

# Training Transfer and Transfer Motivation: The Influence of Individual, Environmental, Situational, Training Design, and Affective Reaction Factors

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Training is a way for organizations to equip their employees with effective skills, knowledge, and abilities in order to meet the global challenges that all workplaces face. Organizations can enjoy the fruits of their training activities if their employees transfer the skills they learned to their jobs, but, in fact, many factors work against employees' effectively transferring those new skills. Researchers are struggling to find the amount of learning transfer to the workplace by trainees (Holton, 1996). Moreover, a variety of learning performance situations exist that make learning transfer complicated (Broad & Newstrom, 1992). Wexley and Latham (2002) highlighted that employees transfer 40% of their training content immediately after training, but this amount falls to 25% after six months and to 15% in one year (see also Cromwell & Kolb, 2004). Baldwin and Ford (1988) and Noe (1986) reported that most trainees do not transfer their newly learned skills to their job. In addition, London and Flannery (2004) discovered that in spite of heavy investment in training activities, the fact is that trainees transfer less than 10% to 20% of their new skills and knowledge. In short, organizations are not getting the desired results from their investment in training activities (Mackay, 2007). Researchers need to address this problem (London & Flannery, 2004).

The purpose of this study is to examine the effects of individual, environmental, training design, and affective reaction factors on training transfer and transfer motivation. To determine the relationship between these factors and their influence on training transfer and to test the model, the researchers collected data from employees in the Malaysian banking sector. Structural equation modeling with Amos 16 was used to test the model and determine the relationship. The study suggested that training stakeholders should manage the training program effectively. Transfer is maximized when trainees have social support, high performance self-efficacy, and transfer motivation. Stakeholders (e.g., trainers, trainees, supervisors, and peers) are important to the training transfer process, as are learner readiness, trainee reaction, instrumentality, and training retention. This study revealed that perceived content validity and transfer design work together and influence the trainee's performance self-efficacy. In other words, if trainers want to improve the performance self-efficacy level of trainees, they need to explain how the trainee can transfer the learned skills at the workplace and make sure the content of the training is similar to the actual job. The main objective of training programs is to align the employee's expertise with organizational goals. Organizations can achieve their desired objectives only when employees transfer the learned skills on the job. Unfortunately, employees often transfer only a small percentage of skills they have learned in training. To effectively manage their training programs, organizations need to identify and focus on the factors that resist effective training transfer.

Among the reasons that the training transfer issue remains unresolved are lack of theoretical support for empirical findings about training transfer (Balaguer, Cheese, & Marchetti, 2006) and lack of theoretical support for training transfer models (May & Kahnweiler, 2000). In addition, May and Kahnweiler (2000) suggested that researchers should conceptualize training transfer in the form of variables and test the relationship of these variables to training transfer. Furthermore, researchers should test these variables using a model and highlight the factors that affect training effectiveness (Scaduto, Lindsay, & Chiaburu, 2008). Another reason behind the low rate of transfer is lack of attention to training transfer in practice and academic research (Kauffeld and Lehmann, 2010). Therefore, the purpose of this study is to highlight the factors that play an important role in effective training transfer and test the model in order to improve training transfer system.

## Factors in Training Transfer and Transfer Motivation

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The following sections explore the factors in training transfer and transfer motivation separately in order to highlight their roles and importance.

### Transfer Design

**Transfer design is one of the important factors in training design.**

Transfer design is one of the important factors in training design. Nikandrou, Brinia, and Bereri (2009) argued that researchers have not examined the influence of training design on training transfer. Holton, Bates, and Ruona (2000) pointed out that when the training content is similar to the actual work, the effectiveness of training rises. Nikandrou et al. (2009) highlighted that training content, the stakeholders, and the instructional design may affect the learning as well. May and Kahnweiler (2000) suggested that the training content should be similar to the actual work and that trainers need to provide trainees sufficient time to practice their new skills. Velada, Caetano, Michel, Lyons, and Kavanagh (2007) support May and Kahnweiler's viewpoint and proposed that training transfer may be at a maximum when trainees learn the training content, when the content is similar to the work they do, and when the trainees have enough time to practice their new skills.

