative* scale means rated lower by the leadership training participants when compared to the new employee academy training participants. Participants of sales training evaluated *motivation to transfer*, *performance-outcome expectations*, *opportunity to use*, and *transfer design* scales higher whereas *supervisor sanctions*, *resistance to change*, and *personal outcomes-negative* scales lower than the respondents receiving new employee academy training. Holton et al. (2003) discussed that besides limitations regarding descriptive nature of their study, both organization type and training type were found to have influence on transfer system characteristics and these results suggesting the dynamic and context-bound essence of the transfer systems.

2.2.4. Cross-Cultural Research and Validity Evidences

LTSI v3 has been translated into 17 languages since 2001 and results of the several studies using translated versions have provided validity evidences supporting the factor structure of the instrument.

For example, Bates, Kauffeld, & Holton (2007) conducted a study to analyze the construct validity of the German version of the LTSI (G-LTSI) and whether scales of the G-LTSI are significant predictors of individual transfer results or not. Authors first translated LTSI into German through forward-backward translation process followed by the subjective evaluation of LTSI authors and objective evaluations of 18 raters experienced in training effectiveness research. Bates et al. (2007) collected data from seventeen private sector companies operating in Germany through purposive and convenience sampling procedures. Five hundred and seventy nine employees attended any kind of training programs provided by these organizations constructed the sample for the study. *Individual transfer results* and *organizational performance* were specified as the dependent variables composed of six items including five-point Likert-type response scale. Data for both outcome variables however, collected through self-report measures and obtained from the training participants.

Exploratory Factor Analysis (EFA) with principle axis factoring and oblique rotation method was performed separately for the two domains of the G-LTSI. The EFA resulted in extraction of the 11 factors explaining the 62.17 % of the total variance for the training-specific domain. Item loading patterns of the LTSI and G-LTSI were coherent except for the one item from the content validity scale loaded on the transfer design scale. The EFA for the training-general domain indicated five-factor solution explaining the 50.10 % of the common variance. Patterns of item loadings were also parallel between the original and German version of the LTSI for the training-general domain. The EFA results indicated that Holton et al. (2000) study results were replicated.

In order to test the predictive validity of the G-LTSI, Bates et al. (2007) performed two separate multiple regression analysis with stepwise models for the

two outcome variables of interest, *individual transfer results* and *organizational performance*, respectively. After controlling for the type of training and time since training variables, six of the G-LTSI scales; *motivation to transfer*, *personal outcomes positive*, *personal capacity to transfer*, *content validity*, *peer support* and *learner readiness* appeared as significant predictors of the individual transfer results and explained for the 43 % of the variance. In terms of organizational performance outcome variable, five scales of the G-LTSI; *performance-outcome expectations*, *openness/resistance to change*, *transfer effort-performance expectations*, *personal outcomes negative* and *personal outcomes positive* emerged as significant predictors and explained for the 20 % the variance. Authors concluded that EFA together with the regression results provide initial support for the construct validity of the German version of the LTSI.

Parallel to the Bates et al. (2007) Devos, Dumay, Bonami, Bates and Holton (2007) translate the LTSI into French and designed a study to examine the factor structure of the translated version and whether or not scales in the LTSI are able to predict effective transfer of training. Devos et al. (2007) followed the identical instrument translation procedure applied by the Bates et al. (2007) study, and French version of the LTSI, F-LTSI, was produced. Devos et al. (2007) obtained data from six companies placed in the French-speaking community of Belgium. Three hundred and twenty eight trainees have been completed the F-LTSI averagely 6.8 days after their training program. Transfer of training data was collected through a self-report measure of training transfer questionnaire composing of nine items ($\alpha=.91$). Training transfer questionnaire was sent to training participants within the 1-3 month range after completion of the training programs, and a total of 106 participants responded.

Devos et al. (2007) analyzed the internal structure of the F-LTSI by principal component analysis (PCA) with an oblique rotation. The results of PCA revealed the same pattern with the Holton et al. (2000) study that are 11-factor structure for the training-specific domain explaining for the 68.8 % of the common variance and 5-factor structure explaining the 59.8 % of the total variance. Internal consistency measures of the scales were ranged from .64 to .93. In terms or predictive ability of

the F-LTSI, correlational relations between the training transfer score and sub scales were examined. *Learner readiness*, *transfer design*, *motivation to transfer*, *opportunity to use*, *transfer effort-performance expectations*, *performance-outcome expectations*, and *self-efficacy* were found to be significantly correlated with the training transfer score. The authors concluded that although self-report nature of the transfer data and preference of exploratory factor analytic procedure rather than the confirmatory one provided limitations for the findings, however both PCA and correlational results yielded evidence for soundness of internal structure and predictive ability of the French version of the LTSI.

Besides studies providing exact replication of the 11 and 5 factor dual structure of the LTSI demonstrated in the Holton et al. (2000) study, several other studies were reported supportive evidence of the factor structure of the LTSI with minor discrepancies. For example, Khasawneh, Bates and Holton (2006) translated LTSI into simplified Arabic language through a rigorous translation processes that is used by Bates et al. (2007) and Devos et al. (2007) studies. Khasawneh et al. (2006) collected data from several public and private sector organizations performing in Jordan. A total of 28 organizations providing in-service training to their employees included in the study and 450 subjects completed the simplified Arabic version of the LTSI.

EFA results of the Khasawneh et al. (2006) revealed that 12-factor solution emerged and explained for the 57.24 % of the total variance for the training-specific domain which originally has 11-factor structure. Ten of the emerging factors were identical with the original factors however *personal outcomes negative* factor did not appeared and *environmental obstacles to transfer* and *job space and transfer consequences* factors arose. In terms of training-general domain, the six-factor solution explaining the 56.85 of the common variance was emerged and the only difference from the original factor structure was splitting of the *feedback* scale into two: (1) feedback-verbal advice and (2) feedback-behavioral help. These results indicated that, with minor differences, factor structure of the Arabic version of the LTSI was closely similar with the original LTSI.

Yaghi, Goodman, Holton and Bates (2008) translated LTSI to the classical Arabic language to reach broader audiences in the Arabic-speaking countries than the Khasawneh et al. (2006) simplified Arabic version translation. Yaghi et al. (2008) applied classical Arabic LTSI (CA-LTSI) to the middle and low level managers of public service organizations operating in Jordan. Participants were randomly selected among Ministry of Education, Ministry of Higher Education and Scientific Research, and University of Jordan. The authors collected data from 500 respondents who were participated training programs in the last 12 months within their organizations.

Yaghi et al. (2008) executed exploratory common factor analysis with oblique rotation on the data. Results of EFA on training-specific domain resulted in 14 factors explaining the 65.05 % of the common variance. Additional to 11 factors of the original LTSI, authors reported that there were 3 new factors emerged with the separation of the items from the *opportunity to use*, *supervisor sanctions* and *personal capacity to transfer*. However, the reliability coefficients of these three newly emerging factors were below .58 and were not considered as having sound internal consistency measures. Training-general domain EFA results of the Yaghi et al. (2008) study illustrated the four-factor structure explaining the 55.94 % of the total variance. *Performance-outcome expectations* scale was not appeared although the remaining four factors of the training-general domain were emerged. Yaghi et al. (2008) concluded that 15 factors of the original LTSI were observed through exploratory factor analytic approach indicating the cross-cultural validity evidence of these constructs.

In another parallel study, Chen, Holton and Bates (2005) translated LTSI to Mandarin Chinese to be used in the Taiwan. The authors collected data from wide range of organizations including civil service, education, electronic, insurance, petroleum, retail, social work, telecommunication and transportation, and reached 583 trainees attended in service training programs in these companies. Chen et al. (2005) performed exploratory common factor analysis with oblique rotation on the training-specific and training-general domains of the translated LTSI. Results revealed the ten factor structure for the training-specific domain explaining for the

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65 % of the common variance. Only difference from the original LTSI factor structure was the merging of *transfer design* and *opportunity to use* scale items. This new factor was called *transferability* and described as the extent to which trainees perceive that training is designed to promote opportunity to use their learning.

In terms of training-general domain, the EFA results of the Chen et al. (2005) study demonstrated the exact replication of the five-factor structure of the Holton et al. (2000) study. The five-factor solution explained the 61.4 % of the total variance. All the identified factors have internal reliability measure range of .78 to .92 however the only exception was the *learner readiness* scale that was .65. Chen et al. (2005) pointed out that fourteen emerged factors from the Taiwan data were identical to the previously validated factors of the original LTSI. Further, since newly emerging factor labelled as transferability, included transfer design and opportunity to use scale items there was no data loss regarding the construct structure of the instrument. Chen et al. (2005) concluded that results indicated cross-cultural validity evidence for the construct structure of the LTSI.

Another study designed to expand the cross-cultural validity evidence of the LTSI was conducted by Yamkovenko, Holton and Bates (2007) in Ukraine. Yamkovenko et al. (2007) first translated LTSI to Ukrainian Language through the same translation methodology that was followed in the Jordan and Taiwan studies described above. The authors collected data from public and private organizations operating in health, education sectors, mainly. The organizations providing in-service training programs to their employees were selected through convenience and purposive sampling methodology. These organizations were provided the Ukrainian version of the LTSI, U-LTSI, informed about the purpose of the questionnaire and fulfilling procedure. 430 fully completed questionnaires were returned to the authors.

Yamkovenko et al. (2007) analyzed factor structure of the U-LTSI through the exploratory factor analytic approach. Selection of EFA procedure over the confirmatory one was explained by the authors as U-LTSI has been tested first time in a new cultural environment. Principal Axis Factoring with oblique rotation was performed separately on the two construct domains of the instrument. Results

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demonstrated the 11-factor structure of the training-specific and 5-factor structure of the training-general domains. Although all of the 16 factors of the LTSI emerged in the data reduction process, *opportunity to use* and *performance-outcome expectations* scales included two and three items respectively and their items have relatively low loadings. Yamkovenko et al. (2007) discussed the influence of the socialist and collectivist past of the Ukrainian Society over the blurry emergence of these factors. The authors concluded that this study provided further evidence of cross-cultural validity of the LTSI, despite the use of exploratory factor analytic approach.

2.3. Training Transfer and the Turkish Context

Research studies related into the transfer of training in Turkey are limited. There are few descriptive studies oriented qualitatively to obtain opinions of employees and managers regarding training effectiveness and transfer of training (Basat, 2010; Dönmez, 2005). In addition to these studies, one experimental study was conducted by Gümüşeli and Ergin (2002) on the role of managers in training transfer.

Basat (2010) conveyed a qualitative study to obtain employees and managers point of view regarding the factors affecting training transfer. The author conducted interviews with the participants of the training programs delivered in 2008, and 2009 within the CBRT. Results of content analysis indicated that relevancy of the training content with the task and duties performed, support of the managers to the transfer of learning outcomes to job, motivation to participate a training program were found to be perceived as highly related to the training transfer.

Another study administered by Dönmez (2005) concentrated on evaluation of the communication skills training program delivered for the participants of a private company operating in Turkey. The author used the case study method to investigate the effectiveness of the training program through perceptions of the training participants. Qualitative and quantitative analysis of the self-report data revealed that participants acquired the targeted communication skills by the training program.

Finally, a study was conducted by Gümüşeli and Ergin (2002) focusing on the influence of the supportive role of the managers on the transfer of the learning outcomes to job context. The authors selected basic sales training program designed for the 20 sales representatives working for the Coca-Cola Bottlers of Turkey. Participants were randomly divided into two after the training program, and participants of the experiment group were supported and guided by the training department regarding their responsibilities in transfer of training into job. Managers of the experiment group were also informed, before the training program and during the follow-up period, about their roles and responsibilities in improving training transfer. Gümüşeli and Ergin (2002) collected the follow-up transfer data 30 and 90 days after the training program. Both the results of the skill transfer forms results, and productivity and effectiveness measures data revealed significant results indicating that there was a greater change in the behaviors of those who are guided and supported by their immediate managers.

2.4. Summary of the Review of the Literature

Research has demonstrated that training transfer literature was complex and influenced by variety of factors. Blume, Ford, Baldwin, and Huang (2010) reported that there was a significant variability in findings across transfer studies in the last 20 years. Based on the training transfer literature, learner characteristics, training design and delivery, and work environment variables are identified as the factors affecting transfer of training (Baldwin & Ford, 1988; Burke, & Hutchins, 2007; Blume, Ford, Baldwin, & Huang, 2010).

Cognitive ability, self-efficacy, pre-training motivation, perceived utility, and locus of control are the variables that their influences on training transfer have been well demonstrated (Burke & Hutchins, 2007). Training design and delivery includes plentiful variables, usually through their influence on learning, including content relevancy, practice and feedback, overlearning, and behavior modeling (Burke & Hutchins, 2007). On the other hand, work environment factors were shaded by learner characteristics and training design factors for many years prior to Baldwin and Ford's (1988) review indicating supervisory support and opportunity to perform as critical components of improved training transfer. Researchers

conceptualized work environment factors as training transfer climate, and pointed out that transfer phenomenon cannot be isolated from the organizational context (Rouiller & Goldstein, 1993; Tracey & Tews, 2005). Situational cues and consequences, managerial support, job support, organizational support, resistance to change, positive and negative personal outcomes are the variables that their impact on transfer were demonstrated by the several studies (Holton, Bates, & Ruona, 2000; Rouiller & Goldstein, 1993; Tracey & Tews, 2005).

Finally, Holton and colleagues suggested transfer system model which is defined as all factors in the individual, training and organizational context that influence transfer to work performance (Holton et al., 2000). The constructs included in this model were operationalized and measured by the developed Learning Transfer System Inventory (LTSI) that was used in the current study.

CHAPTER 3

METHOD

This chapter provides an overview of the research design, research questions, data sources, protection of human subjects, data collection instruments, data collection procedures, data analysis procedures, and limitations.

3.1. Research Design

This study was designed to examine the influence of transfer system factors on training transfer at the CBRT. This study was utilizing the survey research design. Data for the factors affecting training transfer collected through an inventory called T-LTSI and several questions for certain demographic characteristics of the trainees and some organizational variables. The T-LTSI was administered to trainees at the end of the training programs delivered by the CBRT Training Center between May 2013 and March 2014.

First, underlying factor structure of the T-LTSI was examined through exploratory common factor analysis with oblique rotation. Secondly, relationship between the extracted constructs of the T-LTSI and selected individual and organizational variables were analyzed using multivariate analysis of variance (MANOVA). Finally, the predictive ability of the T-LTSI constructs to account for variance in training transfer scores of the security officers training program participants was examined using multiple regression analysis.

3.2. Research Questions

This study addressed the following three research questions:

(1)   Do perceptions of the trainees on the T-LTSI factors differ in terms of demographic characteristics including gender, education level, and work experience?

(2)   Do perceptions of the trainees on the T-LTSI factors differ in terms of *work unit of the trainees*, *training type,* and *participation type* (*voluntary or obligatory*) in the training?

(3)   How well do the work environment factors predict training transfer more than other factors of the T-LTSI (trainee characteristics, motivation, and ability/enabling scales) in terms of training transfer scores of the 'Security Officers Training Program' delivered by the Training Center of the CBRT?

3.3. Data Sources

The population of the study was CBRT employees from Head Office Departments, Banknote Printing Plant, and 21 Branches of the CBRT. The sample for this study composed of the CBRT employees who attended training programs delivered by the 'Training Center' of the Human Resources Department between May 2013 and March 2014. The sample was drawn through convenience sampling procedure. Almost all of the training programs included in the 2013 training plan of the CBRT Training Center were covered by the study except for the training programs having different design and delivery characteristics compared to the majority of the programs. These excluded trainings programs were orientation training program designed for novices (novice employees have no experience in the CBRT to answer the T-LTSI questions), shooting practice training designed for security officers (a fifteen-minute shooting practice), and first aid certification programs designed by depending on the legal framework.

A total of 30 different training programs delivered in 42 groups were included during the data collection process. Examples of the training programs

included in the study were: legal aspects of banking issues, taxing regulations, career development of security guards, presentation skills in English, Excel, financial econometrics, Drupal 7.0. (software program), conflict management training, and security officers training. Out of 789 training participants, 609 of them accepted to participate in the study and filled the T-LTSI. The response rate was 77 %. Appendix B provides the summary information about the name of the trainings, number of groups delivered, duration and language of the training programs, together with the number of each training participants, and the T-LTSI respondents included in the study.

The demographic data collected within this study included gender, age, educational level, work unit/department, years of work experience in the CBRT, number of training programs attended in the last year, type of participation (voluntary or mandatory), type of training, and main goal for participation to training.

In the present study, T-LTSI respondents ($n=$ 609) was the main sample, and security officers training program participants subjected to transfer evaluation survey ($n=$95) was the sub-sample. Security officers training program participants were subjected to the transfer evaluation survey three months after the training program where they responded the T-LTSI.

3.3.1. Sample Information - T-LTSI Respondents

In terms of gender, 34 % of the participants was female ($n = 206$) and the rest was male (66 % or $n = 400$). The respondents were asked to report their age by marking one of the six categories. Most of the participants were in the age category of 26 –35 (44.6 %). Only 4 % ($n = 24$) of the participants were under the age of 25, and 1.3 % ($n = 8$) was between 56 and 65. No participants were older than 66 years.28.8 %, and 21.3 % of the participants were in the 36 – 45, and 46 – 55 age categories, respectively. Table 3.1. presents the summary of the age distribution for the sample.

Table 3.1.

Sample Description by Age

Age (in years)	*f*	*%*
≤ 25	24	4.0
26 - 35	270	44.6
36 - 45	174	28.8
46 - 55	129	21.3
56 - 65	8	1.3
Total	605	100

Regarding educational level of the respondents, more than half of the sample (58.7 % or $n = 356$) had a Bachelor's degree, 30.9 % of them ($n = 187$) had a graduate degree (MS/PhD), and only 10.4 % of them ($n = 63$) had a high school or less degree. Table 3.2. provides the education level of participants.

Table 3.2.

Sample Description by Education Level

Education	*f*	*%*
High School or less	63	10.4
Bachelors' Degree	356	58.7
Graduate Degree (Master/Doctorate)	187	30.9
Total	606	100

Table 3.3. presents the work experience of the respondents in the CBRT, in years. 24.5 % of the respondents fell into 6-10 year category, 22.6 % of them was in the 21 year or more category. 16 % of the participants had a work experience of less than 2 years. The rest of the participants were evenly distributed to 11-15 and 16-20 categories.

Table 3.3.

Sample Description by Work Experience in Years

Work Experience (in years)	*f*	*%*
< 2	97	16.0
2 – 5	52	8.6
6 – 10	148	24.5
11 – 15	102	16.9
16 – 20	69	16.4
≥ 21	137	22.6
Total	605	100

In terms of work unit/department, head office departments and branches have same proportion (% 45.5), and respondents from the Banknote Printing Plant was 8.9 %. Table 3.4. provides a distribution of respondents by work unit.

Table 3.4.

Sample Description by Work Unit

Work Unit	*f*	*%*
Head Office Departments	276	45.5
Branches	276	45.5
Banknote Printing Plant	54	8.9
Total	606	100

Participants were also asked whether their participation in the training they responded to the T-LTSI was voluntary, mandatory (legal requirement), or management decision. Over 40 % of the respondents reported that their participation decided by their managers without their demand (41.5 %). 20.6 % of them indicated

that their participation was mandatory (required legally) and 37.9 % of them reported that their participation was voluntary. Table 3.5. provides information about type/choice of the participation.

Table 3.5.

Sample Information by Type of Participation

Type of Participation	f	%
Voluntary	229	37.9
Mandatory (Legal Requirement)	125	20.6
Decided by Managers	251	41.5
Total	605	100

Table 3.6. provides information about the participation purpose of the respondents engaging in the training program in which they responded to the T-LTSI. Among the listed goals following proportions were reported; personal growth/self-improvement 10.9 %, upgrade skills for current job 30.1 %, acquire new skills for current job % 38.6, preparation for a new career 3 %, required to attend by manager 16.2 %, and for interest only 1.2 %.

Participants were asked about the number of training attended last year in the CBRT. 61.7 % of the respondents indicated that they were attended only one training program, 29.5 % of them attended two trainings, 7.3 % of them attended three trainings, and 2 % of them attended 4 or more training programs.

Table 3.6.

Sample Information by Participation Purpose

Participation Purpose	*f*	*%*
Personal Growth	66	10.9
Skill Upgrading for Current Job	182	30.1
Skill Acquisition for Current Job	233	38.6
Next Career Preparation	18	3.0
Required to Attend by Managers	98	16.2
For Interest Only	7	1.2
Total	604	100

Table 3.7. provides information about the type of the training program in which participants responded to the T-LTSI. Training type was not asked directly to the T-LTSI respondents. Since the CBRT Training Center organized all training programs, their classification was made by the researchers, according the categorization used by the Training Center. Training programs that were designed for the technical skill upgrading and/or skill acquisition were categorized as occupational/technical programs such as 'An Introduction to General Equilibrium Models', 'Financial Econometrics', 'Tax, Wages, Per Diem Allowances', 'Credit Report Training', 'Legal Aspects of Banking Issues', etc.

Table 3.7.

Sample Information by Type of Training

Type of Training	*f*	*%*
Occupational/Technical	421	69.5
Computer (software)	82	13.5
Career Development	18	3.0
Personal Growth	85	14.0
Total	606	100

Training Programs designed for the computer software usage were coded computer (software) programs including 'Drupal 7.0', 'EXCEL', 'ORACLE - Business Intelligence', etc. Career development programs were the ones delivered for the specific positions with the aim of preparation of the participants to the next position in the career ladder and only 'Career Development of Security Guards' training placed under this category. Finally, personal growth programs were the ones designed for the interpersonal skills such as 'Conflict Management', 'Code of Conduct in Public Sphere'.

Among the 30 different training programs delivered, almost 70 % of them were technical, 13.5 % of them were computer (software), 14 % of them were related with personal growth, and only 3 % of the total training programs were related with career development.

The sample of the first phase of the study was represented the whole CBRT population (n = 4.659) in terms of gender, work unit. In terms of gender, one-third of the CBRT population was female (n = 1.553) as it was in the study. In terms of work unit, 43 % (n = 2.008), 43 % (n = 2.021), and 14 % (n = 630) of the CBRT population was working in the Head Office, Branches, and Banknote Printing Plant, respectively. These ratios were very close to the 45.5 %, 45.5 % and 8.9 % of the sample information, presented in the same work unit order. In terms of work experience however, except for the 6-10 and 11-15 year categories, sample was not represented the whole population. Table 3.8. provides the sample and total population information regarding the work experience, in years.

Table 3.8.

Sample and the CBRT Description in terms of Work Experience

Work Experience (in years)	f - (%)	
	Sample	*CBRT*
1 – 5	149 (24.6)	579 (12.4)
6 – 10	148 (24.5)	1.012 (21.7)
11 – 15	102 (16.9)	674 (14.5)
16 – 20	69 (16.4)	405 (8.7)
≥ 21	137 (22.6)	1.989 (42.69)
Total	605	4.659

3.3.2. Sub-Sample Information - Transfer Evaluation Survey Participants

In the second phase of the study, security officers training program participants was subjected to transfer evaluation survey. Training participants were evaluated by their immediate supervisors. Out of 105 attendants of the security officers training program, 101 of them were provided transfer evaluation scores by their managers, and finally 95 security officers' transfer evaluation scores were used in answering the third research question.

In terms of gender, there was only one female (% .01) placed in the security officers training program, and the rest was male (99 %). This ratio was not surprising however, and exactly represented the security officers gender distribution at the CBRT. In the total population of security officers working at the Head Office, Ankara Branch, and Banknote Printing Plant there were only two female out of 160 security officers.

Table 3.9. provides the information about the education level of the sub-sample of the study. 66.3 % of the participants had a Bachelor's degree, 27.4 % of them had a graduate degree, and only 6.3 % of them had a high school or less degree.

Table 3.9.

Sub-Sample Description by Education Level

Education	*f*	*%*
High School or less	26	27.4
Bachelors' Degree	63	66.3
Graduate Degree (Master/Doctorate)	6	6.3
Total	95	100

In terms of work unit, 45.3 % of them from the Head Office, 26.3 % of them from the Ankara Branch, and 28.4 % of them from the Banknote Printing Plant. Table 3.10. provides the information about the work unit of the sub-sample of the study.

Table 3.10.

Sub-Sample Description by Work Unit

Work Unit	*f*	*%*
Head Office Departments	43	45.3
Branches	25	26.3
Banknote Printing Plant	27	28.4
Total	95	100

Table 3.11. provides the information about the work experience of the sub-sample of the study. 7.4 % of the participants fell into 6-10 year category, 20 % of them was in the 11-15 year category, and the rest was evenly distributed among 16-20, and 21 and more years categories.