The role of transfer design factor in the training transfer process is twofold. First, design factors may increase transfer when content is similar to the actual work and time is spent on helping trainees understand how to transfer their new skills (Velada et al., 2007). Second, transfer design may increase the efficacy level of the trainees (Bhatti & Kaur, 2010). Bhatti and Kaur also suggested that researchers should empirically examine the impact of the transfer design factor on training transfer and self-efficacy.

## **Perceived Content Validity**

The concept of perceived content validity holds that training content should be similar to the actual work, and this similarity can motivate trainees to transfer the learned skills to their work. Brown and McCracken (2009) noted that after evaluating trainees' learning transfer, the next step is to investigate the link between participation in training activities and training transfer.

The concept of content validity is useful in training activities when the purpose of the training is to make trainee expert in performing his or her actual job tasks. Kauffeld and Lehmann (2010) argued that stakeholders can maximize training transfer by developing training content that is similar to the actual work done. When organizations are launching new technology or a new business plan and trainees have to learn new skills, this concept is not applicable. This concept is also not applicable in situations where trainees use new skills or techniques on the job according to the circumstances.

To maximize training transfer, trainers should design training in such a way that it represents the actual job tasks. In addition, the equipment used in training should be similar to that used on the job. Also, trainees should do the training in an environment that is similar to that of their actual work. In other words, the training activities should be similar to the actual job. Al-Eisa, Furayyan, and Alhemoud (2009) hold that the similarity of training content increases trainees' confidence to learn and transfer their training.

Liebermann and Hoffmann (2008) believe that the similarity of training content to the actual job creates a positive attitude toward the training activities. Awais and Sharan (2010) proposed that content validity influences trainees' reactions and performance self-efficacy. Therefore, this study empirically examines the impact of perceived content validity on affective reaction and performance self-efficacy.

## **Performance Self-Efficacy**

Performance self-efficacy represents individual characteristics. Self-efficacy is concerned not so much with the skills of individuals, but with whether they believe they can use those skills to reach certain goals, such as performing well. Velada et al. (2007) found that performance self-efficacy positively influences transfer of training, and Kirwan and Birchall (2006) proposed that perceived content validity and transfer design work together to improve performance self-efficacy and influence transfer motivation. Researchers have also proposed that the concept of performance self-efficacy should be tested with other variables to analyze the combined effects.

Researchers have been examining the impact of performance self-efficacy on other training transfer variables like transfer motivation and training transfer and found that performance self-efficacy helps trainees to transfer the learned skills at their workplace up to the maximum level (Chiaburu & Marinova, 2005; Kirwan & Birchall, 2006; Velada et al.,

2007). Awais and Sharan (2010) argued that past researchers have not highlighted the factors that increase the level of trainees' performance self-efficacy.

To boost trainee confidence and level of understanding concerning the transfer of skills, trainers can use different examples related to learners' work. In other words, trainers can use examples to show trainees how they can transfer the learned skills on the job. In addition, this practice will assist trainees in maximizing the training transfer. Kirwan and Birchall (2006) tested the Holton model and found a significant correlation between transfer design and performance self-efficacy. Moreover, Al-Eisa et al. (2009) noted that similarity of training content increases trainees' confidence in learning and transferring the training. This shows that transfer design also influences transfer motivation through performance self-efficacy. In other words, we can conclude that performance self-efficacy mediates the relationship among transfer design, perceived content validity, and transfer motivation. Empirically testing this relationship will lead to new insights and highlight the importance of performance self-efficacy factors in training transfer theory. Therefore, the study set out in this article empirically examined the effects of transfer design and content validity on performance self-efficacy that influenced transfer motivation and training transfer.

### **Learner Readiness**

Learner readiness represents characteristics of individuals. The concept of learner readiness relates to integrated control theory. It explains that trainees should be prepared to enter into and participate in training for learning and skills transfer.

Bates, Kauffeld, and Holton (2007) suggested that researchers should test the relationship between transfer and the other factors in the Learning Transfer System Inventory (LTSI): learner readiness, transfer design, and performance coaching. In an earlier study, Fecteau, Dobbins, Russell, Ladd, and Kudisch (1995) proposed that training reputation (when employees perceive that training is effective and helpful for career development) also influences learner readiness.

Stephen (2008) measured learner readiness in terms of knowledge retention and motivation to learn and apply skills. He found that learning transfer is higher when trainees are confident that they will retain the new skills and motivated to apply this knowledge. In other words, trainees who know about the training program and are motivated to apply what they learn are more likely to transfer their learning.

Bates et al. (2007) proposed the concept of learner readiness in terms of (1) a program that affects performance, (2) understanding about job-related developments, (3) expectations of the training, and (4) outcomes expected at the beginning of the training. Kirwan and Birchall (2006) argued that transfer motivation and performance self-efficacy correlated with the same factors, such as learner readiness, transfer design, perceived content validity, and opportunity to use the new skills. There is

also some indication that these factors may work collectively. In the same study, Kirwan and Birchall (2006) found that learner readiness exerted a significant effect and proposed that learner readiness directly affects motivation to transfer.

## **Peer Support**

In the category of environmental factors, peer support plays an important role in the training transfer process and influence on training transfer (Burke & Hutchins, 2007), but this factor has not been examined sufficiently in training transfer models (Scaduto et al., 2008). Some researchers have tried to examine the role of peer support in training transfer models and proposed that peer support can help trainees learn and maintain new skills (Aguinis & Kraiger, 2009). Furthermore Chiaburu and Tekleab (2005) suggested that peer support more significantly influences training transfer and transfer motivation compared to other environmental factors like supervisor and management support. Chen, Kwok, and Goodson (2007) found that top management and peer support influence training transfer.

Although some researchers who examined the role of peer support in the training transfer process and found that peer support positively influences such transfer (Nijman et al., 2006; Kirwan and Birchall 2006), they also found that it was not related to pretraining motivation (Facteau et al., 1995). In contrast, some found that peer support positively influences transfer motivation (Ruona et al., 2002). Furthermore, Holton et al. (2000) and van der Klink and Streumer (2002) did not find any significant relationship between peer support and training transfer. Tracey, Tannenbaum, and Kavanagh (1995) argued that peer support is an important factor in training transfer models. These conflicting results of past research should encourage researchers to examine the role of peer support and include peer support in training transfer models more frequently.

In this study we suggest that researchers should consider the time and type factor while examining peer support in training transfer models. Researchers might, for example, divide the work into determining what type of support is needed at various times in the training process: before, during, and after training. For example, Noe (1986) measured peer support as “peers care about applying new knowledge” (p. 45), and Chiaburu and Marinova (2005) used their scale. They found that peer support was positively related to pretraining motivation and skills transfer. Facteau et al. (1995) measured peer support in terms of “peers’ encouragement of incorporating new learning” (p. 21) and found that peer support is related to skills transfer but not pretraining motivation.

Pidd (2004) measured peers’ support in terms of expectations and behavior and proposed a moderating role of peer support of trainees identified with workplace groups and training transfer. In addition, Seyler, Holton, Bates, Burnett, and Carvalho (1998, p. 131) measured peer support as “peers’ appreciation for using new skills,” “peers’ encouragement for using

new skills,” “peers’ expectations,” and “peers’ behavior” against training transfer and found that peer support influences transfer motivation and training transfer. Due to the conflicting results, this study proposes that future research should highlight the kind of peer support trainees need at each stage of training. Furthermore, at the time of developing the peer support scale, researchers should classify the peer support that trainees need before, during, and after training.

### **Supervisor Support**

In the category of environmental factors, supervisor support plays an important role in the training transfer process and influences training transfer (Burke & Hutchins, 2007), a factor that has not been examined sufficiently in training transfer models (Scaduto et al., 2008). Research has examined the role of supervisor support in training transfer models and found that this support does not influence training outcomes (Chiaburu & Marinova, 2005; Klink, Gielen, & Nautta, 2001). It does, however, influence trainees’ transfer motivation (Nijman et al., 2006). In other words, supervisor support has a positive influence on training transfer mediated by its influence on transfer motivation. Some studies (Velada et al., 2007; Liebermann & Hoffmann, 2008) found that supervisor support does not significantly influence transfer motivation, while others found a positive relationship between supervisor support and training transfer (Montesino, 2002; Smith-Jentsch, Salas, & Brannick, 2001; Warr, Allan, & Birdi, 1999).