Table 3.11.

Sub-Sample Description by Work Experience in Years

Work Experience (in years)	*f*	*%*
6 – 10	7	7.4
11 – 15	19	20
16 – 20	32	33.7
≥ 21	37	38.9
Total	95	100

3.4. Protection of Human Subjects

The human rights of the respondents were protected in this study. Purpose, content and instruments of the study were reviewed by the Ethical Council of the Middle East Technical University (METU) and approved (see Appendix C for the approval letter). Trainees participating in the study were informed verbally by

the researcher and they were given informed consent form about the purpose of the study, and the time it takes to complete the questionnaire (see Appendix D for the informed consent form for the T-LTSI).

Participants were also informed that nature of participation was voluntary, responses to the survey were anonymous, and use of the data was limited to the researcher. The data collection tool for this study was a survey instrument comprised of the T-LTSI, and several demographic and organizational variables. Training transfer data was collected through transfer evaluation surveys that were designed for the conflict management, and security officers training programs. The participants of these training programs were given second informed consent form about the purpose and scope of the training transfer evaluation survey (see Appendix E for the informed consent form for the security officers training transfer evaluation survey).

3.5. Data Collection Instruments

Turkish version of the LTSI (T-LTSI), and Security Officers Training Transfer Evaluation Questionnaire were used in the study to collect the data. Following sections reviews each of the data collection instruments.

3.5.1. Instrument Adaptation Process and the T-LTSI

As described elaborately in the specific section of the literature review chapter, the LTSI was developed and revised by Holton and colleagues through series of studies (Bates, Holton, & Hatala, 2012; Holton, Bates, & Ruona, 2000; Holton, Bates, Seyler, & Carvalho, 1997). Permission to use the LTSI was granted by the authors of the instrument (see Appendix F for the letter of permission of the LTSI).

Translation of the original English version of the LTSI into the Turkish Language was needed in order to use the instrument in Turkey. By consulting with the authors of the LTSI, back-translation approach (Brislin, 1970) was decided since the efficiency of this approach was demonstrated in other cross-cultural LTSI studies conducted in Germany, France, Jordan, Taiwan, and Ukraine (Bates, Kauffeld, & Holton, 2007; Chen, Holton, & Bates, 2005; Devos, Dumay, Bonami, Bates, & Holton, 2007; Khasawneh, Bates, & Holton, 2006; Yamkovenko, Holton, & Bates, 2007).

According to the back-translation approach, the instrument is translated by one or more bilingual experts from the source language into the target language which is forward translation. A second bilingual expert or experts, without knowledge of the original instrument, back translates the instrument to the source language. If any discrepancies in meaning are diagnosed in the back-translated items when compared to the original ones, the items which are in question are retranslated and back-translated again by another group of bilingual experts.

In order to obtain equivalency in meaning between the original and translated version of the instrument, a rigorous English-to-Turkish translation process was used. Translation procedures used in this study are summarized below:

1. *Forward translation*. The items included in the LTSI were translated into Turkish Language by two training experts, and the researcher himself, working at the CBRT Training Center. One of the forward translators has a PhD degree on curriculum and instruction, and the other one is a PhD student on the same program. All forward translators have been Bachelors' of Science and masters' degree on psychology and expertise on testing and measurement. They were informed about the purpose of the translation which is to retain the form and the meaning of each item as closely as possible to the original item, emphasizing the priority on meaning. Each of the translators produced their own individual translations, further they analyzed the results, discussed the differences, and reached consensus together on one final Turkish version.

2. *Back translation*. Two different bilinguals, one of them is PhD student on organizational behavior and the other one is free-lance translator, who had never heard about the LTSI, translated the Turkish version of the LTSI back to English.   Each of the translators produced their own individual translations, analyzed the results, discussed the differences, and reached consensus on one final English version.

3. *Subjective evaluation (assessment of clarity and correctness)*. Back-translated LTSI items returned to the LTSI authors to compare both English versions in terms of equivalency in meaning of the items. Only discrepancy was found in the item 14 due to use of the word 'happening' in the original item. The *happening* word was evaluated positively by the forward translators although the meaning of the word was negative in English. Original item 14 was translated again by another bilingual who had lived and got an MBA degree in the U.S. Back translation of that item was found functionally equivalent of the original item by the authors of the LTSI. Hence, all items in the Turkish version of the LTSI (T-LTSI) were evaluated as equivalent in meaning with the original correspondents, by the authors of the LTSI.

4. *Pre-test of the T-LTSI*. A group of seven individuals including two training specialists, three human resources specialists, one official, and one deputy

manager were invited from the Human Resources Department of the CBRT to complete the T-LTSI. After completing the instrument, respondents provided their subjective assessment about the clarity of instructions and items. Further, respondents were given a 48-item questionnaire aiming at assessing clarity of the items, and appropriateness of the technical language used. 7-point Likert type scale was used in the questionnaire. In order to assess the clarity of the items; (1) not understandable at all – (7) completely understandable; and for the appropriateness of the technical language (1) not appropriate at all – (7) completely appropriate scale definitions were used. In terms of clarity of the items, average mean of the 48 items were 6.43 and regarding the appropriateness of the items, average mean of the 48 items were 6.13. Higher mean scores of the questionnaire results together with the positive subjective evaluations of the respondents about the clarity and fluency of the instructions and items of the instrument yielded that T-LTSI was ready for use in the study.

After completion of the translation process, 48-item T-LTSI was formed. As identical with the original version, T-LTSI was composed of two sections. The first section contains 11 training-specific constructs and 33 items that reference a specific training program attended by the participants. The constructs of the training-specific section are *learner readiness*, *motivation to transfer learning*, *personal outcomes-positive*, *personal outcomes-negative*, *personal capacity for transfer*, *peer support*, *supervisor/manager support*, *supervisor/manager opposition*, *perceived content validity*, *transfer design*, and *opportunity to use learning*.

The second section of the instrument includes 5 training-general constructs and 15 items that reference training-in-general in the respondents' organization. The constructs of the training-general section are *performance self-efficacy*, *transfer effort-performance expectations*, *performance-outcome expectations*, *performance coaching*, and *resistance to change*.

Table 2.3. (p. 34) illustrates the training-specific and training-general domains distinction, and Appendix A provides complete review of the construct and

construct definitions. Respondents were requested to provide ratings to the items by using a 5-point Likert type scale with following scale definitions: (1) strongly disagree, (2) disagree, (3) neither disagree nor agree, (4) agree, and (5) strongly agree.

The next section following the constructs of the T-LTSI included several demographic and organizational variables formulated by the researcher. These items asked respondents about the name of the training program attended, type of participation, main goal of engaging in the training, number of training programs attended provided by the CBRT, gender, age, level of education, work department, and work experience in the CBRT. Training duration and type of the training program were not asked directly to participants since all the programs delivered and/or organized by the CBRT Training Center, and known by the researcher. The instrument took about 12-15 minutes to complete. Appendix G provides the final version of the T-LTSI.

3.5.2. Factor Structure of the T-LTSI, and Internal Consistency Measures of the Scales

Prior to the analyses performed for the research questions, psychometric qualities of the T-LTSI were analyzed. Factor structure of the T-LTSI, and internal consistency measures of the constructs were analyzed, through factor analysis and Cronbach's alpha, respectively.

In the first run, factor structure of the T-LTSI was analyzed. Before conducting factor analysis, accuracy of the computerized data file, missing data, outliers, and assumptions of the factor analysis were checked.

Accuracy of the computerized data file was checked through random selection of 61 cases (10 % of the total cases), and no mismatch was found between original and the computerized data in terms of selected cases. Exploration of the descriptive statistics indicated that there was no out of range scores. Only twelve missing values were observed among 609 subjects regarding responses to 48 items

of the T-LTSI. The ratio of missing cases to total observations was below 0.01 %, hence pattern of missing data was not investigated (Tabachnick & Fidell, 2001). Twelve missing values were imputed using the responses of the same subject which has a missing value, by calculating the means of the other two variables of the same sub-scale. For example, missing value of the item from *personal outcomes-positive* scale was replaced with the means of the other two items from the same scale. Missing values were imputed for not losing the complete case just because of the single missing response to one of the T-LTSI items, and having sound predictor values to be used in the imputation.

Univariate influential observations (outliers) were checked through z-score examination. Raw scores were converted to z-scores and checked whether any of them exceeds the critical value of -3.29 and + 3.29 (Tabachnick & Fidell, 2001). A total of 68 cases, exceeding the critical z-score value in 111 times, were identified. Multivariate outliers were checked through Mahalanobis distance. Critical value of the chi square was found as $\chi^2 (50) = 86,66$ (p < .001) from the 'Critical Values of Chi Square Table' in Tabachnick & Fidell (2001), and 49 cases were identified as multivariate outliers. Only three of the univariate outliers (37, 234, and 244) were excluded from further analysis since they were found univariate outliers repeatedly on 5 or more items of the T-LTSI and as well as they were identified as multivariate outliers.

In terms of normality, frequency histograms are analyzed together with the skewness and kurtosis values of the T-LTSI items. Thirteen items found to have skewness and kurtosis values exceeding -1 to +1 range indicating violation of normal distribution parameters. Significant Kolmogorov-Smirnov statistics were also supported non-normal distribution of these items. Although normality assumption is one of the most fundamental assumptions in multivariate analysis, assessing the impact of violation of it is also critical (Hair, Black, Babin, Anderson, & Tatham, 2006). As well as skewness, and kurtosis parameters regarding shape of the distribution, impact of sample size should also be considered. According to the Hair et al. (2006) sample size has the effect of increasing statistical power by diminishing sampling error, and similarly larger sample sizes reduce the detrimental

effects of non-normality. The authors stated that, in sample sizes of 200 or more, researchers could be less concerned about non-normal variables. Since the sample size of the current study is over 600 that is triplicate the size specified by the Hair et al. (2006), non-normal distribution of single T-LTSI items ignored by the researcher.

With respect to the appropriateness of the data to run factor analysis, Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, and Bartlett's test of sphericity were conducted. Hair et al. (2006) reported that KMO value greater than .60, and significant Bartlett's test of sphericity indicated the appropriateness of the data, in terms of the factorability of the correlations among variables, for the factor analysis. KMO measure of sampling adequacy for the 48-item T-LTSI was .89, and Bartlett's test of sphericity was significant ($p < .001$). Further, respondents-to-item ratio was 18:1 for the for the training-specific domain, and 40:1 for the training-general domains indicating the very acceptable sample size, since they were exceeding 10:1 ratio according to the Hair et al. (2006).

Exploratory Factor Analysis (EFA) was preferred since this is the first study collecting data with the Turkish version of the LTSI. Other cross-cultural validation studies of the LTSI also preferred EFA approach over the confirmatory one (Bates, Kauffeld, & Holton, 2007; Yamkovenko, Holton & Bates, 2007; Khasawneh, Bates & Holton, 2006; Chen, Holton, & Bates, 2005). In terms of extraction method, common factor analysis was preferred when compared to the principal component analysis, due to disadvantages of the latter that are; usage of it only in data reduction, and lack of its ability to indiscriminate between shared and unique variance. If the aim is to discover the underlying factor structure of an instrument, as it was the case in this study, common factor analysis was more appropriate because it avoids the inflation of variance accounted by error variance (Costello & Osborne, 2005).

Principal Axis Factoring (PAF) was selected since Costello and Osborne (2005) reported that in case of violation of normality assumption PAF is the best choice. Oblique rotation method (with direct oblimin) was preferred over the

orthogonal rotation because of low to moderate level correlations among the factors of the LTSI emerged in the studies referenced in the paragraph above. The factor pattern matrix was used since the question of interest is explaining the unique variance accounted for by each factor.

Decision on the number of factors to be retained was based on scree test results, and factors with eigenvalues greater than one criterion. Together with these measures, a pre-determined number of factors on prior research, and interpretability of the final solution were also considered. Factor correlation matrix was also reported.

Cronbach's alpha was calculated on each of the identified constructs in exploratory factor analysis phase, as an internal consistency measure. According to Nunnaly and Bernstein (1994), Cronbach's alpha measure of minimum .70 was required for demonstrating the internal consistency of scales.

3.5.2.1. Training-Specific Domain

Training-specific domain of the T-LTSI requested respondents to associate their responses to the specific training program that they participated. This domain consisted of 11 scales, and 33 items. KMO measure of sampling adequacy was .88 and Bartlett's test of sphericity was significant (p < .01). Principal axis factoring together with the oblique rotation was performed on the items of the training-specific domain.

Initial analysis, without specifying how many factors to retain, resulted in 9 factors explaining the 69.70 % of the cumulative variance. Examination of this factor solution, however, indicated that first factor composed of 8 items from motivation to transfer learning, transfer design, and opportunity to use learning scales, and two of the items were cross-loaded to other factors. Examination of the scree plot implied the emergence of tenth factor which has eigenvalue of .85 and explaining the additional 2.55 % of the cumulative variance. Based on these results, exploratory factor analysis was run by determining 10 factors to extract. Ten-factor solution appeared to provide a more meaningful and sound factor structure, in terms

of both conceptually and theoretically, framing the training-specific transfer system factors in Turkey.

The 10-factor solution explained 73.22 % of the cumulative variance, produced a more meaningful factor structure and was found to be highly consistent with the version four of the original LTSI (Bates et al., 2012). The ten factors extracted were named and described identically with their original correspondents. All the scales composed of three items except for the motivation to transfer, and transfer design scales composing of four items. Internal consistency measures of the factors were given in parenthesis right after the name of the factors. These factors were described below:

1. *Motivation to Transfer Learning* (α = .86). The first factor explained the 26.78 % of the total variance, and measures the direction, intensity, and persistence of effort toward utilizing in a work setting skills and knowledge learned in training. The sample item is 'When I leave this training, I can't wait to get back to work to try what I learned'.

2. *Personal Outcomes – Negative* (α = .73). The second factor explained the 9.92 % of the total variance, and measures the extent to which individuals believe that if they do not apply new skills and knowledge learned in training that it will lead to outcomes that are negative. The sample item is 'If I do not utilize this training I will be cautioned about it'.

3. *Supervisor/Manager Opposition* (α = .82). This factor explained the 7.98 % of the total variance, and measures the extent to which individuals perceive negative responses from managers when applying skills learned in training. The sample item is 'My supervisor will probably criticize this training when I get back to the job'.

4. *Learner Readiness* (α = .81). The fourth factor explained the 5.84 % of the total variance, and measures the extent to which individuals are prepared to enter and participate in a training program. The sample item is 'I knew what to expect from this training before it began'.

5. *Perceived Content Validity* (α = .86). This factor explained the 4.69 % of the total variance, and measures the extent to which the trainees judge the training content to accurately reflect job requirements. The sample item is 'I like the way this training seems so much like my job'.

6. *Peer Support* (α = .83). The sixth factor explained the 4.45 % of the total variance, and measures the extent to which peers reinforce and support use of learning on-the-job. The sample item is 'My colleagues will appreciate my using the new skills I learned in this training'.

7. *Personal Outcomes – Positive* (α = .76). This factor accounted for the 3.99 % of the total variance, and related to the degree to which applying training on the job leads to outcomes that are positive for the individual. The sample item is 'If I use this training I am more likely to be rewarded'.

8. *Supervisor/Manager Support* (α = .84). This factor explained the 3.60 % of the total variance, and measures the extent to which managers support and reinforce the use of learning on-the-job. The sample item is 'My supervisor will meet with me to discuss ways to apply this training on the job'.

9. *Personal Capacity for Transfer* (α = .60). The ninth factor accounted for the 3.39 % of the total variance, and measures the extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job. The sample item is 'I do not have time to try to use this training on my job'.

10. *Transfer Design* (α = .87). The last factor explained the 2.56 % of the total variance, and related to the extent to which training has been designed to give trainees the ability to transfer learning to job application. The sample item is 'It is clear to me that the people conducting this training understand how I will use what I learn'.

All of the original items from the training-specific domain of the LTSI were loaded on the expected scales except for the opportunity to use scale items. Examination of the item-factor loadings indicated that one item from the

opportunity to use learning scale was cross-loaded on six factors with a maximum loading of -.26, and deleted. Among the remaining two items of the opportunity to use learning scale, one item loaded on the motivation scale and the other loaded on the transfer design scale. Since their factor loadings were above .32 (Tabachnick, & Fidell, 2001), and squared multiple correlations with their scale were .45, they were retained in the scales that they are loaded. Hence, opportunity to use learning factor did not emerged as a possible factor for learning transfer in the present Turkish case.

Item-factor loadings range was .33 to .98, and all cross-loadings were below .30, except for the one item from the personal outcomes-positive scale which cross-loaded on the peer support scale with a value of with -.34 (See Table 3.12. for item-factor loadings, eigenvalues and % of variance explained by the factors). Pattern matrix, instead of structure matrix, was reported because unique variance explained by each factors provided in pattern matrix in oblique rotation. Since the LTSI has propriety rights original item numbers in the questionnaire were not provided in Table 3.12., and Table 3.14.

Nine of the ten scales reliabilities exceeded the Nunnally and Bernstein's (1994) suggested minimum .70 criteria. Only personal capacity for transfer scale reliability was .60, the reliabilities of the other scales ranged between .71 and .87.

Table 3.12. presents the factor correlation matrix for the 10 factors of the training-specific domain to examine the unique correlational relationship between the extracted constructs.

Table 3.12.

Item-Factor Loadings, Eigenvalues and Explained Variance for the Training-Specific Domain

Item #	FACTOR									
	MOT	PON	MANO	READ	CONT	PEER	POP	MANS	CAP	DES
1	.85	.01	-.01	-.03	-.11	.07	.01	.02	.00	.03
2	.68	.05	-.07	.08	.06	.00	-.02	-.04	-.01	-.18
3	.68	-.06	.02	.12	.05	-.07	.06	-.01	.00	-.02
4	.57	.05	-.01	.00	-.13	-.06	-.03	.08	-.16	-.02
5	-.03	.89	-.04	.02	.02	.03	.00	.07	-.07	-.09
6	.05	.59	.02	-.01	.01	-.15	.02	.01	.09	.05
7	-.01	.53	.07	.01	-.04	.02	.06	.00	.00	.04
8	.00	.01	.82	.04	-.02	-.04	-.02	-.03	.00	-.01
9	.00	-.02	.82	-.01	.00	.00	.00	.06	.01	.00
10	-.01	.03	.70	-.03	.00	.04	.00	-.02	-.02	.03
11	.03	-.01	.01	.81	.01	.00	.02	.03	.02	-.07
12	-.03	-.06	.04	.76	-.04	-.02	.05	-.02	-.09	.04
13	.10	.11	-.08	.67	-.04	.02	-.09	.05	.07	.00
14	-.02	.03	-.05	.09	-.84	.00	.04	-.02	-.03	-.01
15	.01	-.02	.01	.06	-.77	-.06	.01	.01	.07	-.05
16	.20	.00	.07	-.09	-.61	.01	.00	.07	-.02	-.18
17	.05	-.01	-.01	-.03	-.02	-.83	.04	-.05	.04	-.04
18	-.08	.06	-.01	.06	-.03	-.83	.00	.04	-.07	-.03
19	.08	.21	-.02	.03	-.09	-.45	-.07	.19	-.10	.00
20	.03	-.02	.02	.05	.05	-.01	.93	.03	.01	-.03
21	-.04	.10	-.03	-.03	-.08	.04	.67	.00	-.02	.00
22	.12	-.09	-.03	-.03	.03	-.34	.42	.12	.05	-.01
23	-.03	-.04	.00	.04	.04	.05	-.03	.98	.05	-.04
24	.02	.06	-.03	-.02	.00	.02	.03	.84	.00	.02
25	.02	.05	.04	.02	-.04	-.09	.07	.53	-.01	-.02
26	-.04	-.05	.04	-.02	.05	-.04	-.03	.06	.68	.01
27	-.03	.02	-.04	-.02	-.09	.03	.02	.00	.63	.05
28	.02	.14	.17	.02	.14	.09	.03	-.13	.33	-.11
29	-.05	-.02	-.01	.02	-.06	.03	.03	.04	.02	-.89
30	.15	-.02	.01	-.03	.02	-.05	.03	.04	-.04	-.73
31	.02	.07	-.05	.08	-.19	-.08	-.03	-.02	-.08	-.57
32	.29	-.11	-.06	.02	-.10	-.17	.02	.07	-.10	-.33
Eigen	8.57	3.17	2.55	1.87	1.50	1.42	1.28	1.15	1.09	0.85
%	26.78	9.92	7.98	5.84	4.69	4.45	3.99	3.60	3.39	2.56

Note. MOT= Motivation to Transfer Learning, PON= Personal Outcomes-Negative, MANO= Supervisor/Manager Opposition, READ= Learner Readiness, CONT= Perceived Content Validity, PEER= Peer Support, POP= Personal Outcomes-Positive, MANS= Supervisor/Manager Support, CAP= Personal Capacity for Transfer, DES= Transfer Design. Eigen= Eigenvalues, % = % of variance explained by the factor.

Table 3.13.

Factor Correlation Matrix for Training-Specific Domain

FACTOR	MOT	PON	MANO	READ	CONT	PEER	POP	MANS	CAP	DES
MOT	--									
PON	.06	--								
MANO	-.13	.27	--							
READ	.38	.15	-.11	--						
CONT	-.38	-.15	.22	-.29	--					
PEER	-.36	-.18	.17	-.16	.30	--				
POP	.18	.21	.03	.01	-.13	-.33	--			
MANS	.26	.24	-.23	.17	-.32	-.45	.30	--		
CAP	-.28	.15	.33	-.18	.26	.23	.08	-.12	--	
DES	-.63	-.04	.09	-.26	.44	.23	-.12	-.24	.17	--

Note. MOT= Motivation to Transfer Learning, PON= Personal Outcomes-Negative, MANO= Supervisor/Manager Opposition, READ= Learner Readiness, CONT= Perceived Content Validity, PEER= Peer Support, POP= Personal Outcomes-Positive, MANS= Supervisor/Manager Support, CAP= Personal Capacity for Transfer, DES= Transfer Design.

3.5.2.2. Training-General Domain

Training-general domain of the T-LTSI asked respondents to reference their responses thinking about training in general in their organization. This domain consisted of five scales, and 15 items. KMO measure of sampling adequacy was .78 and Bartlett's test of sphericity was significant (p < .01). Principal axis factoring together with the oblique rotation was performed on the items of the training-specific domain.

Initial analysis was run with the eigenvalues greater than one criterion, and without any restriction of the number of factors, resulted in 4 factors explaining the 63.41 % of the cumulative variance. Examination of the scree plot indicated the emergence of the fifth factor. Further, eigenvalue of the fifth factor was .95 and % of the variance explained by this factor was 6.30 %. As a result, EFA was run by determining five factors to extract.

The five-factor solution explained 69.71 % of the total variance, produced a more meaningful factor structure. Further, five-factor solution was identical with the

factors of the original LTSI (Bates et al., 2012). All of the items were loaded on the expected constructs hence extracted five factors were named and described identically with their original correspondents. All the scales composed of three items. Internal consistency measures of the factors were given in parenthesis right after the name of the factors. These factors were described below:

1. *Performance – Outcome Expectations* (α = .72). The first factor explained the 27.73 % of the total variance, and measures the expectation that changes in job performance will lead to outcomes valued by the individual. The sample item is 'When I do things to improve my performance, good things happen to me'.

2. *Performance Coaching* (α = .81). This factor accounted for the 14.13 % of the total variance, and related with the formal and informal indicators from an organization about an individual's job performance. The sample item is 'I get a lot of advice from other about how to do my job better'.

3. *Resistance to Change* (α = .79). The third factor explained the 12.73 % of the total variance, and measures the extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training. The sample item is 'My workgroup is reluctant to try new ways of doing things'.

4. *Performance Self-Efficacy* (α = .76). This factor accounted for the 8.81 % of the total variance, and related with an individual's general belief that they are able to change their performance when they want to. The sample item is 'I never doubt my ability to use newly learned skills on the job'.

5. *Transfer Effort – Performance Expectations* (α = .75). The fifth factor explained the 6.30 % of the total variance, and related with the expectation that effort devoted to transferring learning will lead to changes in job performance. The sample item is 'The more training I apply on my job, the better I do my job'.

Item-factor loadings range was .46 to .93, and all cross-loadings were below .27, indicating a very clear factor structure. Table 3.14. illustrates item-factor loadings, eigenvalues and % of variance explained by the factors.

Table 3. 14.