Nijman et al. (2006) measured supervisor support in terms of the “supervisor’s opportunity to apply learned skills” and found that this support has no direct effect on training transfer when taking into account the motivation to transfer. In addition, Liebermann and Hoffmann (2008) measured supervisor support in terms of supervisor interest in training and support for transfer and found little influence on transfer motivation. Finally, Velada et al. (2007) measured supervisor support in terms of “different methods to apply training on the job,” “difficulties in training transfer,” “training interest,” “performance feedback,” and “training goals” and found effects on transfer motivation.

Due to the conflicting results, the study we report here suggested that researchers should differentiate what kind of supervisor support trainees need at each stage of training. Furthermore, at the time of developing the supervisor support scale, researchers should classify the supervisor support that trainees need before, during, and after training.

### **Instrumentality**

Instrumentality (i.e., intrinsic rewards) is an important factor. The concept of instrumentality explains that employees perceive certain rewards after training transfer. Researchers divide instrumentality into two categories: intrinsic rewards, which include interesting work and the content of activity assigned, and extrinsic rewards, which include remuneration

and career possibilities (Guerrero & Sire, 2001). Furthermore, Tharenour (2001) found that both intrinsic and extrinsic rewards have a positive influence on transfer motivation. Nikandrou et al. (2009) argued that trainees think that internal rewards (intrinsic rewards) are important because they help trainees develop more self-confidence and personal improvement. Pilati and Borges-Andrade (2008) considered instrumentality as a belief that trainees carry with them in order to get certain rewards (increased pay, promotion, appreciation) after training. In contrast, if trainees have few expectations of training outcomes, they will be poorly motivated, which results in a lack of training effectiveness (Clark, Dobbins, & Ladd, 1993; Fecteau et al., 1995; Noe, 1986).

Awais and Sharan (2010) found that trainees motivated through extrinsic rewards performed well but made more mistakes while performing their job tasks. In contrast, trainees who were motivated through intrinsic rewards performed their job tasks more accurately. Osman-Gani and Jacobs (2005) highlighted that intrinsic rewards can bring more innovation and effectiveness to an employee's performance. Awais and Sharan (2010) pointed out that if the trainees are intrinsically motivated, they retain and transfer the learned skills at their workplace. Therefore, the purpose of our study is to empirically test the dual role of intrinsic rewards—first to examine the effects of intrinsic rewards on training retention and then to examine the effects of intrinsic rewards on transfer motivation.

## **Training Retention**

Training retention is another important factor among individual characteristics. After completing training, trainees cannot effectively transfer what they have learned unless they retain that training. Ford (2009) found that getting learners involved is the key to retention and application of learned skills. Velada et al. (2007) suggested that “training retention is similar to the cognitive ability and is the degree to which the trainee retains the content after training is completed.” In the training transfer process, many factors affect training retention. In this regard, many factors influence employees' learning retention, such as transfer design, trainee characteristics, and environmental factors (May & Kahnweiler, 2000).

Noe, Hollenbeck, Gerhart, and Wright (2006) and Kirkpatrick (1976) proposed that in order to perform better, trainees must learn and retain the training content and transfer it to their work. In the past, researchers have focused on the concept of retention of knowledge in the educational sector. To our best understanding, only a few researchers have included this concept in training transfer theory. Unfortunately, human resource development professionals and researchers have ignored the concept of training retention in training transfer theory (Awais & Sharan, 2010). Hence, they should try to determine what factors help trainees retain more skills. Ultimately, retention of skills leads to increased training transfer.

Kontogiorghe (2001) found that extrinsic rewards such as pay and promotions, as well as punishment for failing to use the new skills and knowledge, were weakly associated with training retention. Conversely, intrinsic rewards such as praise and recognition for using the newly learned skills and knowledge acquired in training proved to be a more important variable. In addition, Velada et al. (2007) found that training retention predicts a significant relationship with transfer of training. Therefore, we can conclude that training retention mediates the relationship between intrinsic rewards and training transfer.

### **Affective Reaction**

Affective reaction is the first stage of Kirkpatrick's (1976) training effectiveness model. Past work has given sufficient attention to training and development (Chen, Sok, & Sok, 2007), and many researchers have highlighted the importance of affective reaction (Arthur, Bennett, Edens, & Bell 2003). Nevertheless, there remains a lack of consensus among researchers about the role of affective reaction in training effectiveness (Schmidt, 2007; Sitzmann, Brown, Casper, & Ely, 2008). Affective reactions explain learners' training experience (Sitzmann et al., 2008) and are a source for organizations to evaluate their training programs (Sugrue & Rivera, 2005). In addition, Sitzmann et al. (2008) highlighted that affective reaction is the most commonly used method to assess trainees' response to training activities, yet it is poorly understood (Sitzmann et al., 2008).

The most commonly used method for training evaluation is affective reactions (Ruona et al., 2002), but researchers lack the empirical evidence to support the theoretical grounds, which explain that affective reaction influences other training outcomes (Alliger & Janak, 1989; Dixon, 1990; Noe, 1986; Warr & Bunce, 1995). A possible reason behind the conflicting results in past studies might be due to a lack of understanding about measuring affective reaction. Some researchers have evaluated affective reaction to training content (Baldwin, Magjuka, & Loher, 1991; Noe, 1986; Russell, Terborg, & Powers, 1985), whereas others have focused on affective reaction to training transfer at the workplace (Latham & Saari, 1979; Wexley & Baldwin, 1986). Another possible reason, highlighted by Pilati and Borges-Andrade (2008), is poor measurement of affective reaction. In addition, Dysvik and Kuvaas (2008) argued that the validity of affective reaction is questionable, and researchers should focus more on how affective reaction influences the training transfer process because some researchers (Liebermann and Hoffmann 2008) found a positive relationship between affective reaction and transfer motivation. Moreover, Liebermann and Hoffmann (2008) argued that if the perceived practical relevance of the training matches or exceeds the trainee's expectation, he or she will be satisfied.

Seyler et al. (1998) found a significant correlation between content validity and affective reaction. Therefore, we can conclude that affective



reaction mediates the relationship between perceived content validity and transfer motivation. Further empirical examination of the mediating role of affective reaction between perceived content validity and transfer motivation will help researchers explain the importance of affective reaction in training transfer process.

### **Transfer Motivation**

One of the important factors among individual characteristics is transfer motivation: in order to achieve maximum learning transfer, the learner should have high transfer motivation (Nikandrou et al., 2009). Holton (1996) suggested that it is important for trainees to have transfer motivation in order to transfer the learned skills on the job, yet researchers have ignored transfer motivation in training effectiveness studies (Colquitt, LePine, & Noe, 2000).

Many factors affect the level of learner transfer motivation: learner readiness, supervisor and peer support, training design and performance self-efficacy, intrinsic rewards, and affective reaction (Kirwan & Birchall, 2006; Stephen, 2008; Pidd, 2004). Chiaburu and Marinova (2005) found that transfer motivation is significantly related to learning and training transfer. Some other researchers have made similar findings (Kirwan & Birchall 2006; Liebermann & Hoffmann, 2008) and explain that transfer motivation positively influences training transfer. Therefore, we can conclude that transfer motivation mediates the relationship between peer support, supervisor support, learner readiness, performance self-efficacy, intrinsic rewards, affective reactions, and training transfer.

### **Hypotheses**

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As a result of our research, we developed the following hypothesis for our study.

- H1:* Performance self-efficacy (an individual factor) mediates the relationship between transfer design (a training design factor) and transfer motivation.
- H2:* Performance self-efficacy mediates the relationship between perceived content validity (training design) and transfer motivation.
- H3:* Transfer motivation mediates the relationship between performance self-efficacy (an individual factor) and training transfer.
- H4:* Transfer motivation mediates the relationship between learner readiness (an individual factor) and training transfer.
- H5:* Transfer motivation mediates the relationship between peer support (an environmental factor) and training transfer.