Item-Factor Loadings, Eigenvalues and Explained Variance for the Training-General Domain

Item #	FACTOR				
	POEX	COACH	RESIST	SELF-E	TEPEX
34	.73	.02	.01	-.06	.06
35	.62	-.03	-.01	.06	-.06
36	.59	-.09	.01	.00	.16
37	-.07	-.87	.02	-.02	.04
38	.03	-.75	.02	-.04	.06
39	.10	-.63	-.06	.11	-.07
40	-.02	.04	.93	.06	.06
41	-.02	.08	.86	.02	.01
42	.04	-.07	.47	-.06	-.08
43	.03	-.01	.00	.81	.02
44	.08	-.08	-.10	.76	-.10
45	-.09	.05	.07	.58	.12
46	-.04	-.11	.02	.06	.85
47	.07	.00	-.10	-.02	.61
48	.26	.06	-.01	.14	.46
Eigen	4.16	2.12	1.91	1.32	.95
%	27.73	14.13	12.73	8.81	6.30

Note. POEX= Performance-Outcome Expectations, COACH= Performance Coaching, RESIST= Resistance to Change, SELF-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Performance Expectation. Eigen= Eigenvalues, % = % of variance explained by the factor.

Table 3.15. presents the factor correlation matrix for the 5 factors of the training-general domain to examine the unique correlational relationship between the extracted constructs. It was observed that performance – outcome expectations and performance coaching are negatively associated, and transfer effort – performance expectations is associated positively with performance – outcome expectations and performance self-efficacy.

Table 3.15.

Factor Correlation Matrix for Training-General Domain

FACTOR	POEX	COACH	RESIST	SELF-E	TEPEX
POEX	--				
COACH	-.50	--			
RESIST	-.16	.18	--		
SELF-E	.25	-.09	-.18	--	
TEPEX	.41	-.09	-.18	.43	--

Note. POEX= Performance-Outcome Expectations, COACH= Performance
Coaching, RESIST= Resistance to Change, SELF-E= Performance
Self-Efficacy, TEPEX= Transfer Effort – Performance Expectation

In brief, EFA analysis on the training-specific domain resulted in 10 factors which were identical with the original factors in the LTSI, however opportunity to use learning factor was not emerged. One item from the opportunity to use learning scale with .26 loading and with multiple cross-loadings on other factors was excluded from analysis. Among the other two items of the opportunity to use learning scale, one item was stick to the motivation to transfer and the other one loaded on the transfer design scale, and retained on these scales since they were reasonable item loadings, and relatively high squared multiple correlations with the scales they were loaded. Except for the personal capacity for transfer (.60) all other scale reliabilities were higher than the suggested .70 criteria.

In terms of training-general domain, all of the five factors of the original LTSI were replicated with the same original items of the scales. Examination of the item-factor loadings and cross-loading indicated a very clear and meaningful five-factor solution. Scale reliabilities were between the .72 and .81. Table 3.16. presents the inter-factor correlations, reliabilities, means, and standard deviations of all scales of the T-LTSI.

Table 3.16.

Inter-factor Correlations, Reliabilities, Means, and Standard Deviations of the T-LTSI Scales

SCALES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Learner Readiness	(.81)														
2. Motivation to Transfer Learn.	.41**	(.86)													
3. Personal Capacity for Transfer	.16**	.29**	(.60)												
4. Perceived Content Validity	.34**	.50**	.26**	(.86)											
5. Transfer Design	.34**	.69**	.25**	.61**	(.87)										
6. Personal Outcomes-Positive	.07	.27**	.02	.23**	.25**	(.76)									
7. Personal Outcomes-Negative	.15**	.10*	-.14**	.16**	.07	.23**	(.73)								
8. Peer Support	.24**	.43**	.26**	.41**	.41**	.42**	.28**	(.83)							
9. Manager Support	.19**	.29**	.14**	.34**	.32**	.39**	.27**	.48**	(.84)						
10. Manager Opposition	-.11**	-.15**	-.32**	-.17**	-.17**	-.04	.22**	-.16**	-.17**	(.82)					
11. Performance Self-Efficacy	.27**	.35**	.27**	.31**	.34**	.13**	.03	.28**	.21**	-.26**	(.76)				
12. Transfer Effort-Perfor. Exp.	.31**	.55**	.29**	.39**	.47**	.28**	.04	.46**	.32**	-.22**	.40**	(.75)			
13. Performance-Outcome Exp.	.12**	.20**	.11**	.23**	.25**	.47**	.14**	.39**	.41**	-.15**	.23**	.44**	(.72)		
14. Resistance to Change	-.13**	-.16**	-.27**	-.17**	-.20**	-.05	.16**	-.24**	-.27**	.38**	-.15**	-.19**	-.14**	(.79)	
15. Performance Coaching	.06	.03	.03	.14**	.12**	.24**	.16**	.29**	.36**	.00	.13**	.18**	.43**	-.19**	(.81)
Mean	3.59	4.05	3.87	3.47	3.85	2.26	1.91	3.25	2.70	1.67	4.05	4.05	3.16	2.64	2.91
SD	.82	.75	.78	.97	.82	.87	.84	.89	.97	.75	.63	.66	.87	.95	.87

Note. **= p< .01. *= p< .05. Cronbach's alpha values were given in the diagonal in parenthesis. Training-general scales were shaded.

3.5.3. Security Officers Training Transfer Evaluation Questionnaire

Security Officers Training Program was selected for administering of the transfer evaluation questionnaire due to its large number of participants. In yearly training plan of 2013, this training program was planned to deliver more than five groups and reaching more than 130 participants.

Security officers training program was designed by the Security General Directorate of the Turkish Republic for the private security officers working for the public and private sector organizations. The training program was compulsory, and applied to all private security officers in every five year as a requirement for the renewal of the security officer certification. The program was 60-hour long and comprehensive of the following topics: security measures, security systems and devices, private security law and personal rights, effective communication, crowd management, fire precautions, relations with law-enforcement officers, basic first aid, knowledge of narcotic substances, and fire-arms knowledge and shooting practice.

Security officers training program was delivered by the private security education institutions approved by the Security General Directorate. Private security officers completing security officers training program were subjected to the written test and shooting practice examination by the Security General Directorate of the Turkish Republic.

A transfer evaluation questionnaire was developed for the security officers training program in order to obtain average transfer scores of the participants to be used in answering the third research question. Security officers training program was designed by the Security General Directorate of the Turkish Republic, and learning objectives of the program were not explicit. As a first step, content of the training program was analyzed by the researcher, the training coordinator of a private security training company operating in Turkey, and three security managers working at the Head Office, Banknote Printing Plant and Ankara Branch security departments, respectively. Knowledge of narcotic substances, basic first aid, crowd management, and relations with law-enforcement officers topics were excluded

from the scope of the study since they do not resemble the working conditions of the security officers of the CBRT.

In the second step, twelve behavioral outcomes regarding the security measures, security systems and devices, private security law and personal rights, effective communication, fire precautions, and fire-arms knowledge and shooting practice topics were generated. However, behavioral outcomes regarding the private security law and personal rights, fire precautions, and fire-arms knowledge and shooting practice subjects were not retained because the security managers reported that these behavioral outcomes were not observable homogenously in three work units. As a result, eight behavioral outcomes were kept in the instrument.

Identified behavioral outcomes were evaluated by two training specialists working for one of a private security training company, and one curriculum specialists in terms of representativeness of the intended learning objectives. Definitions of the security measures, security systems and devices, effective communication, and fire-arms knowledge and shooting practice topics, and behavioral objectives were provided to the evaluators in the questionnaire format and they were asked to rate to what degree each behavioral outcome is representative of the training topic. A 5-point rating scale was used with the following scale definitions: (1) not representative at all, (2) a bit representative, (3) moderately representative, (4) well representative, and (5) very well representative. Average mean ratings of the evaluators resulted in 4.2 out of five, for the eight behavioral objectives indicating that behavioral outcomes were found to be well representative of the learning objectives of the training program, as a face validity evidence.

Finally, an instruction was prepared for the first line managers/supervisors of the participants of the security officers training program, and eight behavioral outcomes were placed in the transfer evaluation questionnaire. Respondents were asked first to write the name of the staff member attended to training program and then requested to indicate how frequent these behaviors have been demonstrated by their staff member. A 5-point rating scale was used with the following scale

definitions: (1) never, (2) rarely, (3) sometimes, (4) frequently, and (5) always. Appendix H provides the Security Officers Training Transfer Evaluation Questionnaire.

3.6. Data Collection Procedures

Two types of data collected within the scope of the study; (1) T-LTSI data and demographic variables, (2) security officers training transfer evaluation data. The first one was collected directly from the training participants (*n*=609) while the second one was collected from the first line managers of the security officers training program participants (*n*=101).

3.6.1. T-LTSI Data and Demographic Variables

The T-LTSI together with the demographic and organizational variables was administered to the participants of the training programs that were delivered by the CBRT Training Center between May 2013, and March 2014. See Appendix B for the details of the training programs included in the study.

T-LTSI data was collected right after the completion of the training programs. Trainees were informed by the researcher and/or training specialist of the training program in question, and given the informed consent sheet including the purpose of the study, keeping the responses anonymous, and voluntary nature of the participation in the study. Volunteers were given the copy of the survey instrument and after completion of the responses, questionnaires were collected back. A total of 609 training participants out of 789, responded the T-LTSI with the response rate of 77 %.

3.6.2. Security Officers Training Transfer Evaluation Data

Collection of the security officers training evaluation data was started right after the security officers training participants completed the T-LTSI. The researcher announced the second phase of the study, transfer evaluation. Participants were informed that feedback will be requested from their first line managers/supervisors at work through a questionnaire developed to find out to what extent they have been able to transfer the learning outcomes of this training to the

workplace, within the 6-month-period following the completion of the training. Participants were given the informed consent form, and requested to write their name and contact details on the T-LTSI questionnaire (see Appendix D for the informed consent form). All of the 105 participants accepted to be included in the transfer evaluation survey and provided their name and contact details on the T-LTSI.

Twelve weeks after the completion of the security officers training program, transfer evaluation data started to be collected. Since there were three management layers in the security departments, first line supervisors/managers of the training participants were different from each other. Therefore, 84 security officers were evaluated by the chief security officers, 12 chief security officers were evaluated by the assistant security managers, and finally five assistant security managers were evaluated by the security managers. *Two security managers were excluded from the transfer evaluation survey* since their tasks and duties are quite different from the others and their job content is not representative of the behavioral outcomes of the training program. Additionally, *two security officers from the Head Office Security Department were also excluded* since they are working for the Governor's Office without subjected to direct supervision of the chief security officers. As a result, transfer evaluation data for security officers training program was collected for *a total of 101 participants* including 84 security officers, 12 chief security officers, and five assistant security managers, respectively.

Another concern regarded especially important for the security officers was work shifts. Security departments works continuously for 24 hours, with three shifts. Since security officers turns within each shift after completing two-month period, the researcher decided to collect evaluation data from the chief security officers of each shift. Hence, transfer evaluation data collected from all 12 chief security officers for the security officers working in their security departments, Head Office, Banknote Printing Plant, and Ankara Branch, respectively.

Security Officers Training Transfer Evaluation Questionnaire was printed by the researcher, participants names were recorded on each of the questionnaire, print outs were grouped by depending on which shift the security officers are

working at the time of data collection and delivered to the related chief security officers in the closed envelope. Each evaluator was informed orally by the researcher and directed to read the explanations written in the instructions of the questionnaire (see Appendix H for the Security Officers Training Transfer Evaluation Questionnaire). All the questionnaires that were filled for 101 training participants by the supervisors were returned to the researcher, within a week.

Obtained transfer scores were entered in three separate SPSS data file, according to the work unit, in order to perform reliability analysis. In each work unit there were four chief security officers providing transfer scores for the participants. In Head Office, all of the four raters' reliability measures were above .83 (range is .84 to .94), hence average of the evaluation of these four raters were taken into account. In Banknote Printing Plant, raters obtained reliability measures of .51, .84, .85, and .88. In Ankara Branch, two raters' reliability measures were below .50, and others were .89, and .92. Transfer evaluations of raters obtaining reliability measures below .70 were not considered. Hence, the average transfer scores of the participants were calculated from the raters providing sufficient reliability measures.

Average mean transfer scores of the participants was 4.46 and standard deviation was .38. Range of the transfer scores was between 3.38 and 5.00. Leniency of the responses with restricted range was observed clearly from the descriptive statistics of the transfer scores.

3.7. Data Analysis Procedures

Initial screening of the data, psychometric qualities of the instruments used in the study, and research questions were analyzed using a PASW Statistics 18 software package. The methodology used in the study is described below, in the following sections.

3.7.1. Initial Data Screening

Prior to analysis of the data, initial data screening was made. The data was examined in terms of accuracy of the data entry, out of range scores, missing cases, univariate and multivariate outliers.

For the accuracy of the computerized data file, ten percent of the total cases were controlled (61 questionnaire), and there was no mismatch found between the original and the computerized data. Further, descriptive statistics were run to see whether all the values within the expected range or not. Missing values were coded, and analyzed in terms of their pattern. Univariate outliers were identified by examination of the z-scores, and multivariate outliers were identified by Mahalanobis distance statistics (Tabachnick, & Fidell, 2001). Assumptions of multivariate normality, linearity, homoscedasticity, and homogeneity of variance were checked and reported.

3.7.2. Analysis of Research Question One and Two

Research question one asked 'Do perceptions of the trainees on the T-LTSI factors differ in terms of demographic characteristics including *gender*, *education level* and *work experience*?' Research question two states 'Do perceptions of the trainees on the T-LTSI factors differ in terms of *department/unit of the trainees*, *type of training* and *type of participation* (*voluntary or obligatory*) in the training?' As claimed in the introduction, analysis of these demographic and organizational variables is critical in terms of developing effective transfer training system.

Multivariate Analysis of Variance (MANOVA) was used to investigate the effects of specified demographic and organizational variables on the constructs of the Turkish version of the LTSI. MANOVA was preferred over the multiple univariate Analysis of Variance (ANOVA) since more than one dependent variable can be included simultaneously, and it can control the Type I error which can be inflated when multiple univariate ANOVA are used for each of the dependent variables separately (Tabachnik & Fidell, 2001).

Independent variables were *gender*, *education level* and *work experience* for the research question one and *work unit/department of the trainees*, *type of training* and *type of participation* for the research question two and the total scale scores of the constructs of the T-LTSI were the dependent variables for both of the research questions. In case of the observation of the significant differences, results of

MANOVA analysis were followed by the univariate Analysis of Variance (ANOVA) and post hoc comparisons. In post hoc comparisons, Scheffe's significant test with an adjusted alpha level according to the number of dependent variables was utilized. Scheffe's test was selected due to its conservative nature maintaining the error variance at the determined alpha level (Tabachnick & Fidell, 2001).

Wilk's Lambda was utilized as a significance test in MANOVA. However, Pillai's criterion was also employed due to its robustness when sample size decreased, inequality in cell sizes occurred, and the assumption of homogeneity of variance-covariance matrices violated.

Assumptions of MANOVA were also analyzed and reported. Missing values and influential outliers were checked. Univariate normality was checked with Kolmogorov-Smirnov statistics. Homogeneity of variance-covariance matrix was checked through Box's M test. Further, Levene's test results were checked for each of the DV. Non-significant Levene's test results indicated that error variance of DV is equal across groups.

3.7.3. Analysis of Research Question Three

Research question three asked 'Whether work environment factors predict training transfer more than other factors of the T-LTSI (trainee characteristics, motivation, and ability/enabling scales) in terms of training transfer scores of the 'Security Officers Training Program' delivered by the Training Center of the CBRT?'

For research question three, Multiple Regression (MR) analysis was performed to investigate predictive ability of the T-LTSI constructs on the training transfer scores of security officers training participants. Independent/predictor variables were the constructs of the T-LTSI. Scale scores for each construct obtained from the average mean scores of the items on each factor of the T-LTSI. Dependent/outcome variable of interest was transfer of training scores of the trainees attending security officers training program. Training transfer scores of the trainees were obtained from the transfer evaluation questionnaire designed to measure behavioral outcomes of both training programs.

Sequential (hierarchical) multiple regression analysis was considered as an appropriate type since it allows the researcher to specify the order of IVs entry to regression equation. As declared in the introduction section, by depending on the theoretical considerations, the researcher expects work environment (climate) constructs to explain more variance on training transfer than the ability/enabling constructs, motivation constructs, and trainee constructs of the T-LTSI. As a result work environment constructs were entered first into equation, followed by ability/enabling factors, motivation constructs, and individual factors, respectively.

Measure of model fit of the regression model was analyzed through F-statistics. Statistical significance of the regression coefficients; unstandardized regression coefficients (B), standardized regression coefficients (β) were tested through t-statistics. Multiple correlation coefficient (R), squared multiple correlation coefficient (R^2), and adjusted R^2 were reported to show total proportion of variance explained by the regression model. To analyze unique contributions of each predictor variable, squared semi-partial correlations ($\underline{sr}_i^2$) were reported.

Assumptions of multiple regression were analyzed for checking the stability of the regression model. Multicollinearity was checked through tolerance and variance inflation factor (VIF) statistics. Tolerance values higher than .20, and VIF values lower than 4 indicate absence of multicollinearity (Tabachnik & Fidell, 2001). Normality, linearity and homoscedasticity of residuals (errors) were checked by normal probability plot, and scatter plot. Independence of errors was checked through Durbin-Watson statistics. In identification of influential observations (outliers) Mahalanobis distance and leverage statistics were used.

3.8. Limitations

Objectively, one limitation of this study was translating the original LTSI into the Turkish Language. A rigorous translation methodology including forward and back- translations, subjective and objective evaluations were employed in the translation process however there was no chance for complete elimination of the effects peculiar to cultural and linguistic characteristics of the two distinct cultures.

Furthermore, case study nature of the study created limitations on the generalizability of the findings. By depending on the separate 1211 Law, organizational structure of the CBRT was different from the other public institutions. Due to the distinct organizational culture characteristics of the CBRT generalizability of the results to other public and private organizations will be limited.

Convenient sampling procedure used in this study created another limitation on the generalizability of the results. Use of random sampling procedures in future research would enhance the generalizability of the findings.

Relatively low sample size in answering research question three created limitation on the stability and the generalizability of the regression model. Although it was not practical, larger sample sizes needed in order to test multiple regression model with 15 predictors.

CHAPTER 4

RESULTS

This chapter reveals the results of the transfer system factors impact on training transfer at the CBRT. Results of each research question are presented separately.

4.1. Research Question One

Research question one asked 'Do perceptions of the trainees on the T-LTSI factors differ in terms of demographic characteristics including *gender*, *education level* and *work experience*?'

Multivariate analysis of variance (MANOVA) was used since research questions involved multiple dependent and independent variables. The 15 transfer factors found in the T-LTSI were specified as the dependent variables of interest, and trainee characteristics (gender, education level, and work experience) together with the training-related and organizational factors (participation type, training type training, work unit/department) were treated as categorical independent variables. The MANOVA results for each independent variable were reported individually. Result yielding significant differences was followed with analysis of variance (ANOVA) and post hoc comparisons (in case of more than two groups), respectively. Bonferroni inequality approach that is adjusting the selected alpha level to control for the overall *Type I error* rate when performing a series of separate tests (Hair et al., 2006), was applied in univariate tests. Therefore alpha level

adjusted, according to the number of dependent variables, to .005 (nearly .05 ÷ 15). Further, Scheffe's test, that is the most conservative with respect to Type I error, was utilized in post hoc comparisons. Since adjusted alpha level of .005, and selected post-hoc comparison test of Scheffe is very conservative, univariate alpha level was not further adjusted according to the significant results of Levene's test of equality of error variances.

Prior to the execution of the analysis, assumptions of MANOVA were analyzed. Observations were independent of each other and all of the dependent variables were measured with an interval scale. In terms of sample size requirements for individual cell/group sizes, minimum cell size of 20 cases or greater number of cases in each cell than the number of dependent variables (Hair et al., 2006) were corresponded in all MANOVA analysis performed.

Univariate and multivariate outliers were analyzed for the dependent variables. Univariate outliers were checked through z scores and 20 cases were found to be out of + 3.29 to -3.29 range. No any repetitive pattern was observed among univariate outliers. Multivariate outliers were checked trough Mahalanobis distance statistics, and critical value of the chi square was found as χ^2 (15) = 37.70 (p < .001). Total 18 cases were found to have exceeding critical chi square value. Among multivariate outliers, 5 cases (111, 195, 239, 240, and 437) were identified as univariate outliers before, excluded from the further analysis, and MANOVA analysis was performed with 601 cases.

Multivariate equality of variance-covariance matrices (homoscedasticity) of dependent variables across groups were checked through *Box's M* test, and univariate tests of homoscedasticity of the dependent variables were checked through Levene's test of equality of error variances. Non-significant results of both tests indicated that assumptions were not violated. However, F-tests are generally robust if violations of these assumptions are modest. Equality of group sizes was evaluated and if the groups were of approximately equal size (largest group size ÷ smallest group size < 1.5) modest violations were ignored.

4.1.1. Gender

Gender was used to examine whether respondents' learning system perceptions, via T-LTSI, differed between females ($n = 203$) and males ($n = 398$). Box's M test was significant (*Box's M* = 159.73, *F* = 1.29, *p* < .05). However, since the largest to the smallest group ratio was not departed much from the 1.5 (Hair et al., 2006), and robustness of the Pillai's Trace to decreased group size, unequal group sizes, and violation of homogeneity of variance-covariance matrices assumption (Tabachnik & Fidell, 2006), MANOVA was interpreted through Pillai's Trace. In terms of equality of univariate error variances, all dependent variables satisfied this assumption except for the *personal outcomes-negative*, and *manager opposition*. No further alpha adjustment were made for these dependent variables.

The Pillai's Trace was significant (*V* = .09, *F* (15, 585) = 4.05, *p* < .001) indicating that MANOVA yielded statistically significant differences across gender. Strength of association was above moderate (partial η^2 = .09) explaining the 9 % of the variance (Cohen, 1988). According to the Cohen (1988) .01, .06, and .15 are considered as small, medium, and large effect sizes, respectively, in the evaluation of the strength of association of the eta square (η^2). Followed univariate ANOVA analysis showed that *personal outcomes-negative*, and *performance coaching* differed significantly across gender, females rated these factors lower than the males, 1.68 vs 2.03 and 2.76 vs 3.00, respectively. Table 4.1. provides means, and standard deviations for the dependent variables for gender, and Table 4.2. presents univariate F-Tests results for gender.

Table 4.1.

Means and Standard Deviations of Dependent Variables across Gender

	DEPENDENT VARIABLES																													
	READ		MOT		CAP		CONT		DESIGN		POP		PON		PEERS		MANS		MANO		SELF-E		TEPEX		POEX		RESIST		COACH	
Gender	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Female	3.55	.81	4.08	.70	3.97	.78	3.50	.94	3.90	.79	2.16	.81	1.68	.67	3.30	.83	2.70	.94	1.56	.65	3.96	.66	4.04	.61	3.09	.83	2.52	.91	2.76	.90
Male	3.61	.81	4.06	.73	3.84	.76	3.47	.98	3.84	.82	2.32	.90	2.03	.88	3.24	.90	2.72	.98	1.72	.78	4.09	.60	4.07	.66	3.20	.88	2.69	.96	3.00	.83

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Perfor. Expect., POEX= Perfor.-Outcome Expect., RESIST= Resistance to Change, COACH= Perfor. Coaching

Table 4.2.

Univariate F-Tests Results for the 15 T-LTSI Factors across Gender

Dependent Variable	SS	MS	F	Sig.	η^2 (partial)
Learner Readiness	.44	.44	.67	.414	.00
Motivation to Transfer Learning	.07	.07	.13	.721	.00
Personal Capacity for Transfer	2.17	2.17	3.71	.054	.01
Perceived Content Validity	.12	.12	.12	.725	.00
Transfer Design	.45	.45	.69	.408	.00
Personal Outcomes-Positive	3.65	3.65	4.83	.028	.01
Personal Outcomes-Negative	*16.66*	*16.66*	*24.82*	*.000**	*.04*
Peer Support	.45	.45	.59	.441	.00
Manager Support	.03	.03	.03	.866	.00
Manager Opposition	3.07	3.07	5.61	.018	.01
Performance Self-Efficacy	2.27	2.27	5.83	.016	.01
Transfer Effort-Performance Exp.	.12	.12	.28	.597	.00
Performance-Outcome Exp.	1.75	1.75	2.35	.125	.00
Resistance to Change	3.83	3.83	4.32	.038	.01
Performance Coaching	*7.67*	*7.67*	*10.45*	*.001**	*.02*

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$

Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

4.1.2. Education Level

Education levels were used as the independent variables to determine if significant differences existed in respondents' perceptions of the learning transfer system factors. There were 63 respondents with an education level of high school or less, 355 respondents with a bachelor's degree, and 183 respondents with a graduate degree (masters/doctorate).

Box's M test was significant (*Box's* M = 330.66, *F* = 1.29, *p* < .01). In terms of equality of univariate error variances, all dependent variables satisfied this assumption except for the *motivation to transfer learning*, and *personal outcomes – negative* factors.

The Pillai's Trace was significant ($V = .18$, $F(30,1170) = 3.83$, $p < .001$) indicating that MANOVA yielded statistically significant differences across education level. Strength of association was above moderate (partial $\eta^2 = .09$). Followed univariate ANOVA analysis showed that *personal outcomes – positive*, *personal outcomes – negative*, *manager support*, *manager opposition*, *performance – outcome expectations*, and *performance coaching* differed significantly across education level of the respondents. Table 4.3. presents means, and standard deviations of dependent variables for education level. Table 4.4. provides univariate F-Tests results, and Table 4.5. provides post-hoc comparisons across education level.

Table 4.3.

Means and Standard Deviations of Dependent Variables across Education Level

Education Level (degree)	DEPENDENT VARIABLES																													
	READ		MOT		CAP		CONT		DESIGN		POP		PON		PEERS		MANS		MANO		SELF-E		TEPEX		POEX		RESIST		COACH	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
High School	3.70	.77	4.21	.56	3.88	.76	3.76	.92	4.01	.81	2.60	1.01	2.30	.86	3.53	.92	2.90	1.00	1.95	.81	4.21	.59	4.28	.57	3.62	.76	2.68	.88	3.21	.84
Bachelor's	3.53	.83	4.02	.73	3.89	.77	3.46	.97	3.79	.82	2.22	.85	1.97	.87	3.27	.83	2.77	.94	1.68	.74	4.02	.64	4.03	.65	3.19	.84	2.65	.94	2.98	.85
Graduate	3.68	.78	4.11	.74	3.86	.77	3.41	.96	3.95	.78	2.24	.84	1.67	.68	3.14	.92	2.52	.98	1.54	.69	4.06	.60	4.04	.63	2.96	.87	2.58	.98	2.69	.85

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Perf. Expect., POEX= Perf.-Outcome Expect., RESIST= Resistance to Change, COACH= Perf. Coaching

Table 4.4.

Univariate F-Tests Results for the 15 T-LTSI Factors across Education Level

Dependent Variables	SS	MS	F	Sig.	η^2 (partial)
Learner Readiness	3.73	1.86	2.85	.059	.01
Motivation to Transfer Learning	2.65	1.32	2.57	.077	.01
Personal Capacity for Transfer	.13	.06	.11	.898	.00
Perceived Content Validity	5.98	2.99	3.21	.041	.01
Transfer Design	4.62	2.31	3.55	.029	.01
Personal Outcomes-Positive	*8.09*	*4.05*	*5.40*	*.005**	*.02*
Personal Outcomes-Negative	*21.59*	*10.79*	*16.26*	*.000**	*.05*
Peer Support	7.06	3.53	4.68	.010	.02
Manager Support	*10.29*	*5.14*	*5.59*	*.004**	*.02*
Manager Opposition	*7.81*	*3.90*	*7.21*	*.001**	*.02*
Performance Self-Efficacy	2.11	1.05	2.70	.068	.01
Transfer Effort-Performance Exp.	3.31	1.66	4.08	.017	.01
Performance-Outcome Exp.	*21.14*	*10.57*	*14.88*	*.000**	*.05*
Resistance to Change	.73	.36	.41	.666	.00
Performance Coaching	*16.59*	*8.30*	*11.52*	*.000**	*.04*

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$

Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

Investigation of mean scores in the post hoc comparisons yielded that high school graduates gave higher mean ratings on *personal outcomes – positive*, and *performance – outcome expectations* factors when compared to the respondents with bachelor's degree*, and personal outcomes – negative*, *manager opposition*, *performance – outcome expectations*, and *performance coaching* factors compared to the respondents with graduate degree. Respondents with bachelor's degree have higher mean ratings than the respondents with graduate degree on *personal outcomes – negative*, and *performance coaching* factors. Although manager support generated a significant F value, post hoc comparisons did not indicate significant mean differences at the .005 level.

Table 4.5.

Post Hoc Comparisons across Education Level

Dependent Variable	Education Level		Mean Difference	Sig.
Personal Outcome Positive	High school	Undergraduate	.38	.005
Personal Outcome Negative	High school	Graduate	.63	.000
	Undergraduate	Graduate	.31	.000
Manager Opposition	High school	Graduate	.40	.001
Performance-Outcome Exp.	High school	Undergraduate	.43	.001
		Graduate	.66	.000
Performance Coaching	High school	Graduate	.52	.000
	Undergraduate	Graduate	.29	.001

Note. Sig.= p value. Only significant results ($p < .005$) were reported.

4.1.3. Work Experience

Total years of experience of the respondents in the CBRT was specified as an independent variable to determine whether significant differences were present in the perceptions regarding learning transfer system factors or not. In order to make reasonable comparisons among specified groups, and to adjust the ratio of group sizes as low as possible, work experience was grouped into three categories: 5 years and below ($n = 146$ or 24 %), 6 - 15 years ($n = 248$ or 41 %), and 16 years and more ($n = 208$ or 35 %).

Box's M test was significant (*Box's M* = 452.59, *F* = 1.82, $p < .001$). T*ransfer design*, *personal outcomes – negative, manager support*, *performance self-efficacy,* and *resistance to change* factors violated the equality of error variances assumption.

The Pillai's Trace was significant ($V = .28$, $F (30,1168) = 6.41$, $p < .001$) indicating that MANOVA yielded statistically significant differences across education level. Strength of association was very near to large effect, with partial $\eta^2 = .14$. Followed univariate ANOVA analysis showed that *learner readiness*, *motivation to transfer learning*, *perceived content validity*, *transfer design*, *personal outcomes – negative*, *manager support*, *performance self-efficacy*,

and *performance coaching* differed significantly across respondents' years of work experience. Table 4.6. presents means, and standard deviations of dependent variables for work experience, Table 4.7. provides univariate F-Tests results, and Table 4.8. provides post-hoc comparisons across work experience.

Table 4.6.

Means and Standard Deviations of Dependent Variables across Work Experience (in years)

Work Experience (in years)	DEPENDENT VARIABLES																													
	READ		MOT		CAP		CONT		DESIGN		POP		PON		PEERS		MANS		MANO		SELF-E		TEPEX		POEX		RESIST		COACH	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
≤ 5	3.39	.78	3.76	.77	3.88	.71	3.09	1.02	3.48	.89	2.27	.85	1.77	.81	3.17	.87	2.77	.90	1.57	.72	3.89	.57	3.99	.64	3.27	.80	2.63	1.02	3.24	.90
6 - 15	3.67	.79	4.11	.72	3.93	.77	3.57	.94	3.95	.76	2.27	.88	1.83	.75	3.24	.88	2.53	.90	1.67	.73	4.05	.59	4.08	.62	3.08	.85	2.74	.98	2.71	.79
≥ 16	3.64	.84	4.24	.61	3.83	.80	3.64	.89	4.03	.72	2.26	.88	2.12	.91	3.34	.87	2.89	1.06	1.73	.77	4.16	.68	4.08	.67	3.19	.91	2.51	.83	2.94	.86

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Perf. Expect., POEX= Perf.-Outcome Expect., RESIST= Resistance to Change, COACH= Perf. Coaching

Table 4.7.

Univariate F-Tests Results for the 15 T-LTSI Factors across Work Experience

Dependent Variable	SS	MS	F	Sig.	$\eta2$ (partial)
Learner Readiness	*7.940*	*3.970*	*6.129*	*.002**	*.020*
Motivation to Transfer Learning	*20.691*	*10.345*	*21.281*	*.000**	*.067*
Personal Capacity for Transfer	1.025	.513	.874	.418	.003
Perceived Content Validity	*29.113*	*14.557*	*16.290*	*.000**	*.052*
Transfer Design	*28.484*	*14.242*	*23.254*	*.000**	*.072*
Personal Outcomes-Positive	.028	.014	.018	.982	.000
Personal Outcomes-Negative	*13.529*	*6.764*	*9.968*	*.000**	*.032*
Peer Support	2.666	1.333	1.753	.174	.006
Manager Support	*14.862*	*7.431*	*8.141*	*.000**	*.027*
Manager Opposition	2.294	1.147	2.080	.126	.007
Performance Self-Efficacy	*6.369*	*3.185*	*8.306*	*.000**	*.027*
Transfer Effort-Performance Exp.	.969	.485	1.181	.308	.004
Performance-Outcome Exp.	3.704	1.852	2.503	.083	.008
Resistance to Change	5.559	2.780	3.136	.044	.010
Performance Coaching	*25.505*	*12.753*	*18.048*	*.000**	*.057*

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$

Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

Table 4.8.

Post Hoc Comparisons across Work Experience

Dependent Variable	Work Experience (in years)		Mean Difference	Sig.
Learner Readiness	≤ 5	6 - 15	-.28	.004
Motivation to Transfer Lear.	≤ 5	6 - 15	-.36	.000
		≥ 16	-.48	.000
Perceived Content Validity	≤ 5	6 - 15	-.47	.000
		≥ 16	-.55	.000
Transfer Design	≤ 5	6 - 15	-.47	.000
		≥ 16	-.54	.000
Personal Outcome Negative	≤ 5	≥ 16	-.35	.001
	6 - 15	≥ 16	-.29	.001
Manager Support	6 - 15	≥ 16	-.36	.000
Performance Self-Efficacy	≤ 5	≥ 16	-.27	.000
Performance Coaching	≤ 5	6 - 15	.53	.000
		≥ 16	.30	.005

Note. Sig.= p value. Only significant results ($p < .005$) were reported.

Post hoc comparisons were yielded that, respondents who have worked 5 years or less rated *motivation to transfer learning*, *perceived content validity*, and *transfer design* lower than the respondents who have worked between 6-15 years, and people who have worked more than 16 years, whereas rated *performance coaching* higher than those senior groups. Further, respondents who have worked 6-15 years, rated *performance outcomes-negative*, and *manager support* factors lower than the more senior (16 years or more) participants. Respondents who have worked 16 years or more rated *personal outcomes – negative*, and *performance self-efficacy* higher than the respondents who have worked 5 years or less.

4.2. Research Question Two

Research question two states 'Do perceptions of the trainees on the T-LTSI factors differ in terms of *work unit/department of the trainees*, *type of training* and *type of participation* (*voluntary or obligatory*) in the training?'. Multivariate analysis of variance (MANOVA) was used and the 15 transfer factors found in the T-LTSI were specified as the dependent variables of interest. Organizational factors

(participation type, training type training, work unit/department) were treated as categorical dependent variables.

4.2.1. Work unit/department

Work unit/department of the respondents was used as an independent variable to determine if significant differences were present in the participants' perceptions regarding learning transfer system factors. Three categories were: Head Office departments ($n = 272$ or 45 %), Banknote Printing Plant ($n = 53$ or   9 %), and Branches ($n = 276$ or 46 %). All these departments or work units were located at the separate buildings and have distinct work environments. Banknote Printing Plant were classified under the Head Office Directory in the organizational chart of the CBRT, however it is a printing plant where the Turkish Lira, and other valuable papers such as government papers, stock and bond certificates are printed, it was not reasonable to merge its staff with the Head Office departments. Hence, although the ratio of the group size of the Banknote Printing Plant to other two categories was 1:5, MANOVA was performed with caution.

Box's M test was significant (*Box's M* $= 401.39$, $F = 1.56$, $p < .001$). All dependent variables satisfied the equality of error variances assumption, except for the *motivation to transfer learning*, *personal capacity to transfer*, and *transfer design* factors.

The Pillai's Trace was significant ($V = .17$, $F(30,1170) = 3.61$, $p < .001$) indicating that MANOVA yielded statistically significant differences across department of the respondents, and partial $\eta^2 = .09$, the effect size was above moderate. Followed univariate ANOVA analysis yielded that *learner readiness*, *personal outcomes – negative*, *peer support*, *manager support*, and *resistance to change* differed significantly across respondents' work unit. Table 4.9. presents means and standard deviations of dependent variables for department (work unit), Table 4.10. provides univariate F-Tests results, and Table 4.11. provides post hoc comparisons across work unit of the respondents.

Table 4.9.

Means and Standard Deviations of Dependent Variables across Work Unit

Work Unit	READ M	READ SD	MOT M	MOT SD	CAP M	CAP SD	CONT M	CONT SD	DESIGN M	DESIGN SD	POP M	POP SD	PON M	PON SD	PEERS M	PEERS SD	MANS M	MANS SD	MANO M	MANO SD	SELF-E M	SELF-E SD	TEPEX M	TEPEX SD	POEX M	POEX SD	RESIST M	RESIST SD	COACH M	COACH SD
Head Office Departments	3.64	.81	3.99	.82	3.81	.82	3.35	1.01	3.76	.88	2.19	.86	1.75	.79	3.12	.91	2.53	.98	1.62	.73	3.99	.62	3.98	.66	3.06	.90	2.48	.91	2.81	.91
Banknote Print. Plant	3.87	.83	4.24	.58	3.75	.89	3.75	.99	4.02	.72	2.43	.91	2.30	.94	3.35	.92	2.89	.97	1.73	.71	4.14	.66	4.09	.75	3.15	.85	2.79	.89	2.99	.79
Branches	3.49	.79	4.11	.62	3.98	.67	3.54	.91	3.93	.74	2.30	.87	2.00	.82	3.38	.81	2.85	.92	1.70	.76	4.09	.62	4.13	.59	3.27	.81	2.75	.97	3.00	.82

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Perf. Expect., POEX= Perf.-Outcome Expect., RESIST= Resistance to Change, COACH= Perf. Coaching

Table 4.10.

Univariate F-Tests Results for the 15 T-LTSI Factors across Work Unit

Dependent Variable	SS	MS	F	Sig.	$\eta 2$ (partial)
Learner Readiness	*7.812*	*3.906*	*6.033*	*.003**	*.020*
Motivation to Transfer Learning	3.574	1.787	3.477	.032	.011
Personal Capacity for Transfer	5.271	2.636	4.538	.011	.015
Perceived Content Validity	9.538	4.769	5.151	.006	.017
Transfer Design	5.097	2.548	3.917	.020	.013
Personal Outcomes-Positive	3.228	1.614	2.130	.120	.007
Personal Outcomes-Negative	*17.778*	*8.889*	*13.260*	*.000**	*.042*
Peer Support	*9.751*	*4.875*	*6.499*	*.002**	*.021*
Manager Support	*16.144*	*8.072*	*8.871*	*.000**	*.029*
Manager Opposition	.999	.500	.904	.405	.003
Performance Self-Efficacy	1.802	.901	2.306	.101	.008
Transfer Effort-Performance Exp.	2.818	1.409	3.462	.032	.011
Performance-Outcome Exp.	6.220	3.110	4.229	.015	.014
Resistance to Change	*11.473*	*5.737*	*6.550*	*.002**	*.021*
Performance Coaching	5.492	2.746	3.717	.025	.012

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$
Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

Table 4.11.

Post Hoc Comparisons across Work Unit

Dependent Variable	Work Unit		Mean Difference	Sig.
Personal Outcome-Negative	Head Office	Banknote	-.56	.000
		Branches	-.26	.001
Peer Support	Head Office	Branches	-.26	.002
Manager Support	Head Office	Branches	-.32	.000
Resistance to Change	Head Office	Branches	-.27	.003

Note. Sig.= p value. Only significant results ($p < .005$) were reported.

Post hoc comparisons were indicated that, respondents who were working in the Head Office Departments, rated *peer support*, *manager support*, *resistance to*

change, and *personal outcomes - negative* lower than the respondents from the CBRT Branches. Similarly Head Office staff rated *personal outcomes – negative* lower than the Banknote Printing Plant personnel. Although *learner readiness* was significant F value, post hoc comparisons did not indicate significant mean differences at the .005 level.

4.2.2. Type of training

Types of training were treated as the independent variables, and learning transfer system factors derived from the T-LTSI were used as dependent variables. Delivered training programs were coded into 4 categories, however there was only one training program in the career development category which has 18 participants, and corresponds to only 3 % of the total population. Since it has a distinct program features such as designed for a unique group of participants, written exam application at the end of the program, it was not possible to move this program under any of the remaining categories. Further, due to the minimum group size requirements indicated at least 20 subjects in groups, career development training category was excluded from the analysis. As a result, training types were: occupational/technical trainings (n = 417 or 72 %), computer (software) trainings (n = 82 or 14 %), and personal growth trainings (n = 84 or 14 %).

Although the ratio of the group size of technical trainings to the other two categories was 1:5, MANOVA was performed. Box's M test was significant (*Box's M* = 445.49, *F* = 1.73, *p* < .001). All dependent variables satisfied the equality of error variances assumption, except for the *personal outcomes - negative*, and *manager opposition* factors.

The Pillai's Trace was significant (V = .28, $F(30,1134)$ = 6.25, p < .001) indicating that MANOVA yielded statistically significant differences across type of training with a partial η^2 = .14 explaining the 14 % of the total variance. Followed univariate ANOVA analysis yielded that *learner readiness*, *transfer design*, *personal outcomes – positive*, *personal outcomes – negative*, *manager support*, *manager opposition*, performance – outcome *expectations*, and

Table 4.12.

Means and Standard Deviations of Dependent Variables across Training Type

Training Type	DEPENDENT VARIABLES																													
	READ		MOT		CAP		CONT		DESIGN		POP		PON		PEERS		MANS		MANO		SELF-E		TEPEX		POEX		RESIST		COACH	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Occupational-Technical	3.60	.80	4.01	.75	3.85	.77	3.49	.97	3.80	.84	2.26	.86	2.00	.90	3.26	.88	2.81	.98	1.68	.74	4.02	.65	4.05	.65	3.14	.86	2.58	.95	3.01	.83
Computer (software)	3.87	.76	4.24	.66	4.06	.81	3.42	1.07	3.89	.82	2.01	.81	1.71	.61	3.28	.94	2.41	.90	1.41	.59	4.05	.56	4.12	.61	2.93	.93	2.63	.95	2.45	.92
Personal Growth	3.27	.84	4.16	.59	3.89	.71	3.38	.85	4.13	.60	2.50	.88	1.63	.57	3.24	.75	2.58	.87	1.88	.85	4.13	.56	4.00	.65	3.39	.72	2.82	.92	2.96	.83

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort – Perf. Expect., POEX= Perf.-Outcome Expect., RESIST= Resistance to Change, COACH= Perf. Coaching

performance coaching differed significantly across training types. Table 4.12. presents means and standard deviations of dependent variables across training types. Table 4.13. provides univariate F-Tests results for the dependent variables across training type.

Table 4.13.

Univariate F-Tests Results for the 15 T-LTSI Factors across Training Type

Dependent Variable (train type)	SS	MS	F	Sig.	η2 (partial)
Learner Readiness	*15.147*	*7.573*	*11.855*	*.000**	*.039*
Motivation to Transfer Learning	4.538	2.269	4.455	.012	.015
Personal Capacity for Transfer	3.176	1.588	2.712	.067	.009
Perceived Content Validity	.975	.488	.519	.595	.002
Transfer Design	*7.620*	*3.810*	*5.881*	*.003**	*.020*
Personal Outcomes-Positive	*9.874*	*4.937*	*6.701*	*.001**	*.023*
Personal Outcomes-Negative	*13.330*	*6.665*	*9.810*	*.000**	*.033*
Peer Support	.075	.038	.049	.952	.000
Manager Support	*12.994*	*6.497*	*7.136*	*.001**	*.024*
Manager Opposition	*9.131*	*4.566*	*8.446*	*.000**	*.028*
Performance Self-Efficacy	.903	.451	1.151	.317	.004
Transfer Effort-Performance Exp.	.584	.292	.705	.495	.002
Performance-Outcome Exp.	*8.762*	*4.381*	*6.003*	*.003**	*.020*
Resistance to Change	4.105	2.052	2.287	.102	.008
Performance Coaching	*22.009*	*11.004*	*15.521*	*.000**	*.051*

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$
Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

Table 4.14

Post Hoc Comparisons across Training Type

Dependent Variable	Training Type		Mean Difference	Sig.
Learner Readiness	Technical	Growth	.34	.002
	Computer	Growth	.60	.000
Transfer Design	Technical	Growth	-.33	.003
Personal Outcome Positive	Computer	Growth	-.49	.001
Personal Outcome Negative	Technical	Growth	.37	.001
Manager Support	Technical	Computer	.40	.003
Manager Opposition	Computer	Growth	-.47	.000
Performance-Outcome Exp.	Computer	Growth	-.46	.003
Performance Coaching	Technical	Computer	.57	.000
	Computer	Growth	-.52	.000

Note. Sig.= p value. Only significant results ($p < .005$) were reported.

Table 4.14. provides post hoc comparisons across type of training. Results indicated that respondents who were attended personal growth trainings provided higher ratings for *transfer design* than participants of technical trainings, and for *personal outcomes – positive*, *performance – outcome expectations*, and *performance coaching* factors than attendants of the computer trainings. Further, participants of technical trainings gave higher ratings for *manager support*, and *performance coaching* factors when compared to the attendants of the computer trainings. Technical training participants were rated *learner readiness*, and *personal outcomes – negative* factor higher whereas *performance coaching* factor lower than the personal growth training participants.

4.2.3. Type of participation

Types of participation were treated as the independent variables, and learning transfer system factors derived from the T-LTSI were used as dependent variables. There were three category of participation type: voluntary ($n = 227$ or 38 %), decided by managers ($n = 249$ or 42 %), and mandatory ($n = 123$ or 21 %).

Voluntary participation type indicated that participants were demanding the training program and their managers approved their demand. Decided by managers type of participation indicated that participants were selected by their managers for the training program without their previous demand, and participants informed about this decision afterwards. Mandatory type of participation declared that participants have to attend the training program by depending on the legal requirement. Although the latter two type of participation can be grouped under single involuntary category, they were kept separately due to their distinct characteristics.

Box's M test was significant (*Box's M* = 401.76, *F* = 1.61, *p* < .001). All dependent variables were satisfied the equality of error variances assumption, except for the *learner readiness*, *personal outcomes - negative*, and *performance self-efficacy* factors.

The Pillai's Trace was significant (*V* = .25, *F*(30,1168) = 5.45, *p* < .001) indicating that MANOVA yielded statistically significant differences across type of training with a partial η^2 value of .12 explaining the 12 % of the total variance. Followed univariate ANOVA analysis yielded that *learner readiness*, *perceived content validity*, *personal outcomes – negative*, *performance self-efficacy, transfer effort – performance expectations*, and *performance coaching* differed significantly across type of participation of the respondents.

Table 4.15. presents means and standard deviations of dependent variables across type of participation. Table 4.16. provides univariate F-Tests results, and Table 4.17. provides post hoc comparisons across type of participation.

Table 4.15.

Means and Standard Deviations of Dependent Variables across Participation Type

Participation Type	DEPENDENT VARIABLES																													
	READ		MOT		CAP		CONT		DESIGN		POP		PON		PEERS		MANS		MANO		SELF-E		TEPEX		POEX		RESIST		COACH	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Voluntary	3.68	.74	4.11	.72	3.91	.73	3.49	.93	3.85	.81	2.22	.88	1.75	.76	3.19	.90	2.61	.95	1.57	.70	4.06	.57	4.08	.58	3.10	.87	2.67	.96	2.73	.87
Decided by Managers	3.36	.83	3.97	.70	3.83	.78	3.33	.99	3.79	.82	2.24	.84	1.82	.75	3.21	.85	2.73	.91	1.67	.73	3.93	.66	3.95	.69	3.12	.86	2.68	.97	2.90	.82
Mandatory	3.90	.76	4.19	.74	3.93	.79	3.73	.95	4.02	.77	2.40	.92	2.40	.95	3.47	.84	2.86	1.07	1.84	.83	4.27	.60	4.23	.60	3.37	.82	2.49	.85	3.28	.83

Note. READ= Learner Readiness, MOT= Motivation to Transfer Learning, CAP= Personal Capacity for Transfer, CONT= Perceived Content Validity, DESIGN= Transfer Design, POP= Personal Outcomes-Positive, PON= Personal Outcomes-Negative, PEERS= Peer Support, MANS= Supervisor/Manager Support, MANO= Supervisor/Manager Opposition, SEL-E= Performance Self-Efficacy, TEPEX= Transfer Effort − Perf. Expect., POEX= Perf.-Outcome Expect., RESIST= Resistance to Change, COACH= Perf. Coaching

Table 4.16.