- H6:* Transfer motivation mediates the relationship between supervisor support (an environmental factor) and training transfer.
- H7:* Transfer motivation mediates the relationship between instrumentality or intrinsic rewards (a situational factor) and training transfer.
- H8:* Training retention (an individual factor) mediates the relationship between the instrumentality or intrinsic reward (a situational factor) and training transfer.
- H9:* Affective reaction mediates the relationship between perceived content validity (training design) and transfer motivation.
- H10:* Transfer motivation mediates the relationship between affective reaction and training transfer.

## Methodology

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The purpose of this study was to evaluate the transfer of training in the Malaysian banking sector. The study respondents had off-the-job training, and the instruction methods were selected by the trainers or managers. The training content was designed to provide eligible participants with instructions on managing administrative work and performing different work activities in the bank. According to the policy of Bank Negara Malaysia (BNM), every selected candidate was required to attend a two-week training program before beginning work in these areas. Over the two weeks, trainees were taught a variety of new skills, including supervisory skills, problem solving, team management, conflict resolution, and communication skills.

The data for this study were collected from 503 employees of 11 Malaysian banks with a majority of female employees (61%); 78% of respondents were less than 39 years, 89% had less than an undergraduate degree, and 64% were nonmanagerial staff. Forty-six bank branches were randomly selected from the Klang valley, Malaysia's economic hub. We selected every third branch out of the 138 branches located within this area. Of the 1,000 questionnaires distributed, 528 completed questionnaires were returned. Twenty-five questionnaires were discarded because of problematic responses. The remaining 503 questionnaires were used for analysis. No statistically significant differences were found between the participants of the study and the complete sample of the trainees with regard to gender, age, training period, and job position.

In order to reduce any biased response, the questionnaire was divided into two sections based on dependent and independent variables but using the same rating source. In section 1, the respondents were asked to rate their response and returned the completed questionnaire to their

manager or supervisor. In section 2, another questionnaire was distributed to respondents after a few days and asked for their response based on 5-point scale. Although the period of time between sections 1 and 2 was short, this practice helped to reduce biased response.

## Measurement

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To measure the variables, the researcher used scales adopted from previous research. The respondents were asked to mark a number on a 5-point Likert scale from 1 to 5 for each statement, where 1 indicates Strongly Disagree to 5, which means Strongly Agree:

- ♦ Transfer design was measured with three items (e.g., “It is clear to me that people conducting the training understand how I will use what I learn”).
- ♦ Perceived content validity was measured with three items (e.g., “I like the way training seems so much like my job”).
- ♦ Performance self-efficacy was measured with four items (e.g., “I am confident in my ability to use new skills at work”).
- ♦ Learner readiness was measured with five items (e.g., “I know what to expect from training before it begins”).
- ♦ Peer support was measured with three items (e.g., “At work, my colleagues expect me to use what I learn in training”).
- ♦ Supervisor support was measured with three items (e.g., “My supervisor meets with me to discuss ways to apply training on the job”).
- ♦ Transfer motivation was measured with three items (e.g., “Training will increase my personal productivity”) and assessed as proposed by Holton (1996).
- ♦ Affective reaction was measured with three items (e.g., “I am pleased I attended this training”) as proposed by Smith-Jentsch, Salas, and Brannick (2008).
- ♦ Training transfer was assessed as proposed by Tesluk, Farr, Mathieu, and Vance (1995) with three items (e.g., “The training will help me to improve my job performance”).
- ♦ Intrinsic rewards were measured with seven items proposed by Guerrero and Sire (2001) (e.g., “Training increases my autonomy at work”).
- ♦ Training retention was measured with three items developed by Velada et al. (2007) (e.g., “I can easily say several things that I have learned in the training course”).