Univariate F-Tests Results for the 15 T-LTSI Factors across Participation Type

Dependent Variable	SS	MS	F	Sig.	η^2 (partial)
Learner Readiness	*26.476*	*13.238*	*21.453*	*.000**	*.067*
Motivation to Transfer Learning	4.624	2.312	4.519	.011	.015
Personal Capacity for Transfer	.987	.494	.841	.432	.003
Perceived Content Validity	*13.622*	*6.811*	*7.429*	*.001**	*.024*
Transfer Design	4.384	2.192	3.369	.035	.011
Personal Outcomes-Positive	2.858	1.429	1.886	.153	.006
Personal Outcomes-Negative	*37.472*	*18.736*	*29.348*	*.000**	*.090*
Peer Support	7.222	3.611	4.811	.008	.016
Manager Support	5.216	2.608	2.818	.060	.009
Manager Opposition	5.581	2.791	5.120	.006	.017
Performance Self-Efficacy	*9.137*	*4.568*	*12.075*	*.000**	*.039*
Transfer Effort-Performance Exp.	*6.621*	*3.311*	*8.252*	*.000**	*.027*
Performance-Outcome Exp.	6.379	3.190	4.334	.014	.014
Resistance to Change	3.531	1.765	1.992	.137	.007
Performance Coaching	*23.584*	*11.792*	*16.613*	*.000**	*.053*

Note. SS = Sum of Squares, MS = Mean Square, F = F-Test Value, Sig.= p value. * $p < .005$

Dependent variables with significant F-Test results were italic. Training-general domains were shaded.

Table 4.17.

Post Hoc Comparisons across Participation Type

Dependent Variable	Participation Type		Mean Difference	Sig.
Learner Readiness	Voluntary	Man. Decision	.32	.000
	Man. Decision	Mandatory	-.54	.000
Perceived Content Validity	Man. Decision	Mandatory	-.41	.001
Personal Outcome Negative	Voluntary	Mandatory	-.65	.000
	Man. Decision	Mandatory	-.58	.000
Performance Self-Efficacy	Man. Decision	Mandatory	-.33	.000
Transfer Effort - Perf. Exp.	Man. Decision	Mandatory	-.28	.000
Performance Coaching	Voluntary	Mandatory	-.54	.000
	Man. Decision	Mandatory	-.37	.000

Note. Sig.= p value. Only significant results ($p < .005$) were reported.

Post hoc comparisons indicated that respondents who were attended mandatory trainings, provided higher ratings for *learner readiness, perceived content validity, personal outcomes – negative, performance self-efficacy, transfer effort – performance expectations,* and *performance coaching* than attendants decided by managers, and for *personal outcomes – negative*, and *performance coaching* factors than voluntary participants. Further, voluntary participants gave higher ratings for *learner readiness*, when compared to the attendants decided by managers. Voluntary participants gave lower ratings for *personal outcomes - negative*, and *performance coaching* factors compared to the mandatory training participants.

4.3. Research Question Three

Research question three asked 'Whether work environment factors predict training transfer more than other factors of the T-LTSI (trainee characteristics, motivation, and ability/enabling scales) in terms of training transfer scores of the 'Security Officers Training Program' delivered by the Training Center of the CBRT?'

Multiple Regression analysis was performed to answer the research question three. Training transfer scores of the security officers training program participants ($n = 101$) were the dependent/outcome variable of interest, whereas mean scores of the extracted T-LTSI factors were treated as independent/predictor variables. Since the T-LTSI composed of two separate domains sequential (hierarchical) multiple regression was performed. Training-specific domain factors were entered into the regression equation as a first block, since 5 of the 7 factors of the work environment factors which are hypothesized as more critical in the training transfer by the researcher, were placed under the training-specific domain. Training-general domain factors were entered the regression equation as a second block, sequentially.

Since extreme cases have too much impact on the regression solution, univariate and multivariate outliers were checked through z-scores and Mahalanobis distance, respectively. 7 cases were identified as univariate outliers according to + 3.29 to -3.29 critical z-scores. Critical value of the chi square was found as χ^2 (15) = 37.70 (p < .001). Two cases were found to have exceeding critical chi square value. Pattern of univariate and multivariate outliers indicated that 4 univariate outliers have very close values to critical chi square value and excluded from the analysis. Hence, a total of six cases (529, 604, 558, 559, 575, and 547) were excluded from the further analysis, and MR was performed with 95 cases. No missing values were found in the data set.

According to the Tabachnick and Fidell (2001), rule of thumb for required sample size in MR is N ≥ 50 + 8m (m is the number of predictors). There were 15 predictors in the study, and 170 cases were needed. Since there were 95 cases in the study, sample size could be considered as a limitation for the stability, and power of the regression analysis.

Normality and linearity of residuals were checked through P-P Plot of regression standardized residuals and homoscedasticity was checked via residuals scatter plot. P-P Plot indicating mild deviations of normality. Examination of scatter plot pointed out that there was no apparent pattern of predicted values and residuals.

Independence of errors was checked through 'Durbin-Watson' statistics. The full model had a value of 1.87 and since it was expected to be in a 1.5 – 2.5 range, there was no violation of the assumption. In terms of checking the multicollinearity, variance inflation factor (VIF) and tolerance statistics were analyzed. Since all the VIF values are lower than 4, and tolerance values are higher than .20, multicollinearity was not detected.

Table 4.18. provides bivariate correlations of the dependent and independent variables, together with mean and standard deviations. Examination of the bivariate correlations indicated that only *personal outcomes-negative* was significantly correlated, and *transfer design*, and *motivation to transfer learning* factors were approached .05 significance level ($p = .06$, and $p = .07$, respectively) with the dependent variable.

Training-specific factors were entered the regression equation as a first block, and training-general factors were entered into the equation sequentially. *R* was significantly different from zero at the end of the each step. After step two, with all IVs in the equation, $R = .46$, $\underline{F} (15, 79) = 1.84$, p < .05, indicating the significance of the full regression model. After step 1, with training-specific factors in the equation, $R^2 = .21$ $F (10, 84) = 2.24$, $p < .05$. After step two, with training-general factors were added to the equation, $R^2 = .26$, $\underline{F}_{change} (5, 79) = 1.04$, $p > .05$ revealing that addition of training-general factors to the equation did not significantly improve R^2.

Unstandardized regression coefficients (*B*), standardized regression coefficients (β), *t*-statistics, multiple correlation coefficient (*R*), squared multiple correlation coefficient (R^2), and adjusted R^2, and squared semi-partial correlations ($\underline{sr}_i^2$) were reported at Table 4.19.

Table 4.18.

Bivariate correlations of the Transfer Score, and the T-LTSI Factors (N = 95)

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Transfer Score	--															
2. Learner Readiness	-.05	--														
3. Motivation to Transfer Learn.	-.15	.30**	--													
4. Personal Capacity for Trans.	.01	.20*	.35**	--												
5. Perceived Content Validity	.01	.36**	.44**	.23*	--											
6. Transfer Design	.16	.43**	.56**	.23*	.58**	--										
7. Personal Outcomes-Positive	-.10	.11	.33**	.19*	.22*	.20*	--									
8. Personal Outcomes-Negative	.20*	.08	.07	-.09	-.01	.14	.11	--								
9. Peer Support	.07	.20*	.27**	.24*	.42**	.49**	.35**	.38**	--							
10. Manager Support	.12	.27**	.43**	.36**	.49**	.41**	.52**	.15	.52**	--						
11. Manager Opposition	-.05	-.26*	-.34**	-.49**	-.38**	-.36**	-.18*	-.01	-.31**	-.47**	--					
12. Performance Self-Efficacy	.04	.31**	.39**	.38**	.34**	.49**	.08	.06	.34**	.30**	-.37**	--				
13. Transfer Effort-Perf. Exp.	-.09	.44**	.61**	.34**	.46**	.54**	.22*	-.03	.38**	.40**	-.37**	.42**	--			
14. Performance-Outcome Exp.	-.03	.33**	.41**	.35**	.36**	.50**	.43*	.06	.34**	.43**	-.30**	.39**	.53**	--		
15. Resistance to Change	.09	-.19*	-.26*	-.30**	-.28**	-.32**	-.11	.05	-.30**	-.50**	.51**	-.31**	-.33**	-.27**	--	
16. Performance Coaching	.01	.17	.26*	.15	.24**	.24*	.26*	.20*	.38**	.36**	-.20**	.32**	.23*	.46**	-.28**	--
M	4.46	4.09	4.40	4.03	4.00	4.22	2.41	2.58	3.58	2.98	1.86	4.30	4.32	3.42	2.55	3.25
SD	.38	.59	.46	.70	.66	.56	.91	.86	.74	1.00	.83	.58	.59	.74	.83	.80

Note. ** = p< .01, two-tailed. * = p< .05, two-tailed. Training-general scales were shaded.

Table 4.19.

Results of Sequential Regression Analysis for the T-LTSI Factors Predicting Transfer Score (N = 95)

	Model 1						Model 2					
Variable	B	$SE\ B$	β	t	p	$\underline{sr}_i^2$	B	$SE\ B$	β	t	p	$\underline{sr}_i^2$
Learner Readiness	-.10	.07	-.16	-1.46	.149	.020	-.10	.07	-.16	-1.38	.171	.018
Motivation to Transfer Learn.	-.30	.10	-.37	-2.88	.005	.078	-.30	.12	-.37	-2.62	.010	.065
Personal Capacity for Trans.	.04	.06	.08	.70	.486	.005	.05	.07	.09	.77	.441	.006
Perceived Content Validity	-.03	.08	-.05	-.39	.700	.001	-.05	.08	-.08	-.61	.543	.004
Transfer Design	.27	.10	.41	2.86	.005	.077	.32	.10	.47	3.03	.003	.086
Personal Outcomes-Positive	-.07	.05	-.16	-1.36	.176	.017	-.08	.05	-.18	-1.44	.153	.020
Personal Outcomes-Negative	.10	.05	.23	2.07	.042	.040	.08	.05	.18	1.60	.114	.024
Peer Support	-.09	.07	-.18	-1.34	.184	.017	-.09	.07	-.17	-1.21	.229	.014
Manager Support	.11	.05	.30	2.10	.039	.041	.15	.06	.41	2.71	.008	.069
Manager Opposition	.01	.06	.01	.11	.914	.000	-.03	.06	-.07	-.55	.581	.003
Performance Self-Efficacy							.00	.08	.00	.01	.995	.000
Transfer Effort-Perfor. Exp.							.01	.10	.01	.07	.947	.000
Performance-Outcome Exp.							-.05	.07	-.10	-.67	.506	.004
Resistance to Change							.12	.06	.27	2.17	.033	.044
Performance Coaching							.03	.06	.06	.51	.613	.000
R			.46						.51			
R^2			.21						.26			
Adj. R^2			.12						.12			
F for change in R^2			2.24						1.04			

The full regression model explained the 26 % of the total variance in transfer scores of the security officers training program participants, in terms of R^2 value. Analysis of the significance of the regression coefficients (B values), and $\underline{sr_i}^2$ values yielded that among training-specific factors, motivation to transfer learning, transfer design, personal outcomes-negative, manager support significantly contributed to the explained variance with the unique proportions of 7.8 % , 7.7 %, 4 %, and 4.1 %, respectively.

Although second block of factors, training-general factors, did not contribute significantly to the R^2, since the full model was significant, significant unique contribution of the resistance to change, with 4.4 % of the explained variance, could be considered. However, adjusted R^2 was declined sharply in the first model compared to the R^2, and showed no increase in the second model despite the 20 % of increase in the R^2. The reason of decrease in the adjusted R^2 related with the high number of predictors included in the regression model.

Among the significant unique predictors, *personal outcomes-negative*, *manager support*, and *resistance to change* factors were related with work environment dimension of the T-LTSI, and explained more variance than the *motivation to transfer learning*, and *transfer design* factors of motivation dimension, and ability/enabling factors dimensions, respectively.

4.4. Summary of Results

Results indicated that transfer system perception of individuals, through the constructs of the T-LTSI, differ in terms of their characteristics. *Personal outcomes-negative* and *performance coaching* perceived significantly different by the females and males, and females gave lower ratings to these scales. In terms of educational level, *personal outcomes-positive, personal outcomes-negative, manager opposition, performance-outcome expectations*, and *performance coaching* factors yielded significant mean differences, and high school graduates gave higher ratings for those factors compared to the respondents with undergraduate and graduate degree. Finally, *learner readiness*, *motivation to transfer learning*, *perceived content validity*, *transfer design*, *personal outcomes – negative*, *manager support*,

performance self-efficacy, and *performance coaching* factors differed significantly by participants' years of work experience, and respondents who have worked under five years provided lower rating for those factors, except for the *performance coaching* factor.

Results further demonstrated that transfer system perceptions were also differed in terms of organizational variables. *Personal outcomes – negative*, *peer support*, *manager support*, and *resistance to change* differed significantly across respondents' work unit, and respondents working in the CBRT Branches gave lower ratings for those scales than the staff of the Head Office employees. Regarding the type of training, participants of personal growth trainings provided higher ratings than the computer training participants for the *personal outcomes – positive, performance –* outcome *expectations,* and *performance coaching*. Technical trainings participants were rated *learner readiness*, and *personal outcomes – negative* factors higher whereas *performance coaching* factor lower than the personal growth training program participants. Finally, *learner readiness*, *perceived content validity*, *personal outcomes – negative*, *performance self-efficacy, transfer effort – performance expectations*, and *performance coaching* factors yielded significant mean differences in terms of participation type, and participants attended mandatory trainings provided higher ratings for those scales than the voluntary participants and participants decided by their managers.

Lastly, *motivation to transfer learning*, *transfer design*, *personal outcomes – negative*, *manager support*, and *resistance to change* factors found to have significant predictors of the 'training transfer scores' of the security officers training program participants. Work environment dimension factors explained more variance than the motivation, and ability/enabling factors dimensions, in terms of their unique contributions. According to the multiple regression results, higher levels of transfer scores were associated with the higher relevance of *transfer design*, higher levels of *personal outcomes negative*, higher levels of *manager support*, higher levels of *resistance to change*, and lower levels of *motivation to transfer learning*.

CHAPTER 5

DISCUSSION

This chapter includes the discussion of the results regarding impact of group differences on learning transfer system factors, learning transfer system factors and their influence on transfer of training, implications for practice, and recommendations for future research.

5.1. The Learning Transfer System Factors and Group Differences

This study was conducted to explore the influence of transfer system factors on training transfer at the CBRT. LTSI adapted to Turkish Language (T-LTSI) and Exploratory Factor Analysis results, together with the internal consistency measures of the scales, suggested that the T-LTSI can provide psychometrically sound measurement for learning transfer system in Turkey. The factor mean scores of the T-LTSI were used as dependent variables of interest of the MANOVA, in answering first and second research questions focusing on the individual and situational differences.

Results of MANOVA indicated that learning transfer system perceptions were significantly different across trainee characteristics (gender, level of education, and years of work experience), and organizational variables (work unit, type of training, and type of participation). The results demonstrated that transfer system factors were not same for all individuals and for all situations, as expected by the researcher.

5.1.1. Differences in Trainee Characteristics

If transfer system perceptions of individuals differ in terms of their characteristics, these differences could be taken into account in design and delivery of the training programs, as well as implementing organizational interventions, in order to increase effective transfer of training. This study reported that trainee characteristics including gender, education level, and work experience (in years) were associated with how people perceive transfer systems in organizations.

Results of this study indicated that female employees reported lower levels of negative personal outcomes including reprimands, peer resentment, or warnings when they do not apply newly learned skills and knowledge, than male employees. They were also perceived less formal and informal feedback from people in their work environment on how to improve their work performance. These findings may suggest that female employees receive lower levels of feedback in either negative or positive direction from their work environment regarding their performance of new skill and knowledge application, when compared to the male employees.

Results related with the level of education suggested an apparent pattern that employees with lower educational levels have higher outcome expectations depending on the increase in their performance, and they expect higher positive personal outcomes through the use of new skills and knowledge. Further, they perceived higher performance coaching from their work environment. These findings may suggest that employees with lower educational levels recognized the training interventions as a means of a development opportunity and an occasion to be rewarded. They may also perceive training programs as a compensation to close the education gap with more formally-educated groups. This pattern was also very congruent with the Khasawneh et al. (2006) study findings.

Another pattern related to the education level was employees with lower formal education level perceived more developmental feedback regarding their performance and more negative personal outcomes from their work environment compared to the more formally-educated counterparts.

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They may perceive more signals from their work environment in terms of guiding their job performance compared to their co-workers.

In terms of years of work experience, results also suggested that inexperienced staff perceived training program contents less reflective of their job requirements, perceived the methods, examples, and activities used in trainings less relevant to their job tasks. Further, they have lower confidence and self-assurance in adapting new learnings to their jobs, and overcoming obstacles that hinders the use of new skills. They were also less motivated to transfer learned skills and knowledge to work environment, although they perceived more signals from the people in the work environment regarding negative personal outcomes related with not adapting the new skills to the job, and positive feedback in terms of how they improve their work performance.

This obvious unfavorable pattern for novice employees was replaced with more optimistic depiction for more experienced employees. Senior workers have higher perceptions of readiness for training programs in advance, perceived higher job relevancy in terms of content and methods of trainings. Also they are more motivated to transfer learning, and more comfortable in dealing with obstacles hindering new learning transfer. These findings are consistent with the previous research (Chen et al., 2005, Khasawneh et al., 2006), and indicate that longer job tenure provides employees with raised awareness regarding their tasks and duties, due to increased familiarity with their work environment. As a result, building partnership in the CBRT between novice and senior employees seems to help junior workers in terms of developing their job competency, self-confidence and motivation, which in turn foster the transfer of new learning and skills to the work environment.

5.1.2. Differences in Organizational Factors

Perceptions regarding learning transfer systems also demonstrated significant differences across organizational factors including the work unit, the type of training, and the type of participation. Work unit is found to exhibit clear distinction in learning transfer system perceptions of the employees from the Head Office departments, and Branches of the CBRT (Branches). When compared to the

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co-workers in the Head Office departments, Branch staff perceives higher support from peers and managers regarding the application of newly learned knowledge and skills to their work environment. Similarly, they perceive warnings and reprimands more when they do not apply used learning and skills, whereas they perceive higher resistance to change from the people in their work group.

All the significant differences among the Head Office departments and CBRT Branches stems from the work environment factors of the learning transfer systems. All the Head Office departments were operated in the Head Office building in separate flats in Ankara on the other hand Branches (including Ankara Branch) were operated in 21 different cities with their own separate buildings. Compared to the Head Office departments, Branches operating in a more closed work environment, dealing with more monotonous tasks, and their interactions either with other Branches or Head Office departments were limited. Further, Branches were operating with comparatively few resources. Therefore, within a relatively closed work environment with scarce resources support from the peers and managers becomes important in transferring learnings. However, higher perceptions of resistance to change from work group may be related with the monotonous nature of the tasks undertaken by the CBRT Branches.

Before moving on the work unit differences, it should be noted that mean scores of the Banknote Printing Plant staff were close to the mean scores of Branch staff, on the factors producing significant differences. However, as the ratio of the sample size of Head Office departments to Banknote Printing Plant was higher than 5:1, post hoc comparisons did not result in significant mean differences among the Head Office departments and the Banknote Printing Plant.

Examination of the transfer system perceptions across the type of the training revealed that participants of technical training programs appeared to be more ready for their trainings, perceive more support from the managers and people in the work groups, and perceive less negative personal outcomes from their environment rather than either computer or personal growth trainings. In the CBRT Training Center, technical training programs were designed specifically for a

selected subject matter for a relatively homogenous target population. These findings suggested that the direct relevance of the technical trainings with job requirements helps participants build more positive and supportive transfer system perceptions.

On the other hand, participants of personal growth trainings perceived positive personal outcomes, performance outcome expectations, and positive feedback regarding their performance higher than the attendants of computer trainings. If computer programs were considered close to the technical trainings, these findings would be surprising. However, exploration of the training programs in computer, and personal growth trainings yielded that, in computer programs general programs delivered to quite heterogeneous target groups (i.e. EXCEL, Advance EXCEL) constitute the 63 percent, and in personal growth programs, conflict management training, designed specifically to the work environments of cash departments of Branches, constitute 78 percent of the trainings in these sub-groups. Based on these findings, it was concluded that context-specific nature of the conflict management training programs leaded their participants to have more positive transfer system perceptions compared to the participants of computer software programs designed for general purposes.

Finally, learning transfer system perceptions were found to be significantly different across type of participation. A very clear pattern indicated that employees valued mandatory type of participation over voluntary and/or decided by manager type of participation. Mandatory trainings participants have stronger and more positive transfer system perceptions in terms of readiness, content validity, negative personal outcomes, performance self-efficacy, transfer effort − performance expectations, and performance coaching factors. These results were consistent with the Tsai (2003) findings reporting that mandatory trainings lead to an increase in the motivation of participants through the implication that such training was essential to organizational achievement, and Baldwin and Magjuka's (1991) results indicating that trainees had greater intention to transfer, if the program was perceived as mandatory.

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One more finding worth noting related to the type or participation was higher readiness perceptions of voluntary participants than the decided by managers type of participation. Decided by managers type of participation implies that a training participant was valued by his/her managers and selected among the work group purposively in assigning the training program of interest. However, the lack of prior interest in the training program undermined their readiness level. This result is consistent with Mathieu, Tannenbaum, and Salas (1992) study reporting that if trainees provided a choice in participation to training, they were generally showed higher motivation to learn.

5.2. Predictive Ability of the Learning Transfer System Factors on Training Transfer Scores

The objective of the third research question was to investigate the ability of the T-LTSI work environment factors to account for a more significant portion of the total variance compared to the other scales of the T-LTSI in the training transfer scores of the security officers training program participants.

Findings indicated that 26 % of the total variance explained by the sequential multiple regression and *motivation to transfer learning*, *transfer design*, *personal outcomes-negative*, *manager support*, and *resistance to change* factors contributed significantly to the explained variance on the transfer scores.

The regression model suggested that higher levels of training transfer score were associated with higher relevance of the training methods and applications with job, higher level of warnings, and reprimands received from the work environment, higher level of support obtained from the managers regarding the application of the new skills, higher resistance from prevailing group norms and more surprisingly lower level of motivation to transfer learning.

The unique nature of the security officers training program can play a key role in understanding why receiving higher level of warnings, reprimands, and penalties from the work environment was associated with higher levels of transfer score. First of all, security officers training program was an obligatory one, and

provides the security officer with an official certificate to work. National legal framework, through the law 5188, regulates the field of special security officers, as an additional work force to the law-enforcement officers. Security officers of the CBRT were working to be dependent on law 5188, and if they present any operations contrary to legal framework they are penalized for their actions. Therefore, main motivation behind the higher levels of transfer scores of security officers training could be anxiety of not applying refreshed knowledge and skills, and penalization by the legal framework.

It should be noted explicitly that stability and generalizability of the regression model is disputable due to the sample size restriction. 95 cases were not satisfactory for testing the regression model including 15 predictor variables. Although $\underline{R}^2$ indicated that 26 % of the variance explained by the regression model, adjusted $\underline{R}^2$ implied that only 12 % of the variance was explained by the transfer system factors. Hair et al. (2006) reported that adjusted $\underline{R}^2$ was penalized the number of predictors in the regression model, and provides a more honest value. Hence, only 12 % of the variance was explained by the model, when the number of predictors is taken into account, which was considered low in terms of the strength of the association.

The supportive role of managers in training transfer has been demonstrated regarding active guidance of the trainee on transfer tasks (Gümüşeli & Ergin, 2002), discussion with managers on using new skills, and engagement of managers in training (Lim & Johnson, 2002). Basat (2010) also declared that managerial support was perceived by the trainees as a critical factor in transfer. In the light of these results, together with the results of this study regarding manager support, supportive behaviors of managers were considered as salient contributors to transfer.

Transfer design construct of the T-LTSI, together with the perceived content validity construct, measured the relevance of the training content and techniques to the job context, and was found to have significant predictor of the transfer in the present study. This finding was supported by the study of Yamnill and McLean (2005) study reporting that content relevance emerged as the major construct in predicting successful transfer perceived by the trainees.

5.3. Implications for Practice

Results of the research questions together with the descriptive data obtained from the learning transfer system factors provides quite critical data in order to build effective training transfer systems in organizations, in this case in the CBRT.

It was clear that transfer system effectiveness was not limited to the factors related with the training per se. Human resources regulations and practices were also critical. In order to motivate employees to transfer newly-learned knowledge and skills to work environment, an organization should clearly link the positive personal outcomes to transfer of the learned knowledge and skills. However, it seemed that this was not the case for the CBRT. Exploration of the mean scores of the T-LTSI factors yielded that personal outcomes – positive factor was given the lowest mean scores (2.26 out of five) among the factors composed of items with positive directions. Similarly, performance – outcome expectations, implying that changes in job performance will lead to valued outcomes, factor mean score is 3.16. These findings indicated that CBRT employees participating in this study were not able to see linkage between the transfer of training and valued outcomes. Therefore, before concentrating on the training interventions, in order to increase training transfer, the CBRT should concentrate on building a promotion system for the transfer of training. Results further indicated that voluntary type of participation should be encouraged by the organizational system in order to ensure trainees to perceive themselves more ready for the training interventions.

Results of the question one and two indicated that the perceptions of learning transfer system were differed significantly across trainee characteristics and organizational factors. These differences should be taken into account by the training specialists in the design and delivery of the training programs. For example, in terms of job tenure, novice employees' perceptions of the learning transfer system factors were discouraging compared to the more senior workers. To let them perceive their trainings more relevant to their job, they should assigned to training programs designed peculiarly to their jobs, at the beginning of their career.

Managerial support was identified as a significant predictor of transfer in this study. Therefore, CBRT managers must be aware of their important role in improving training transfer. Meeting the trainees regularly to discuss the ways to adapt new learning to job, resolving problems hindering the transfer of the skills learned on the training, and setting the goals for job performance depending on the training program may well improve the training transfer if applied with a supportive manner by the managers. Further, results indicated that voluntary type of participation made participants more ready for trainings than the decided by manager type of participation, hence the CBRT managers should seek first the involvement of their employee towards the training before assigning them to any training program.

5.4. Recommendations for Future Research

Demonstrating the construct structure of the T-LTSI was not the primary purpose of this study. However, it was necessary to discuss critical points for the adaptation of the instrument to the Turkish Language in order to be considered in the cross-cultural instrument validation research.

Learning Transfer System Inventory (LTSI) was selected as a major research instrument for the study due to its sound psychometric qualities demonstrated in U.S. and other cross-cultural contexts (Bates, Holton & Hatala, 2012; Holton, Bates & Bookter, 2007; Yamkovenko, Holton & Bates, 2007; Khasawneh, Bates, & Holton, 2006; Chen, Holton & Bates, 2005; Holton, Bates & Ruona, 2000; Seyler, Holton, Bates, Burnett, & Carvalho, 1998).

The results of the factor analysis of the adapted T-LTSI demonstrated that except for the *opportunity to use learning* factor, 15 factors were emerged from the data collected from the CBRT, identical to the original factors of the LTSI. Opportunity to use learning factor did not emerged, however its two items were retained in the *motivation to transfer learning*, and *transfer design* scale due to their psychometric properties and semantic harmony with these scales. A similar pattern was also observed in the Chen et al. (2005) study, *transfer design*, and *opportunity to use learning* scales emerged as one reliable factor. As reported in the

Yamkovenko et al. (2007) study, this scale was represented with only two items and internal consistency of the scale was below .60. In future research, opportunity to use learning scale will be represented with other items rather than the current ones to test its replicability in cross-cultural contexts.

The second concern was related with the personal capacity to transfer factors. Although this factor emerged with all its original items, its internal consistency measure was .60. This low reliability value was also observed in Khasawneh (2004) study with .55 (two items retained in the scale), and the author recommended that there was a need to increase the number of items in this factor, and avoid to write items that have negative connotations. Similarly, in the Turkish version, personal capacity to transfer scale needs further examination.

In terms of providing construct validity evidence for the T-LTSI, confirmatory factor analysis will be needed. For further research, factor structure of the T-LTSI can be validated through structural equation modelling approach.

Transfer of learning was obtained through supervisory evaluation in this study, however it should be noted that leniency and range restriction were clearly observed in the evaluation of the descriptive statistics of the provided ratings. These rater errors can attenuate the relationship of the transfer scores with the transfer system constructs. Hence, alternative ways of collecting transfer data recommended for future research to contribute the emergence of more factors influencing transfer will recommended.

Only T-LTSI factors were used in this study, as the factors influencing the transfer of training. However using the T-LTSI could well limit the emergence of factors peculiar to the Turkish culture. Hence, a systematic and training-specific qualitative effort including interviews and focus groups may be helpful in discovering those new factors, if any.

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APPENDICES

APPENDIX A

SCALE DESCRIPTIONS OF THE LTSI

SCALE NAME	SCALE DEFINITION	SCALE DESCRIPTION
TRAINEE CHARACTERISTICS SCALES		
Learner Readiness	The extent to which individuals are prepared to enter and participate in a training program.	This factor addresses the degree to which the individual had the opportunity to provide input prior to the training, knew what to expect during the training, and understood how training was related to job-related development and work performance.
Performance Self - Efficacy	An individual's general belief that they are able to change their performance when they want to.	The extent to which individuals feel confident and self-assured about applying new abilities in their jobs, and can overcome obstacles that hinder the use of new knowledge and skills.
MOTIVATION SCALES		
Motivation to Transfer Learning	The direction, intensity and persistence of effort toward utilizing in a work setting skills and knowledge learned in training.	The extent to which individuals are motivated to utilize learning in their work. This includes the degree to which individuals feel better able to perform, plan to use new skills and knowledge, and believe new skills will help them to more effectively perform on-the-job
Transfer Effort— Performance Expectations	The expectation that effort devoted to transferring learning will lead to changes in job performance.	The extent to which individuals believe that applying skills and knowledge learned in training will improve their performance. This includes whether an individual believes that investing effort to utilize new skills has made a difference in the past or will affect future productivity and effectiveness.
Performance — Outcomes Expectations	The expectation that changes in job performance will lead to outcomes valued by the individual.	The extent to which individuals believe the application of skills and knowledge learned in training will lead to recognition they value. This includes the extent to which organizations demonstrate the link between development, performance, and recognition, clearly articulate performance expectations, recognize individuals when they do well, reward individuals for effective and improved performance, and create an environment in which individuals feel good about performing well.

SCALE NAME	SCALE DEFINITION	SCALE DESCRIPTION
WORK ENVIRONMENT SCALES		
Performance Coaching	Formal and informal indicators from an organization about an individual's job performance	The extent to which individuals receive constructive input, assistance, and feedback from people in their work environment (peers, employees, colleagues, managers, etc.) when applying new abilities or attempting to improve work performance. Feedback may be formal or informal cues from the workplace.
Supervisor/ Manager Support	The extent to which managers support and reinforce the use of learning on-the-job.	This includes managers' involvement in clarifying performance expectations after training, identifying opportunities to apply new skills and knowledge, setting realistic goals based on training, working with individuals on problems encountered while applying new skills, and providing feedback when individuals successfully apply new abilities.
Supervisor/ Manager Opposition	The extent to which individuals perceive negative responses from managers when applying skills learned in training.	This includes when managers oppose the use of new skills and knowledge, use techniques different from those taught in training, do not assist individuals in identifying opportunities to apply new skills and knowledge, or provide inadequate or negative feedback when individuals successfully apply learning on-the-job.
Peer Support	The extent to which peers reinforce and support use of learning on-the-job.	This includes the degree to which peers mutually identify and implement opportunities to apply skills and knowledge learned in training, encourage the use of or expect the application of new skills, display patience with difficulties associated with applying new skills, or demonstrate appreciation for the use of new skills.
Resistance to Change	The extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training.	This includes the work groups' resistance to change, willingness to invest energy to change, and degree of support provided to individuals who use techniques learned in training.
Personal Outcomes- Positive	The degree to which applying training on the job leads to outcomes that are positive for the individual.	Positive outcomes include: increased productivity and work effectiveness, increased personal satisfaction, additional respect, a salary increase or reward, the opportunity to further career development plans, or the opportunity to advance in the organization.

SCALE NAME	SCALE DEFINITION	SCALE DESCRIPTION
WORK ENVIRONMENT SCALES		
Personal Outcomes— Negative	The extent to which individuals believe that if they <u>do not</u> apply new skills and knowledge learned in training that it will lead to outcomes that are negative.	Negative outcomes include: reprimands, penalties, peer resentment, reassignment to undesirable jobs, or reduced opportunities for further job or career development.
ABILITY SCALES		
Opportunity to Use Learning	The extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use the skills taught in training.	This includes an organization providing individuals with opportunities to apply new skills, resources needed to use new skills (equipment, information, materials, supplies), and adequate financial and human resources.
Personal Capacity for Transfer	The extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job.	This factor addresses the extent to which individuals' work load, schedule, personal energy, and stress-level facilitate or inhibit the application of new learning on-the-job.
Perceived Content Validity	The extent to which the trainees judge the training content to accurately reflect job requirements.	This factor addresses the degree to which skills and knowledge taught are similar to performance expectations as well as what the individual needed to perform more effectively. It also addresses the extent to which instructional methods, aids, and equipment used in training are similar to those used in an individual's work environment.
Transfer Design	The extent to which training has been designed to give trainees the ability to transfer learning to job application.	The extent to which the training program is designed to clearly link learning with on-the-job performance through the use of clear examples, methods similar to the work environment, and activities and exercises that clearly demonstrate how to apply new knowledge and skills.

APPENDIX B

SUMMARY INFORMATION ABOUT TRAINING PROGRAMS IN THE STUDY

Name of the Training Program	Gr.N.	Dur.	Language	Part. N.	Resp. N.
Determining Document Forgery	1	3	Turkish	22	12
Taxing Regulations	1	2	Turkish	22	18
Drupal 7.0 (computer software)	1	3	Turkish	17	17
Career Development of Security Guards	1	10	Turkish	30	18
Tax, Wages, and Per Diem Allowances	1	4	Turkish	24	22
An Intro. to General Equilibrium Models	1	3	English	19	15
Purchasing Legislation and CBRT Appliance	1	2	Turkish	23	14
Current Financial Instruments	1	3	Turkish	17	12
Project Management Training	1	2	Turkish	11	10
Time, Cost and Budget Man. in Projects	2	3	Turkish	24	21
COSO-Risk and Internal Audit Applications	2	3	Turkish	33	19
ORACLE - Business Intelligence	1	2	Turkish	23	14
Presentation Skills in English	1	2	English	12	9
Legal Aspects of Banking Issues	1	4	Turkish	21	21
Assistant Specialists Training Program	1	20	Turkish	31	20
Credit Report Training	2	2	Turkish	42	32
Financial Accounts in ECB	1	5	English	12	8
Code of Contact in Public Sphere	1	2	Turkish	17	11
EXCEL	3	3	Turkish	47	44
Closing of Tax-Exempt Issues in Export	1	2	Turkish	22	17
Money Laundering Prevention Regulations	1	2	Turkish	22	15
Financial Econometrics	1	5	English	21	5
Management Training	1	5	Turkish	18	8
IFRS Updating Training	2	2	Turkish	23	21
Internal Auditors Development Program	1	5	Turkish	24	18
Process Management	1	2	Turkish	22	18
Advanced EXCEL	1	2	Turkish	12	8
Conflict Management Training	3	4	Turkish	66	57
Security Officers Training Program	6	8	Turkish	112	105
Total	42	-	-	789	609

Note. Gr.N.= number of groups delivered; Dur.= duration of the training, in days; Language= training language; Part. N.= number of participants; Resp. N.= number of respondents.

APPENDIX C

APPROVAL LETTER OF THE METU ETHICAL COUNCIL

FEN BİLİMLERİ ENSTİTÜSÜ
GRADUATE SCHOOL OF NATURAL AND
APPLIED SCIENCES

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03.03.2014

Gönderilen : Prof. Dr. Meral Aksu
Eğitim Bilimleri

Gönderen : Prof. Dr. Canan Özgen
IAK Başkanı

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Eğitim Bilimleri Bölümü öğrencisi Orhan Sinan Çifci'nin "Transfer Sistem Faktörlerinin Eğitimin İşe Transferine Etkileri: Türkiye Cumhuriyeti Merkez Bankası (TCMB) Vakası" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

03/03/2014

Prof.Dr. Canan Özgen
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkanı
ODTÜ 06531 ANKARA

APPENDIX D

INFORMED CONSENT FORM FOR THE T-LTSI

This study has been prepared to obtain information on the factors affecting the transfer of training to the workplace by Orhan Sinan ÇİFCİ, Training Specialist at the Training Center of the Central Bank of the Republic of Turkey. This study attempts to identify scientific findings on which factors affect most the transfer of training to the workplace and while doing this, it employs the Learning Transfer System Inventory used within the scope of the questionnaire. Participation in the study is on a voluntary basis. No personally identifiable information is required in the questionnaire. All your answers will be kept confidential, to be subject to an evaluation only by the researchers, and the information obtained will be used in scientific publications.

The questionnaire comprises the Learning Transfer System Inventory consisting of 48 items and questions regarding some demographic information to be used in responding to the research questions. It takes 12 to 15 minutes to fill out the questionnaire. The questionnaire, in general, does not contain questions that might cause discomfort in participants. However, if you have discomfort due to the questions or any other reasons, you are free to not complete the questionnaire. After completion of the questionnaire, your queries related to this study will be answered.

Thank you in advance for sparing your time.

For further information on the study:

Orhan Sinan ÇİFCİ

Address: Yurt Sokak No.4 06030 Ulus-Altındağ/ANKARA

Tel: 0 (312) 507 64 22, E-mail: sinan.cifci@tcmb.gov.tr

I understand that my participation in the study is completely voluntary, and that I can withdraw from this study at any time. I give my consent that any information I provide may be used in scientific publications.

Name- Surname   Date   Signature

----/----/-----

APPENDIX E

INFORMED CONSENT FORM FOR THE SECURITY OFFICERS TRAININGS TRANSFER EVALUATION SURVEYS

This study is conducted by Orhan Sinan ÇİFCİ, Training Specialist at the Training Center of the Central Bank of the Republic of Turkey to evaluate the transfer of training to the workplace. The purpose of this study is to determine which factors included in the Learning Transfer System Inventory affect most the transfer of the learning outcomes of the Security Officers Training Program that has been selected as the subject tool for the evaluation study.

Within the context of this study, feedback will be requested from your primary supervisor at work through a questionnaire developed to find out to what extent you, as a Security Officers Training participant, have been able to transfer the learning outcomes of this training to the workplace, within the 6-month-period following the completion of the training. Questions included in the questionnaire will be utterly limited to the scope of the training that you have completed; all of the data acquired will be kept confidential, to be subject to an evaluation only by the researchers, and the information to be obtained will be used in scientific publications.

Thank you in advance for sparing your time.

For further information on the study:

Orhan Sinan ÇİFCİ
Address: Yurt Sokak No.4 06030 Ulus-Altındağ/ANKARA
Tel: 0 (312) 507 64 22, E-mail: sinan.cifci@tcmb.gov.tr

I understand that my participation in the study is completely voluntary, and that I can withdraw from this study at any time by informing the researcher. I give my consent that any information I provide may be used in scientific publications. Therefore, I write my name and contact details on the questionnaire form to participate in the evaluation study on the transfer of training to the workplace

Name- Surname   Date   Signature

                              ----/----/-----

APPENDIX F

LETTER OF PERMISSION FOR THE LTSI

LSU

College of Human Sciences & Education
School of Human Resource Education & Workforce Development

February 18, 2014

To Whom It May Concern:

The purpose of this letter is to confirm that Orhan Sinan Cifci has been granted permission to use the Learning Transfer System Inventory (LTSI) as a research instrument in completion of his doctoral dissertation in his PhD program of studies at the Graduate School of Social Sciences/Educational Sciences Department of the Middle East Technical University (METU).

Sincerely,

Dr. Reid Bates
Professor, Human Resource & Leadership Development
School of Human Resource Education & Workforce Development
Louisiana State University
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a State University
es Hall
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APPENDIX G

T-LTSI WITH SAMPLE ITEMS AND DEMOGRAPHIC VARIABLES

ÖĞRENME TRANSFERİ ENVANTERİ

Eğitim hakkındaki görüşlerinizi her bir maddenin sağında yer alan ve fikrinizi en iyi yansıtan rakamı (1, 2, 3, 4, 5) işaretleyerek belirtiniz.

1 – Hiç Katılmıyorum   2 - Katılmıyorum   3 – Ne Katılıyorum Ne Katılmıyorum
4 - Katılıyorum   5 – Tamamen Katılıyorum

Bu bölümdeki maddeleri (1 - 10) 'BU EĞİTİM PROGRAMI'nı düşünerek yanıtlayınız :

1.	Bu eğitimden sonra, öğrendiklerimi işimde denemek için sabırsızlanıyorum.	1	2	3	4	5
2.	Bu eğitimde öğrendiklerimi kullanmazsam uyarı alırım.	1	2	3	4	5
3.	Yöneticim, iş yerine döndüğümde, büyük ihtimalle bu eğitimi eleştirecektir.	1	2	3	4	5
4.	Başlamadan önce, bu eğitimden ne beklediğimi biliyordum.	1	2	3	4	5
5.	Bu eğitimin işimle bu kadar benzer olmasını çok beğendim.	1	2	3	4	5
6.	İş arkadaşlarım, bu eğitimde kazandığım yeni becerileri kullanmamı takdir edeceklerdir.	1	2	3	4	5
7.	Bu eğitimde öğrendiklerimi uygularsam büyük ihtimalle ödüllendirilirim.	1	2	3	4	5
8.	Yöneticim, bu eğitimde öğrendiklerimi işimde kullanma yollarını değerlendirmek için benimle görüşecektir.	1	2	3	4	5
9.	Bu eğitimde öğrendiklerimi işimde uygulamak için zamanım yok.	1	2	3	4	5
10.	Bu eğitimi düzenleyenler öğrendiklerimi nasıl kullanacağımı anlamışlar.	1	2	3	4	5

Lütfen diğer sayfaya geçiniz

Takip eden sayfadaki soruları (34 - 48) yanıtlayınız.
Bu maddeler yeni bir yönergeye sahiptir.
Lütfen dikkatle okuyunuz.

Bu bölümdeki maddeleri (11 - 15) 'KURUMUNUZDAKİ EĞİTİMLERİ GENEL OLARAK' düşünerek yanıtlayınız.

11. Performansımı geliştirmek için çaba gösterdiğimde başıma iyi şeyler gelir.   1   2   3   4   5

12. İş yerimdekilerden, işimi nasıl daha iyi yapacağım konusunda, pek çok tavsiye alırım.   1   2   3   4   5

13. Birlikte çalıştığım insanlar, işleri yaparken yeni yollar denemeye hevesli değildir.   1   2   3   4   5

14. Yeni öğrendiğim becerileri işe uygulama yeteneğimden şüphe etmem.   1   2   3   4   5

15. Aldığım eğitimleri ne kadar çok uygularsam işimi de o kadar iyi yaparım.   1   2   3   4   5

Lütfen aşağıdaki soruları (16 - 58) yanıtlayınız.

16. Şu anda katılmakta olduğunuz eğitim programının adı nedir?   _____

17. Bu eğitime nasıl katıldınız?
- O Kendi talebim ve yönetim oluru ile
- O Talebim olmadan yönetimin tercihi ile
- O Yasal zorunluluk nedeni ile

18. Cinsiyetiniz?
- O Kadın
- O Erkek

19. Yaşınız?
- O 25 ve altı   O 26 – 35
- O 36 – 45   O 46 – 55
- O 56 – 65   O 66 ve üstü

20. Eğitim durumunuz?
- O Lise ve altı
- O Üniversite (önlisans/lisans)
- O Lisansüstü (yüksek lisans/doktora)

21. Çalıştığınız Birim/Şube?
- O İdare Merkezi
- O Banknot Matbaası
- O Şube

22. Bankadaki çalışma süreniz?
- O 2 yıldan az   O 2 – 5
- O 6 – 10   O 11 – 15
- O 16 – 20   O 21 yıl ve üzeri

ÖZEL GÜVENLİK YENİLEME EĞİTİMİ
TRANSFER DEĞERLENDİRME ANKETİ

Sayın Yönetici;

Bu anket, Özel Güvenlik Yenileme Eğitimindeki öğrenme hedeflerinin, bu eğitime katılan biriminiz çalışanı tarafından iş ortamına ne oranda transfer edilebildiği hakkında sizlerden bilgi toplamak üzere geliştirilmiştir. Ankete verdiğiniz yanıtlar sadece araştırmacının doktora tezi için kullanılacak ve katılımcıların isimleri hiçbir yerde beyan edilmeyecektir. Bu nedenle, yanıtlarınızda samimi olmanız çalışmanın doğru sonuçlara ulaşması için önem arz etmektedir.

İlk olarak, bu eğitime katılanlardan yapmaları beklenen ve aşağıda verilen davranışları okuyunuz. İkinci olarak, **bu davranışların çalışanınız tarafından <u>ne sıklıkta yapıldığını</u>** uygun rakamı işaretleyerek belirtiniz. Görüşlerinizi belirtmek için, aşağıda verilen değerlendirme ölçeğini kullanınız. Anketi, anılan kursa katılan her bir çalışanınız için ayrı ayrı doldurulmanız gerekmektedir.

Kursiyerin Adı:

1 – Hiçbir zaman   2 – Nadiren   3 – Ara Sıra   4 – Sık Sık   5 – Her zaman

1.	Güvenlik teçhizatını eksiksiz ve usulüne uygun olarak taşır.	1	2	3	4	5
2.	Olay tutanağını eksiksiz ve anlaşılır şekilde tutar.	1	2	3	4	5
3.	Olay yeri korumada gerekli tedbirleri alır.	1	2	3	4	5
4.	Nöbet yerindeki güvenlik amaçlı cihazları (telsiz, el/kapı dedektörü vb) usulüne uygun kullanır.	1	2	3	4	5
5.	X-RAY cihazından geçen paket/kargo için ekranda görünen renklerin anlamını bilir.	1	2	3	4	5
6.	Kontrol noktalarında kendine verilen görevleri eksiksiz yapar.	1	2	3	4	5
7.	Agresif bir kişi ile karşılaştığında sakinliğini koruyarak iletişim kurar.	1	2	3	4	5
8.	Ziyaretçi/müşteriyi kurallar çerçevesinde karşılar ve yönlendirir.	1	2	3	4	5

APPENDIX I

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: ÇİFCİ, Orhan Sinan
Nationality: Turkish (TC)
Date and Place of Birth: 24 May 1976, Ankara
e-mail: sinan_cifci@yahoo.com

EDUCATION

Degree	University, Department	Graduation Year
MS	METU, I&O Psychology	2001
BS	METU, Psychology	1998

WORK EXPERIENCE

Year	Institution	Enrollment
2006-Present	CBRT, HR Directory	Training Specialists
2003 - 2006	BPB Rigips Turkey	Human Resources Manager
2002 - 2003	Gendarmerie Schools Command	Psychologist (Military Service)
1999 - 2001	Turkish Psychological Association (Turkish Armed Forces Project)	Project Assistant

PUBLICATIONS

1. Sumer, H.C., Sumer, N., Cifci, O.S., & Demirutku, K. (2000). Subay kişilik özelliklerinin ölçülmesi ve yapı geçerliği çalışması. *Türk Psikoloji Dergisi, 15* (45), 15-39.

2. Sumer, H.C., Sumer, N., Demirutku, K., & Cifci, O.S., (2001). Using a personality-oriented job analysis to identify attributes to be assessed in officer selection. *Military Psychology, 13* (3), 129-146.

3. Sumer, H.C., Sumer, N., Cifci, O.S., & Oz, B. (20-22 Eylül, 2000). Personel seçmede kullanılmak üzere işe özgü kişilik envanterinin geliştirilmesi: Yapı geçerliği çalışması. XI. Ulusal Psikoloji Kongresi, İzmir.

4. Sumer, H.C., Sumer, N., & Cifci, O.S. (October 7-9, 2000). Establishing construct and criterion related validity of a personality test battery in the Turkish Armed Forces. 42nd Annual Convention of Military Testing Association, Edinburgh.

5. Çifci, O.S. (11-13 Eylül, 2002). Hizmet kalitesi yordayıcılarının çağrı merkezi asistanları perspektifinden belirlenmesi: Hizmet kalitesi ölçeği ve hizmet kalitesi modelinin geliştirilmesi ve yapısal eşitlik modeli aracılığıyla sınanması, Poster Çalışması, XII. Ulusal Psikoloji Kongresi, ODTÜ, Ankara.

HOBBIES

3-Cushion Billiards, Cycling, Classical Guitar.