## Analysis

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To analyze the research data, structural equation modeling (SEM) with Amos 16 was used. In the first of two steps, measurement model

TABLE 1 RELIABILITY OF THE SCALE	
NAME OF VARIABLE	INTERNAL CONSISTENCY
Reaction	0.969
Instrumentality (intrinsic rewards)	0.930
Learner readiness	0.672
Motivation to transfer	0.769
Peer support	0.970
Perceived content validity	0.759
Performance self-efficacy	0.968
Supervisor support	0.704
Training retention	0.859
Training transfer	0.980
Transfer design	0.686

(factor) analyses evaluated the contribution of each item to the construct (latent variables) being assessed. In the second step, the structural model was tested to determine the strength of the hypothesized relationships between the constructs.

Table 1 shows that the internal consistency of all scales is above then 0.7, except “Learner readiness” as 0.672 (Hair, William, Barry, & Rolph, 2000), which indicates that all scales have higher internal consistency level.

Fornell and Larcker (1981) argued that the convergent validity of all scales should be at least 0.50. As shown in Table 1, all variables have at least 0.50 or all values are greater than 0.50, which shows that all scales have adequate convergent validity.

### Discriminant Validity

All items in Table 2 are greater than squared covariance or greater than 0.60, as proposed by Hair et al. (2007), which demonstrates that all variables have discriminate validity and are statistically significant. The criterion validity of the studied variables was verified by Holton (1996) and Velada (2007). Different measures were selected for model fit to test the structural model.

Different measures were selected for model fit to test the structural model. With reference to chi square goodness-of-fit indices, Wynne, Johnson, and Schwarz (2008) argued that these indices can be used to evaluate model fit, but psychometricians tend not to consider them a reliable guide for model adequacy (Hu & Bentler, 1999). This is because the actual size of the test statistic depends not only on model adequacy (Wynne et al., 2008) but also on which one among several chi square tests is used, as well as other conditions (Hu & Bentler, 1999). This statistic has no upper limit, and so its value is not interpretable in a standard way (Kline, 2005). Therefore, we have selected alternative measures of fit. For

**TABLE 2    CONVERGENT VALIDITY**

CONSTRUCT	COMPOSITE	CONVERGENT VALIDITY	AVE
Perceived content validity	A13	0.714	0.715
	A14	0.753	
	A15	0.680	
Transfer design	A16	0.812	0.526
	A17	0.766	
Peer support	A07	0.944	0.957
	A08	0.990	
	A09	0.937	
Supervisor support	A10	0.616	0.664
	A11	0.726	
	A12	0.652	
Learner readiness	A24	0.873	0.652
	A27	0.886	
Transfer motivation	A02	0.798	0.723
	A03	0.740	
	A04	0.633	
Training transfer	A25	0.998	0.970
	A26	0.987	
	A29	0.927	
Training retention	A21	0.714	0.816
	A20	0.842	
	A19	0.894	
Intrinsic rewards	A39	0.693	0.806
	A38	0.715	
	A37	0.791	
	A36	0.890	
	A35	0.912	
	A34	0.910	
	A33	0.731	
Performance self-efficacy	A43	0.861	0.940
	A32	0.945	
	A31	0.986	
	A30	0.969	
Reaction	A28	0.913	0.955
	A23	0.977	
	A22	0.975	

<b>TABLE 3    COMPUTATION OF DEGREE OF FREEDOM (DEFAULT MODEL)</b>	
Number of distinct sample moments	820
Number of distinct parameters to be estimated	107
Degree of freedom (820-107)	713

<b>TABLE 4    RESULTS (DEFAULT MODEL)</b>	
<b>MINIMUM ACHIEVED</b>	
Chi square	978.532
Degrees of freedom	539
Probability level	0.000

these measures, goodness-of-fit is based on various cutoff criteria (Byrne, 2001).

### Computation of Degree of Freedom (Default Model)

For goodness-of-fit indices, it is important to be aware that there is no distinction made in terms of degree of fit for differences in fit indexes beyond the cutoff point (Wynne et al., 2008) as indicated in Tables 3 and 4. Table 5 shows the measurement model fit. Six indicators have been selected to explain the fit. In this model the comparative fit index (CFI) is 0.942, higher than the acceptable baseline ( $CFI \geq 0.90$ ), which indicates adequate fit (Cleveland, Laroche, & Papadopoulos, 2009).