TURKISH SUMMARY

Eğitim ve personel gelişimi birçok işkolu ve şirket için gittikçe önemli bir konu haline gelmiştir. Şirketlerin faaliyetleri bilgi ağırlıklı olduğu ölçüde eğitim ve personel geliştirmeye verilen emekler, hem çalışanların öğrenme ihtiyaçlarının karşılanmasında hem de şirketlerin stratejik hedeflerine ulaşılmasında oldukça önemli rol oynamaktadır (Harrison & Kessels, 2004). Bu doğrultuda, günümüzün rekabetçi iş dünyasında şirketler eğitim ve gelişim faaliyetlerine ayırdıkları bütçeleri artırma eğilimindedirler. Amerika Birleşik Devletleri'ndeki şirketlerin yıllık eğitim ve personel gelişimi faaliyetleri için yaptıkları harcamalarının 100 milyar doların üzerinde olduğu belirtilmektedir (Hutchins, 2009).

Diğer tarafta, eğitim ve personel gelişimi faaliyetlerine harcanan devasa rakamlara rağmen şirket yöneticileri eğitimlerin verimliliği ve geri dönüşümü konusunda rahat görünmemektedirler. Kurumsal raporlar, eğitimden 3 ay sonra ölçüldüğünde, eğitimde kazanılan bilgi ve becerilerin yalnızca % 40'nın korunabildiğini göstermektedir (Hutchins, 2009). Ek olarak, eğitim katılımcılarının % 62'sinin öğrendikleri bilgi ve becerileri eğitimden hemen sonra uygulayabilmektedirler. Her nasılsa, bu oran eğitimden 6 ay sonra % 44'e, bir yıl sonra da % 34'e kadar düşmektedir (Saks & Belcourt, 2006). Eğitim ve personel gelişimine yapılan yatırımların bu denli kötü sonuçlar doğurması, eğitimde öğrenilen bilgi ve becerilerin işe aktarımı konusunun insan kaynakları gelişimi alanındaki merkezi yerini koruyacağına işaret etmektedir (Burke & Hutchins, 2007).

Hizmet-içi eğitim programları hem çalışan hem de örgüt gelişimi için oldukça önemlidir, ancak bu programlar bilgi ve beceri gelişimini sağladığı ve edinilen bu bilgi ve beceriler işe aktarıldığı zaman gerçekten etkili olabilmektedirler (Goldstein & Ford, 2002). Bu noktada, eğitim ve personel gelişimi uzmanları için

bir eğitim programını, bu eğitimden edinilen bilgi ve becerilerin işe aktarımı destekleyecek şekilde tasarlamak, sunmak ve değerlendirmek kritik konular olarak ortaya çıkmaktadır.

Eğitimin işe aktarılması, sadece eğitim kapsamında öğrenilen bilgi ve becerilerden ibaret olmayıp, edinilen bu bilgilerin önce genelleme yapılarak iş yerinde uygulanması ve ardından belli bir süre zarfında uygulanmaya devam edilmesidir (Baldwin & Ford, 1988). Araştırmacılar, eğitimin işe transferini etkileyen faktörleri 3 temel başlık altında toplamaktadırlar: (1) katılımcı/öğrenen özellikleri, (2) eğitim tasarımı ve uygulama, (3) iş ortamına özgü faktörler.

Bilişsel yetenek, gelişime açıklık, motivasyona ilişkin değişkenler (öğrenmeye duyulan motivasyon, işe aktarmaya duyulan motivasyon, içsel-dışsal motivasyon), dışa dönüklük ve algılanan işe yararlık durumu katılımcı özellikleri başlığı altında toplanmaktadır (Burke & Hutchins, 2007). Eğitim tasarımı ve uygulamaya ilişkin değişkenler ise ihtiyaç analizi, öğrenme hedefleri, içeriğin işle ilgili olması, aktif öğrenme, davranışsal modelleme olarak belirtilebilir (Burke & Hutchins, 2007). Son olarak, yönetici desteği, iş arkadaşı desteği, olumlu kişisel sonuçlar, olumsuz kişisel sonuçlar, değişime direnç, performans koçluğu gibi değişkenler iş ortamına özgü faktörler arasında gösterilmektedir (Holton, Bates, & Ruona, 2000).

Holton, Bates ve Ruona (2000), iş ortamına özgü faktörleri transfer iklimi olarak ifade etmiş, İnsan Kaynakları Geliştirme Araştırma ve Değerlendirme Modelinden (Holton, 1996) faydalanmak suretiyle transfer sistem modeli kavramını geliştirmişlerdir. Holton ve ark. (2000) bu yaklaşımı Öğrenme Transferi Sistem Envanterinin, İngilizce adı ile 'Learning Transfer System Inventory (LTSI)' gelişmesini sağlamıştır. Yazarlara göre bu kavramsal çerçeve, transfer sisteminin bütününü kapsamına almakta ve insan, eğitim ve kurum başlıkları altındaki bütün faktörleri içermektedir.

Katılımcı/öğrenen özellikleri psikoloji yazınında oldukça köklü kavramlardan biri olarak görünmektedir (Sackett, Gruys, & Ellingson, 1988).

Benzer biçimde, bu değişkenlerin eğitimin transferi/işe aktarımı yazınında oldukça sık biçimde ele alındığı görülmektedir (Baldwin & Ford, 1988).

Tziner, Fisher, Senior ve Weisberg (2007) bir ağır sanayi firmasında çalışan 130 işçinin katılımıyla düzenledikleri çalışmada, öz-yeterlik (self-efficacy) ve öğrenme motivasyonu değişkenlerinin eğitimden sonra yapılan bilgi testi sonuçlarını anlamlı biçimde yordadığını tespit etmişlerdir. Öğrenme motivasyonu, öğrenme hedefi yönelimli olma ve performans hedefi yönelimli olma faktörlerinin ise, eğitimden üç hafta sonra katılımcıların yöneticilerinden alınan performans puanlarını anlamlı biçimde yordadığı görülmüştür.

Chiaburu ve Tekleab (2005) eğitim motivasyonu ve performans hedefi yönelimli olma değişkenlerinin, eğitimden hemen sonraki öğrenme, eğitimin transferi, transferin işe genellenmesi ve transferin sürekliliğinin sağlanması üzerindeki etkilerini incelemişlerdir. Çoklu Bağlanım Analizi (multiple regression) sonuçları eğitim motivasyonun sadece transferin sürekliliğinin sağlanması üzerinde anlamlı bir yordayıcı etkisi olduğunu göstermiştir.

Eğitim tasarımı ve eğitim uygulaması faktörleri üzerinde yapılan çalışmalar, bu başlık altında toplanan değişkenlerin eğitimin işe transferi üzerindeki etkilerini, genellikle bu değişkenlerin öğrenmeye yaptığı etkiler bakımından incelemektedir (Burke & Hutchins, 2007). İhtiyaç analizi, öğrenme hedefleri, içeriğin işle ilgili olması, aktif öğrenme, davranışsal modelleme bu başlık altında ele alınan değişkenlerden bazılarıdır.

İçeriğin işle ilgili olması değişkeni, Yamnill & McLean (2005) tarafından Tayland vatandaşı yöneticilerin katıldığı bir çalışmada, eğitimin işe transferini etkileyen temel faktör olarak ortaya çıkmıştır. Tziner, Haccoun ve Kadish (1991) gerilemeyi engelleme (relapse prevention) kavramından, katılımcıların öğrenilen becerilerin aşınması konusundaki farkındalıklarını geliştirmek üzere faydalanmışlardır. Çalışma kapsamında kullandıkları eğitimin sonuna iki saat süreli bir gerilemeyi engelleme modülü koyan araştırmacılar, bu modülün iç denetim odağına sahip ve destekleyici bir iş ortamında çalışan katılımcılar üzerinde etkisini artırdığını rapor etmişlerdir.

Rouiller ve Goldstein (1993) bireysel faktörlerin ve eğitime özgü değişkenlerin eğitimin işe transferi yazınını hakimiyet altına aldığını ve kurumsal transfer iklimi kavramının ve bu kavram kapsamındaki faktörlerin eğitimin işe transfer edilebilirliği üzerindeki etkilerinin ihmal edildiğini belirtmişlerdir. Yazarlar, durumsal ipuçları (situational cues) ve sonuçlar (consequences) adları ile iki transfer iklimi boyutu belirlemiş; hedef ipuçları, sosyal ipuçları, görev ipuçları ve kendilik kontrolü ipuçlarını durumsal ipuçları boyutu altında geribildirim, olumsuz geribildirim, cezalandırma ve geribildirim vermeme sonuçlarını ise sonuçlar boyutu altında tanımlamışlardır. Yazarlar, geniş bir restoran yelpazesine sahip bir şirkette çalışan yönetici adayları ile yaptıkları çalışmada öğrenmenin % 8 ve transfer ikliminin % 46 oranlarıyla transfer davranışları yordadığını rapor etmişlerdir. Araştırmacılar bu veriye dayanarak olumlu transfer ikliminin öğrenmeden öte bir önemde transfer davranışlarıyla ilgili olduğu sonucuna varmışlardır.

Rouiller ve Goldstein (1993) makalesinden yola çıkarak, Holton, Bates ve Ruona (2000) öğrenme transferi sistemi kavramını tanıtmışlardır. Yazarlar Öğrenme Transferi Sistem Envanteri (ÖTSE) adı ile eğitime özgü (training-specific) ve eğitim geneline ilişkin faktörler (training-general) olmak üzere iki boyutlu bir ölçme aracı geliştirmişlerdir. Katılımcı hazır bulunuşluğu, transfer motivasyonu, olumlu kişisel sonuçlar, olumsuz kişisel sonuçlar, transfer için kişisel kapasite, iş arkadaşı desteği, yönetici desteği, yönetici engellemeleri, algılanan içerik geçerliği, transfer için eğitim tasarımı ile öğrenmeyi kullanmak için fırsatlar faktörleri eğitime özgü boyut altında; transfer çabası-performans beklentileri, performans-sonuçlar beklentisi, değişime direnç, performans öz-yeterliği ve performans koçluğu faktörleri ise genel faktörler boyutu altında toplanmıştır. Holton ve ark. (2000) çeşitli şirketlerden ve farklı eğitim programlarına katılan toplam 1.616 kişiden ÖTSE'ye ilişkin veri toplamışlardır. İki boyut üzerinde ayrı ayrı yapılan açımlayıcı faktör analizi sonuçları ÖTSE'nin eğitime özgü ve genel faktörler boyutları altında yer alan faktör yapısını doğrulamıştır.

Gerek orijinal dilinde (İngilizce) gerekse adaptasyonu yapılan diğer dillerde ÖGSE kullanılarak yapılan çalışmalar, envanterin faktör yapısının ve envanter kapsamında yer alan alt ölçeklerin iç tutarlık analizlerinin yeterli derecede güvenli

olduğunu ortaya koymaktadır (Bates, Holton & Hatala, 2012; Holton, Bates & Bookter, 2007; Yamkovenko, Holton & Bates, 2007; Khasawneh, Bates, & Holton, 2006; Chen, Holton & Bates, 2005; Holton, Bates & Ruona, 2000; Seyler, Holton, Bates, Burnett, & Carvalho, 1998).

Kapsam genişliği ve psikometrik kalitesine ilişkin doyurucu veriler ışığında, ÖTSE'nin bu çalışmada kullanılmak üzere uygun olduğu değerlendirilmiştir. İlkin, ÖTSE'nin bu çalışma kapsamında kullanılması için envanterin geliştiricilerinden izin alınmış, daha sonra Öğrenme Transferi Sistemi Envanteri (ÖTSE) Türkçe'ye uyarlanmış ve ÖTSE'nin faktör yapısı açımlayıcı faktör analizi yöntemi ile incelenmiştir.

Bu çalışma Türkiye Cumhuriyet Merkez Bankasında (TCMB) eğitimin işe aktarımını etkileyen faktörleri transfer sistemi çerçevesi içinde araştırma amacıyla düzenlenmiştir. Araştırma kapsamında, cinsiyet, öğrenim düzeyi ve çalışma kıdemi katılımcı/öğrenen özellikleri, çalışılan birim, eğitimin türü ve eğitime katılım biçimi ise ortama ilişkin değişkenler olarak, ÖTSE'nin faktörleri üzerinde katılımcıların algılarını edinmek üzere, ele alınmıştır. Ek olarak, güvenlik görevlileri eğitim programı katılımcılarının eğitimi işe aktarmaya ilişkin puanları, ÖTSE'deki iş ortamı faktörlerinin bahse konu transfer puanlarını daha iyi açıklayıp açıklamadığını araştırmak için kullanılmıştır.

Bu çalışma kapsamında aşağıda ifade edilen üç adet araştırma sorusuna yanıt aranmıştır:

(1) Katılımcıların ÖTSE kapsamında yer alan faktörler üzerindeki katılımcı algıları, katılımcıların kendilerine özgü değişkenler olan cinsiyet, eğitim seviyesi ve iş deneyimi süresine göre farklılık gösteriyor mu?

(2) Katılımcıların ÖTSE kapsamında yer alan faktörler üzerindeki katılımcı algıları, durumsal/örgütsel değişkenler olan katılımcıların çalıştıkları birim, eğitim türü ve eğitime katılım biçimine göre farklılık gösteriyor mu?

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(3) ÖTSE kapsamında yer alan iş ortamına ilişkin faktörler, güvenlik görelileri eğitimi katılımcılarının eğitimin işe transfer puanlarını, diğer faktörlere oranla (katılımcı/öğrenen özellikleri, motivasyon, yetenek/yetki faktörleri) ne kadar iyi yorduyor?

Araştırmaya katılan insanların haklarının riske edilip edilmediğine ilişkin Orta Doğu Teknik Üniversitesi Etik Kuruluna araştırma kapsamında kullanılacak ölçeklerle birlikte başvuru yapılmış ve başvuru uygun olarak değerlendirilmiştir (ODTÜ Etik Kurul izin mektubu için Ek C'yi görünüz).

Bu araştırma kapsamında ÖTSE ve transfer değerlendirme çalışması için araştırmacı tarafından geliştirilen Güvenlik Görevlileri Eğitimi Transfer Değerlendirme Ölçeği (GETD) ile iki ayrı ölçme aracı ile iki farklı zamanda veri toplanmıştır. İlk olarak, ÖTSE'ye ilişkin veriler, TCMB'de 2013 ve 2014 yıllarında düzenlenen çeşitli hizmet-içi eğitim programlarına katılan toplam 609 kişiden elde edilmiştir. Toplanan veriler, ÖTSE'nin Türkçe versiyonunun faktör yapısı bakımından orijinal ölçek ile uyumlu olup olmadığını görmek için açımlayıcı faktör analizine (AFA) tabi tutulmuştur.

AFA sonuçları eğitime özgü boyut kapsamında yer alan 11 alt ölçeğin 10 tanesinin orijinal ölçekle paralel biçimde TCMB vakasında ortaya çıktığını göstermektedir. On faktörlü çözüm, toplam varyansın % 73.22'sini açıklamıştır. Bu boyut altında yer alan alt ölçeklerin varyans açıklama oranları ve ölçeklerin iç tutarlık katsayıları şu şekilde olmuştur: (1) transfer motivasyonu (% 26.78 / α =.86), (2) olumsuz kişisel sonuçlar (% 9.92 / α =.73), (3) yönetici engellemeleri (% 7.98 / α =.82), (4) katılımcı hazır bulunuşluğu (% 5.84 / α =.81), algınan içerik geçerliği (% 4.69 / α =.86), iş arkadaşı desteği (% 4.45 / α =.83), olumlu kişisel sonuçlar (% 3.99 / α =.76), yönetici desteği (% 3.60 / α =.84), transfer için kişisel kapasite (% 3.39 / α =.60) ve transfer için eğitim tasarımı (% 2.56 / α =.87).

Eğitim geneline ilişkin faktörler için yapılan faktör analizi sonucunda orijinal ölçekte yer alan beş alt ölçeğin hepsi de TCMB vakasında ortaya çıkmıştır. 5 faktörlü sonuç toplam varyansın % 69.71'ini açıklamış ve anlamlı bir faktör

yapısının oluştuğu gözlenmiştir. Bu boyut altında yer alan alt ölçeklerin varyans açıklama oranları ve ölçeklerin iç tutarlık katsayıları şu şekilde olmuştur: (1) performans-sonuçlar beklentisi (% 27.73 / α =.72)   (2) performans koçluğu (% 14.13 / α =.81), (3) değişime direnç (% 12.73 / α =.79) , (4) performans öz-yeterliği (% 8.81 / α =.76), (5) transfer çabası-performans beklentileri (% 6.30 / α =.75).

Araştırma kapsamında kullanılan ikinci ölçek olan GETD, güvenlik görevlileri eğitim programı katılımcılarının transfer puanlarını toplamak üzere, araştırmacı tarafından geliştirilmiştir. Ölçek, eğitimin işe transferine ilişkin olarak, toplam sekiz adet madde barındırmaktadır. Bahse konu eğitime katılan 101 güvenlik görevlisinin birinci derece yöneticilerinden eğitimin tamamlanmasından 3 ay sonra GETD aracılığı ile eğitimin işe transferi verisi toplanmıştır. Güvenlik personelinin görev yaptığı Koruma ve Güvenlik Departmanında 3 yönetim kademesi olduğu ve söz konusu eğitime her üç yönetim kademesinden de katılım sağlandığı için, eğitime katılan güvenlik görevlilerinin birinci derece yöneticileri birbirinden farklıdır. Bu anlamda, 84 güvenlik memuru koruma ve güvenlik grup şefleri tarafından, 12 koruma ve güvenlik grup şefi koruma ve güvenlik amir yardımcısı tarafından ve son olarak da 5 koruma ve güvenlik amir yardımcısı güvenlik amiri tarafından değerlendirilmiştir.

Güvenlik personelinin transfer puanlarının değerlendirilmesinde kesintisiz 3'lü vardiya sisteminin varlığı da dikkate alınmıştır. Güvenlik personeli bu 3 vardiya sistemi içinde dönüşümlü görev yaptığı için, mevcut bütün güvenlik yöneticilerinden eğitim katılımcılarına yönelik olarak transfer verisi toplanmıştır. Transfer ölçeklerini dolduran yöneticilerden 4 tanesine ait iç tutarlık analizi sonuçları Nunnaly ve Bernstein (1994) tarafından önerilen Cronbach alfa değeri olan .70'in altında olduğu için bu yöneticilerin değerlendirmeleri kapsam dışında bırakılmıştır. Geriye kalan 9 değerlendiricinin anketlerinden elde edilen iç tutarlık katsayıları ortalaması .88 olduğundan geliştirilen anketin güvenilir olduğu ve bu ölçekten elde edilen transfer puanlarının ileriki analizlerde veri olarak alınabileceği değerlendirilmiştir.

Araştırma soruları için analizlere geçilmeden önce toplanan veriler üzerinde veri girişinin kontrolü ve aykırı değerlendirmelerin analizleri yapılmıştır. Bu kapsamda birinci ve ikinci araştırma soruları için kullanılacak Çok Değişkenli Varyans Analizi öncesinde aykırı uçta yanıt veren 5 katılımcının değerlendirmeleri kapsam dışına çıkarılmış, analizler toplam 601 kişiden toplanan veriler üzerinden yapılmıştır. Temel analizlere geçilmeden önce Çok Değişkenli Varyans Analizinin sayıltıları gözden geçirilmiştir.

Birinci araştırma sorusu, 'katılımcıların ÖTSE kapsamında yer alan faktörler üzerindeki katılımcı algıları, katılımcıların kendilerine özgü değişkenler olan cinsiyet, eğitim seviyesi ve iş deneyimi süresine göre farklılık gösteriyor mu?' şeklinde ifade edilmişti. Bu araştırma sorusunun yanıtlanması için Çok Değişkenli Varyans Analizi kullanılmıştır. Faktör analizi sonucunda derlenen 15 ÖTSE faktörü bağımlı değişkenler olarak, diğer tarafta cinsiyet, eğitim seviyesi, iş deneyimi süresi ise bağımsız değişkenler olarak ele alınmıştır. Her bir bağımsız değişken için ayrı ayrı analizler yapılmıştır. Sonuçlar, her bir bağımsız değişken için aşağıda sırasıyla verilmiştir.

Sonuçlar, cinsiyete göre ÖTSE faktörleri üzerinde kadınlar (n=203) ve erkekler (n=398) arasında manidar farklar olduğunu ortaya koymuştur ($V = .09$, F $(15, 585) = 4.05$, $p < .001$). Olumsuz kişisel sonuçlar ile performans koçluğu faktörleri anlamlı fark üreten faktörler olup her iki faktörde de kadınların ortalamaları erkeklere göre düşük durumdadır.

Eğitim seviyesi bakımından katılımcılar 3 kategori altında toplanmışlardı: (1) lise ve altı eğitim derecesi (n=63), (2) ön-lisans ve lisans derecesi (n=355), ve (3) lisansüstü derece (n=183). Analiz sonuçları eğitim seviyesine göre katılımcıların algılarının anlamlı düzeyde farklılık gösterdiğini göstermektedir ($V = .18$, F $(30, 1.170) = 3.83$, $p < .001$). Olumlu kişisel sonuçlar, olumsuz kişisel sonuçlar, yönetici desteği, yönetici engellemeleri, performans-sonuçlar beklentileri ile performans koçluğu faktörleri anlamlı farklılık gösteren faktörler olarak tespit edilmişlerdir. Bu faktörler üzerinde, farkın hangi gruplar arasında olduğunu tespit edebilmek için, tek değişkenli varyans analizi yapılmıştır. Lise mezunlarının olumlu kişisel sonuçlar ile

performans-sonuçlar beklentileri faktörlerinde üniversite mezunlarından, olumsuz kişisel sonuçlar, yönetici engellemeleri, performans-sonuçlar beklentileri, performans koçluğu faktörlerinde ise lisansüstü derece sahiplerinden daha yüksek ortalamalara sahip oldukları görülmüştür. Üniversite mezunlarının ise olumsuz kişisel sonuçlar ile performans koçluğu faktörlerinde lisansüstü derece sahiplerine göre daha yüksek ortalamalara sahip olduğu belirlenmiştir.

Katılımcıların iş deneyimi süresi de araştırma sorusu kapsamında ele alınmıştır. Anlamlı bir kıyas yapabilmek ve kıyas yapılan gruplardaki kişi sayısını birbirine yakın tutabilmek amacıyla kıdem süreleri üç kategori altında toplanmıştır: (a) 5 yıl ve altı (n= 146), (b) 6-15 yıl arası (n= 248), (c) 16 yıl ve üzeri (n= 208). Çoklu Varyans Analizi sonuçlarına göre katılımcıların iş deneyimi süresine anlamlı fark olduğu tespit edilmiştir (V = .28, F (30, 1.168) = 6.41, p < .001). Etki büyüklüğü hesabına göre toplam varyansın % 14'ü açıklanmıştır. Bu değer Cohen'e (1988) göre geniş bir etki büyüklüğüne sahiptir. Takip eden Tek Değişkenli Varyans Analizi sonuçlarına göre katılımcı hazır bulunuşluğu, transfer motivasyonu, algılanan içerik geçerliği, transfer için eğitim tasarımı, olumsuz kişisel sonuçlar, yönetici desteği, performans öz-yeterliği, performans koçluğu faktörleri katılımcıların iş deneyimi sürelerine göre farklılık göstermiştir. Beş yıl ve altı sürelerde iş deneyimi olanlar, transfer motivasyonu, algılanan içerik geçerliği ile transfer için eğitim tasarımı faktörlerini diğer kıdem gruplarında çalışanlara göre daha düşük fakat performans koçluğu boyutunu ise diğer gruplara oranla daha yüksek ortalamalar ile yanıtlamışlardır. Dahası, 16 yıl ve süresi kıdeme sahip çalışanlar olumsuz kişisel sonuçlar ve performans öz-yeterliği faktörlerini 5 yıl ve altı kıdeme sahip çalışanlara göre daha yüksek ortamalar vererek yanıtlamışlardır.

'ÖTSE kapsamında yer alan faktörler üzerindeki katılımcı algıları, durumsal/örgütsel değişkenler olan katılımcıların çalıştıkları birim, eğitim türü ve eğitime katılım biçimine göre farklılık gösteriyor mu? ikinci araştırma sorusu olarak yer almıştı. Bu araştırma sorusu da, ilk araştırma sorusunda olduğu gibi, Çok Değişkenli Varyans Analizi kullanılarak yanıtlanmıştır. ÖTSE'nin 15 transfer

faktörü bağımlı değişken olarak, çalışılan birim, eğitim türü ve eğitime katılım tipi de bağımsız değişkenler olarak kullanılmıştır.

Katılımcılar, İdare Merkezi birimleri (n=272), Banknot Matbaası (n=53) ve TCMB Şubeleri (n=276) olarak üç ayrı birim altında çalışmaktadırlar. Banknot Matbaası'nda çalışanların sayısı diğer gruplardaki çalışan sayılarından oldukça düşük olmasına rağmen analizler 3 farklı birim tipi korunmak suretiyle yapılmıştır. Katılımcıların çalıştıkları birim üzerinde yapılan analiz sonuçları ÖTSE faktörlerinde anlamlı farkların olduğunu belirtmektedir (V = .17, F (30, 1.170) = 3.061, p < .001). Takip eden analizler, katılımcı hazır bulunuşluğu, olumsuz kişisel sonuçlar, iş arkadaşı desteği, yönetici desteği, değişime direnç faktörlerinin katılımcıların iş deneyimi süresi bakımından anlamlı farklar gösterdiğini işaret etmektedir. Gruplar arası farklar incelendiğinde, İdare Merkezi birimlerinde çalışanların iş arkadaşı desteği, yönetici desteği, değişime direnç, olumsuz kişisel sonuçlar faktörlerini Şubelerde çalışanlara kıyasla daha düşük ortalamalar ile yanıtladığı görülmüştür.

Alınan eğitimin türü bağımsız değişken, ÖTSE faktörleri de bağımlı değişkenler olarak Çok Değişkenli Varyans Analizi yapılmıştır. Alınan eğitimin türü üç kategori altında toplanmıştır: (1) mesleki-teknik eğitimler (n=417), (2) bilgisayar (yazılım) eğitimleri, (3) kişisel gelişim eğitimleri (n=84). Sonuçlar alınan eğitimin türüne göre ÖTSE faktör ortalamalarının anlamlı olarak farklılaştığını göstermektedir (V = .28, F (30, 1.134) = 6.25, p < .001). Toplam varyansın % 14'ünün açıklanması etki büyüklüğünün geniş olduğunu göstermektedir.

Takip analizlerinde katılımcı hazır bulunuşluğu, transfer için eğitim tasarımı, olumlu kişisel sonuçlar, olumsuz kişisel sonuçlar, yönetici desteği, yönetici engellemeleri, performans-sonuç beklentileri, performans koçluğu faktörlerinde alınan eğitim türüne göre anlamlı farklar bulunmuştur. Gruplar arası kıyaslamalarda, kişisel gelişim eğitimlerine katılanların mesleki teknik eğitimlere katılanlara oranla transfer için eğitim tasarımı faktörüne daha yüksek ortalamalar verdiği, olumlu kişisel sonuçlar, performans-sonuç beklentileri ve performans koçluğu faktörlerine ise bilgisayar eğitimlerine katılanlara kıyasla yine daha yüksek ortalama puanlar

verdiği görülmüştür. İlave olarak, mesleki-teknik eğitimlere katılanların yönetici desteği, performans koçluğu faktörlerini bilgisayar eğitimi katılımcılarına göre daha yüksek puanlar vererek değerlendirdiği saptanmıştır. Mesleki-teknik eğitim katılımcılarının, kişisel gelişim eğitimi katılımcılarına kıyasla katılımcı hazır bulunuşluğu ile olumsuz kişisel sonuçlar faktörlerine daha yüksek, performans koçluğu faktörüne ise daha düşük ortalamalar verdiği görülmüştür.

Duruma özgü/örgütsel değişkenlerin sonuncusu olan eğitime katılma biçimi üç farklı şekilde tanımlanmıştır: (1) gönüllü katılım ($n=227$), (2) yönetim tarafından seçilme ($n=249$), (3) zorunlu katılım ($n=123$). Gönüllü katılım, eğitim katılımcılarının programa katılım talebi olduğu ve yöneticilerinin bu talebi onayladığı, yönetim tarafından seçilme, katılımcıların önceden programa katılma talepleri olmadığı halde yönetim tarafından belirlenerek programa gönderilme, zorunlu katılım ise yasal mevzuat çerçevesinde katılım belli çalışanların zorunlu katılım sağlamaları gereken programları işaret etmektedir.

Yapılan Çok Değişkenli Varyans Analizi sonucu istatistiksel olarak manidardır ($V = .25$, $F (30, 1.168) = 5.45$, $p < .001$). % 12 oranı ile açıklanan toplam varyans oranı etki büyüklüğünün orta seviyenin üzerinde olduğuna işaret etmektedir. Takip eden Tek Değişkenli Varyans Analizleri sonuçlarına göre katılımcı hazır bulunuşluğu, algılanan içerik geçerliği, olumsuz kişisel sonuçlar, performans öz-yeterliği, transfer çabası-performans beklentileri ile performans koçluğu faktörlerinin eğitime katılım tipine göre anlamlı farklılıklar göstermektedir. Gruplar arası farklar incelendiğinde, zorunlu eğitime katılanların, katılımcı hazır bulunuşluğu, algılanan içerik geçerliği, olumsuz kişisel sonuçlar, performans öz-yeterliği, transfer çabası-performans beklentileri, performans koçluğu boyutlarında yönetim tarafında seçilen katılımcılardan; olumsuz kişisel sonuçlar ile performans koçluğu boyutlarında ise gönüllü katılım sağlayanlardan daha yüksek ortalamalara sahip oldukları görülmektedir. İlave olarak, gönüllü katılımcılar, yönetim tarafından seçilen katılımcılara göre katılımcı hazır bulunuşluğu faktörüne daha yüksek ortalamalar vermişlerdir.

'ÖTSE kapsamında yer alan iş ortamına ilişkin faktörler, güvenlik görelileri eğitimi katılımcılarının eğitimin işe transfer puanlarını, diğer faktörlere oranla (katılımcı/öğrenen özellikleri, motivasyon, yetenek/yetki faktörleri) ne kadar iyi yorduyor? Sorusu bu çalışmanın üçüncü araştırma sorusu olarak ifade edilmişti. Bu soruyu yanıtlamak üzere Çoklu Bağlanım Analizi kullanılmıştır. Güvenlik görevlileri eğitim programı katılımcılarının transfer puanları bağımlı değişken, ÖTSE faktörleri ise bağımsız değişkenler olarak kullanılmıştır. ÖTSE iki ayrı boyuttan oluştuğu için bağlanım analizi sıralı olarak, önce eğitime özgü faktörler daha sonra eğitim geneline ilişkin faktörler analize sokulmuştur. Bu sıralamada, iş ortamına ilişkin toplam 7 faktörden 5 tanesinin eğitime özgü faktörler boyutu altında yer alması, rol oynamıştır.

Analizlerden önce, betimleyici istatistiklerle birlikte, eğitim transfer puanı ile ÖTSE faktörlerinin ikili korelasyon değerleri de elde edilmiştir. İkili korelasyonlar incelendiğinde, 15 ÖTSE faktöründen sadece olumsuz kişisel sonuçlar faktörünün transfer puanı ile anlamlı korelasyon gösterdiği, transfer için eğitim tasarımı ve transfer motivasyonu faktörlerinin ise anlamlı korelasyon düzeyine yaklaştığı görülmüştür.

Eğitime özgü faktörler birinci basmakta, eğitime ilişkin genel faktörler ise ikinci basamakta analize sokulmuştur. İkinci basamak sonrasında, bütün bağımsız değişkenler analizdeyken, bütün modelin anlamlı olduğu görülmüştür ($R = .46$, $\underline{F}$ (15, 79) = 1.84, p < .05). Birinci basamak sonunda, eğitime özgü faktörler analizdeyken, anlamlı bir R^2 değeri elde edilmiştir ($R^2 = .21$ F (10, 84) = 2.24, $p < .05$). İkinci basamak sonunda, eğitimle ilgili genel faktörler de analize sokulduktan sonra alınan sonuçlar R^2 artışının anlamlı olmadığını göstermektedir ($R^2 = .26$, $\underline{F}_{change}$ (5, 79) = 1.04, $p > .05$).

Bütün model, eğitim katılımcılarının transfer puanlarındaki varyansın, R^2 değeri bakımından, toplam % 26'sını açıklamıştır. Modeldeki katsayılar ve bağımsız değişkenlerin varyans açıklamadaki bireysel katkıları incelendiğinde, eğitime özgü faktörler içinde, transfer motivasyonu, transfer için eğitim tasarımı, olumsuz kişisel

sonuçlar, yönetici desteği faktörlerinin sırasıyla % 7.8, % 7.7, % 4, % 4.1 oranlarıyla açıklanan toplam varyansa anlamlı bireysel katkılar yaptıkları görülmüştür.

İkinci basamakta analize sokulan eğitimle ilgili genel faktörler, R^2 artışına anlamlı olarak katı yapmasa da, bütün model anlamlı olduğundan, değişime direnç faktörünün % 4.4 oranıyla manidar biçimde açıklamış olduğu bireysel varyansın da değerlendirmeye alınması gerekmektedir.

Anlamlı katkıda bulunan bağımsız değişkenler içinde olumsuz kişisel sonuçlar, yönetici desteği ve değişime direnç faktörleri, iş ortamına özgü faktörler olarak transfer motivasyonu ve transfer için eğitim tasarımı faktörlerinden daha fazla varyans açıklamışlardır.

Birinci ve ikinci araştırma soruları katılımcı özellikleri ve durumsal değişkenler bakımından araştırma kapsamında belirtilen değişkenlerden elde edilen gruplar arasındaki farklarını ele almıştır. Üçüncü araştırma sorusu ise çalışmaya konu edilen eğitim katılımcılarının transfer puanlarının ÖTSE kapsamında yer alan faktörlerin hangileri tarafından yordandığına yanıt aramıştır. İlerleyen bölümlerde her iki araştırma odağı için elde edilen sonuçlar tartışılacaktır.

Eğitim katılımcılarının transfer sistemi faktörleri üzerindeki algıları değişkenlik gösteriyor ise, bu değişkenliklerin eğitim programlarının tasarımı ve uygulaması aşamalarında dikkate alınması halinde eğitimin işe transferi kolaylaştıracağı çok açıktır. Bu çalışma, katılımcı/öğrenen özelliklerinin, cinsiyet, eğitim düzeyi, iş deneyimi süresi değişkenleri açısından, insanların transfer sistemi algıları üzerinde farklar yarattığını göstermiştir.

Sonuçlar, kadın çalışanların, eğitimde öğrendikleri bilgi ve becerileri iş ortamına yansıtmadıklarında, erkek çalışanlara oranla iş ortamında daha düşük düzeylerde cezalandırıldıklarını ya da kınandıklarını göstermektedir. Bununla birlikte, formal ya da informal yollar üzerinden eğitimde öğrendiklerini işe transfer etme konusunda aldıkları geribildirim, diğer bir ifadeyle performans koçluğu da

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daha düşük düzeylerdedir. Bu anlamda, kadınların iş ortamlarından, eğitimin işe transferi konusunda olumlu ya da olumsuz yönde erkeklere oranla daha az geribildirim aldıklarını göstermektedir.

Eğitim düzeyine ilişkin grup farkları incelendiğinde çok belirgin bir örüntü ortaya çıkmaktadır. Düşük eğitim düzeyine sahip çalışanların, eğitimden öğrendiklerini işe aktardıklarında, diğer eğitim gruplarındaki katılımcılara göre daha yüksek sonuç beklentilerine sahip oldukları ve daha çok olumlu kişisel sonuçlar bekledikleri görülmüştür. Dahası, çalışma ortamından transfer sürecine ilişkin olarak daha fazla performans koçluğu aldıklarını düşünmektedirler. Bu sonuçlar, düşük eğitim grubunda çalışanların, eğitim programlarını bir tür gelişme fırsatı ve örgüt tarafından ödüllendirme fırsatı olarak gördüklerini belirtmektedir. Bu örüntü, Khasawneh (2006) çalışmasının sonuçlarıyla paralellik göstermektedir.

İş deneyimi süresine ilişkin sonuçlar, deneyimi düşük personelin katıldıkları eğitim programlarını, işleriyle daha az ilgili olarak değerlendirmekte, eğitimde kullanılan yöntem ve tekniklerin iş süreçlerini yansıtmadığını düşünmektedirler. Ek olarak, eğitimden öğrendiklerini işe transfer ederken karşılaşacakları zorlukların üstesinden gelme konusundaki öz-güvenleri daha düşük düzeydedir. Bununla birlikte, iş yerinden transfer performanslarına ilişkin olarak daha çok uyaran aldıklarını belirtmektedirler. Kıdemi az olan çalışanların transfer algılarındaki bu karamsar tablo, kıdem süresindeki artışla birlikte daha pozitif bir görünüme kavuşmaktadır.

Katılımcıların öğrenme transferi sistemine ilişkin algılarında durumsal ya da örgütsel değişkenler bakımından da farklar olduğu görülmüştür. Bu anlamda, çalışılan birimin, özellikle İdare Merkezi birimlerinde ve Şubelerde çalışanlar kıyaslandığında, net farklılıklar içerdiği tespit edilmiştir. İdare Merkezi birimlerinde çalışanlarla kıyaslandıklarında, Şube çalışanları iş arkadaşları ve yöneticilerinden, öğrendiklerini işe aktarma konusunda daha yüksek destek algılamaktadırlar. Benzer biçimde eğitimden öğrendiklerini işe aktarmadıklarında iş ortamından daha yüksek düzeyde uyarı ve kınama görmektedirler.

İdare Merkezi birimleri ve Şubeler arasındaki algı farklarının hepsinin ÖTSE'nin iş ortamı faktörleriyle ilişkilidir. İdare Merkezi birimleri ile karşılaştırıldığında Şubelerde çalışanların görece daha kapalı bir kurumsal iklime sahip olukları, daha tekdüze iş ve işlemlerle ilgilendikleri, TCMB'nin diğer Şube ve birimleriyle yerleşim ili farkı nedeniyle daha az iletişim içinde oldukları düşünülmektedir. Dahası Şubelerin görece daha az kaynaklar ile işlerini yaptıkları bilinmektedir. Dolayısıyla görece daha kapalı ve daha az kaynakla çalışılan bir iş ortamında eğitimin işe transferi konusunda iş arkadaşları ve yöneticilerden alınan desteğin önemli olarak algılanması iş ortamı koşullarıyla uyumlu olarak değerlendirilmiştir.

Katılımcıların transfer sistemi algılarında eğitimin türüne yönelik olarak beliren farklar incelendiğinde, mesleki-teknik eğitimlere katılanların diğer eğitim türü katılımcılarına göre, eğitimlerine daha hazır oldukları, çalışma gruplarındaki arkadaş ve yöneticilerinden daha fazla destek gördükleri anlaşılmıştır. Mesleki-teknik eğitimlerin, belli bir konu ve görece daha homojen bir hedef kitle baz alınarak tasarlanması faktörlerinin bu eğitim türü katılımcılarının daha pozitif ve daha destekleyici bir transfer algısına sahip olmalarında rol oynadığı değerlendirilmektedir.

Son olarak, eğitime katılım biçimindeki farklar incelendiğinde, zorunlu eğitim katılımcılarının, gönüllü olan ya da yönetim tarafından seçilen katılımcılara oranla, daha güçlü ve daha pozitif bir transfer sistem algılarının olduğu görülmüştür. Bu sonuçlar, Tsai (2003) ve Baldwin ve Magjuka (1991) sonuçlarıyla örtüşmektedir. Çalışanların, zorunlu olarak katıldıkları eğitimlerin örgütün amaç ve beklentileriyle uyumlu olduğunu ve kurumlarının beklentisi doğrultusunda bu eğitime katıldıklarını düşündüklerinden, daha güçlü bir transfer sistemi algısına sahip olmaktadırlar.

Üçüncü ve son araştırma sorusu, ÖTSE faktörlerinden iş ortamına ilişkin faktörlerin, transfer puanlarını diğer faktörlerden daha fazla yordayıp yordamadığının yanıtına odaklanmıştı. Çoklu bağlanım analizi sonuçları, transfer puanlarının yordanmasında iş ortamı faktörlerinin daha fazla varyans açıkladığını

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doğrulamıştır. Anlamlı katkıda bulunan faktörler arasında, yönetici desteği (Basat, 2010, Gümüşeli ve Ergin, 2002, Lim ve Johnson, 2001) ve transfer için eğitim tasarımı (Yamnill ve MacLean, 2005) faktörleri için eğitimin işe transferi yazınında destekleyici sonuçlar mevcuttur.

Araştırma sorularının sonuçları ile öğrenme transferi sistemi faktörlerinden elde edilen betimleyici veriler, kuruluşlarda etkin eğitim transfer sistemleri oluşturmak adına oldukça önemli veriler sunmaktadır. Bu çalışmada da TCMB incelenmiştir.

Transfer sisteminin etkinliğinin, yalnızca eğitimle ilgili faktörlerle sınırlı olmadığı açıktır. İnsan kaynaklarına ilişkin düzenleme ve uygulamalar da oldukça önemlidir. Çalışanları, yeni edindikleri bilgi ve becerileri çalışma ortamına aktarmaları için teşvik etmek üzere kuruluşların, olumlu kişisel sonuçları, öğrenilmiş bilgi ve becerileri aktarma konusunda açıkça ortaya konmuş ilkeleri olması gerekir. Ne var ki, bu durumun TCMB için geçerli olmadığı düşünülmektedir. ÖTSE faktörlerin ortalama değerleri arasında, olumlu kişisel sonuçlar faktörü en düşük ortalama değere sahiptir. Benzer şekilde, iş performansında olacak değişikliklerin değerli sonuçlar yaratacağını ima eden performans – sonuç beklentilerinde faktör ortalama değeri de oldukça düşük düzeydedir. Bu bulgular, çalışmada yer alan TCMB çalışanlarının, eğitim transferi ile elde edilecek sonuçlar arasındaki bağlantıyı göremediklerini göstermiştir. Bu nedenle, eğitim müdahalelerine yoğunlaşmadan önce eğitim transferini arttırmak için TCMB'nin eğitim transferi için bir ödüllendirme sistemi yapılandırmayı dikkate alması gerekmektedir. Ayrıca öğrenenlerin, kendilerini eğitim müdahalelerine daha fazla hazır hissetmeleri için gönüllü katılımın kuruluş tarafından teşvik edilmesi gerektiği sonucu da ortaya çıkmıştır.

Birinci ve ikinci soruların sonuçları, öğrenme transferi sistemi algıları konusunda katılımcı/öğrenen özellikleri ve kuruluşa ilişkin faktörler arasında ciddi bir ayrışma olduğunu göstermiştir. Eğitim programlarının tasarlanması ve düzenlenmesinde bu farklılıkların göz önünde bulundurulması gerekmektedir. Örneğin, çalışma süreleri açısından acemi çalışanların, öğrenme transferi sistemi

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faktörleriyle ilgili algılarının, kıdemli çalışanlarla kıyaslandığında olumsuz olduğu gözlemlenmiştir. Aldıkları eğitimin yaptıkları işle ilgili olduğunu algılamaları için kariyerlerinin başında kendi işlerine yönelik olarak hazırlanmış eğitim programlarına gönderilmeleri gerekmektedir.

Bu çalışmada yöneticilerin desteği de transferin önemli bir belirleyicisi olarak tanımlanmıştır. Bu yüzden, TCMB yöneticilerinin, eğitim transferinin geliştirilmesi konusundaki rollerinin önemini kavramaları gerekir. Öğrendikleri yeni bir şeyi yaptıkları işe ne şekilde uygulayabileceklerini tartışılması; eğitimde edindikleri becerilerin aktarımını engelleyen etkenlerin ortadan kaldırılması ve eğitim programına dayalı iş performansı hedeflerinin belirlenmesi için öğrenenlerle düzenli olarak görüşülmesi, yöneticilerin destekleyici tavırlarıyla beslenirse eğitim transferini iyi yönde etkileyebilecektir. Ayrıca, sonuçlarda gönüllü katılımın, yöneticiler tarafından seçilmeyle kıyaslandığında katılımcıların eğitim için hazır bulunuşluğunu artırdığı görülmüştür. Bu yüzden, TCMB yöneticilerinin, çalışanları bir eğitim programına göndermeden önce onların konuyla ne derece ilgilendiğini araştırmaları önem taşımaktadır.

Bu çalışmanın temel amacı ÖTSE'nin yapısal durumunu belirlemek olmasa da kültürlerarası geçerliği olan bir ölçme aracı olarak kullanılabilmesi için ölçeğin Türkçe'ye adaptasyonuyla ilgili bazı önemli noktaların değerlendirilmesi gerektiği düşünülmektedir.

ABD ve diğer bazı ülkelerde yapılan araştırmalar, Öğrenme Transferi Sistemi Envanterinin (ÖTSE) psikometrik özellikler yönünden uygun bir ölçme aracı olduğunu göstermektedir (Bates, Holton & Hatala, 2012; Holton, Bates & Bookter, 2007; Yamkovenko, Holton & Bates, 2007; Khasawneh, Bates, & Holton, 2006; Chen, Holton & Bates, 2005; Holton, Bates & Ruona, 2000; Seyler, Holton, Bates, Burnett, & Carvalho, 1998).

Yapılan adaptasyon çalışmasında T-ÖTSE'nin faktör analizi sonuçları, öğrenilenleri kullanma fırsatı faktörü dışındaki 15 faktörün orijinal formdaki

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faktörlerle birebir örtüştüğünü göstermektedir. Her ne kadar öğrenilenleri kullanma fırsatı faktörü ölçekte yer almasa da psikometrik özellikleri ve anlamsal açıdan uygun bulunan bu faktöre ait iki madde, öğrenmeyi transfer etme motivasyonu ve transfere ilişkin tasarım faktörlerine dahil edilmişlerdir. Benzer bir durum Chen ve arkadaşları (2005) tarafından yapılan bir araştırmada da gözlenmiş; transfere ilişkin tasarım ve öğrenilenleri kullanma fırsatı faktörleri tek bir faktör altında toplanmıştır. Yamkovenko ve arkadaşları (2007) tarafından yapılan başka bir araştırmada ise bu faktör sadece iki maddeyle ölçekte yer almış; ölçeğin iç tutarlılık endeksi ise .60'ın altında bulunmuştur. Bundan sonra yapılacak araştırmalarda, öğrenilenleri kullanma fırsatı faktörünün farklı kültürlerde de geçerliğinin olabilmesi için var olan maddeler yerine yenilerinin belirlenerek psikometrik özelliklerinin belirlenmesinin yararlı olacağı düşünülmektedir.

Transfere ilişkin bireysel kapasite faktörüyle ilgili elde edilen sonuçların irdelenmesi ikinci konuyu oluşturmaktadır. Bu faktörde orijinal maddeler yer almasına rağmen iç tutarlılık endeksinin .60 olduğu gözlenmiştir. Khasawneh (2004) tarafından yapılan araştırmada da benzer şekilde .55 düzeyinde düşük iç tutarlılık endeksi gözlenmiş; iç tutarlılığının yükseltilebilmesi için araştırmacı tarafından bu faktördeki madde sayısının artırılması ve olumsuz ifadelerden kaçınılması önerilmiştir. Bu yüzden, transfere ilişkin bireysel kapasite faktörü üzerinde çalışma yapılarak bu faktörün geçerlik ve güvenilirliğinin artırılması önerilmektedir.

T-ÖTSE'nin yapısal geçerliğiyle ilgili veri elde edilebilmesi için doğrulayıcı (confirmatory) faktör analizi yapılması gerekmektedir. Bundan sonra yapılacak çalışmalarda yapısal eşitlik modeli kullanılarak T-ÖTSE'nin yapısal geçerliğinin test edilmesi önerilmektedir.

Diğer bir konu ise öğrenme aktarımını değerlendiren kişilerin yanlılığıyla ilgilidir. Bu çalışmada öğrenme aktarımıyla ilgili sonuçlar, yöneticilerin değerlendirmelerinden elde edilmiştir. Ancak, yöneticiler tarafından yapılan bu değerlendirmelerde yükseklik (leniencey) ve ranj darlığı (range restriction) etkisinin

olduğu gözlenmiştir. Bu türdeki değerlendirici hataları, transfer sonuçlarıyla transfer sistemi yapısı arasındaki korelasyonu daraltıcı etkilere yol açabilir. Bu yüzden, transfere etkileyen faktörlerin daha net bir şekilde belirlenebilmesi için öğrenilenlerin işe aktarımıyla ilgili farklı kaynaklardan da bilgi toplanması yararlı olacaktır.

Eğitimin işe aktarımını etkileyen faktörleri belirleyebilmek amacıyla sadece ÖTSE'de yer alan faktörler kullanılmıştır. Ancak, Türk kültürüne özgü başka faktörlerin de bulunabileceği göz önünde tutularak bireysel görüşme ve odak grup toplantıları gibi nicel değerlendirme yöntemlerinin de bundan sonra yapılacak araştırmalarda kullanılmasının yararlı olacağı düşünülmektedir.