With reference to the adjusted goodness-of-fit index (AGFI), the value is 0.821, which fulfills the acceptable baseline ( $AGFI \geq 0.80$ ) and indicates good fit (Cheng, 2007). The root mean square error of approximation (RMSEA) is 0.053; the model fit value should be less than 0.05 to indicate a good fit (Byrne, 2001); a value up to 0.10 can indicate average fit (Chen et al., 2008), and above a value of 0.10, the fit is said to be poor (Byrne, 2001). The chi square/degree of freedom (CMIN/df) is 2.406, also indicating good fit— $CMIN/df < 3$  (Cheng, 2007; Byrne, 2001; Chau, 1997). The Tucker-Lewis index (TLI) is 0.934, which indicates adequate fit (Loibl, Cho, Diekmann, & Batte, 2009). Finally, the IFI is 0.942, which is also considered an adequate fit (Lai, 2009).

Table 5 shows the standardized model fit. Six indicators have been selected to explain the model fit. In this model, the comparative fit index (CFI) is 0.90 for the proposed model and 0.962 for competing models A and B, which touches the acceptable baseline ( $CFI \geq 0.90$ ) and indicates adequate fit (Cleveland et al., 2009; Chen et al., 2008; Cheng, 2007; Chau, 1997).

With reference to the AGFI, the value is 0.852 for proposed and competing models A and B, which fulfills the acceptable baseline

**TABLE 5 MEASUREMENT MODEL FIT**

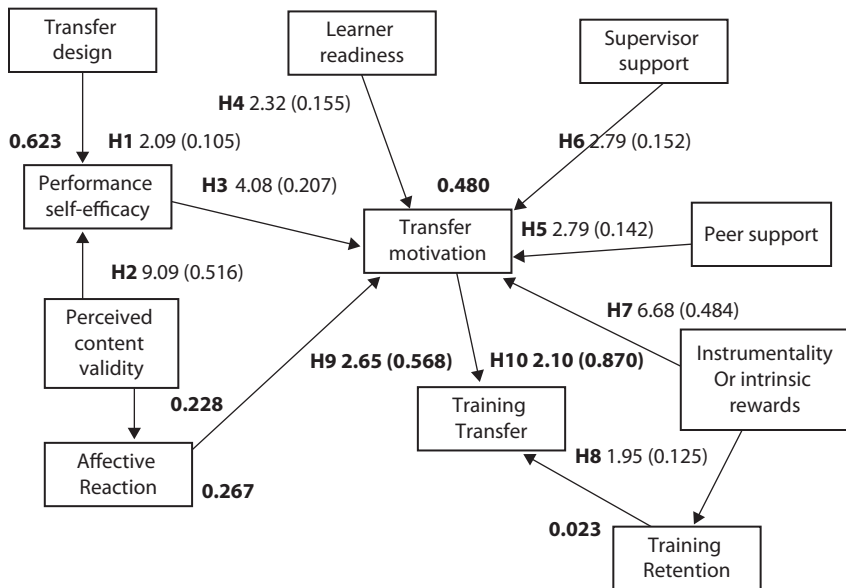
OVERALL MODEL MEASURE	OVERALL MODEL SCORE	ACCEPTABLE MODEL FIT	ACCEPTABLE BASELINE
CFI	0.942	Passed	$\geq 0.90$
AGFI	0.821	Passed	$\geq 0.80$
RMSEA	0.053	Passed	$< 0.10$
CMIN/DF	2.406	Passed	$< 3$
TLI	0.934	Passed	$\geq 0.89$
IFI	0.942	Passed	$\geq 0.90$

(AGFI  $\geq 0.80$ ) and indicates good fit (Cheng, 2007; Chau, 1997). The RMSEA is 0.048, which also shows a good model fit value (it should be less than 0.05; Byrne, 2001). Up to 0.10 can indicate an average fit (Chen et al., 2008), and above a value of 0.10, the fit is said to be poor (Byrne, 2001). The CMIN/df is 2.162, also indicating good fit with a CMIN/df below 3 (Cheng, 2007; Byrne, 2001; Chau, 1997). In addition, the TLI is 0.890 for the proposed model and 0.95 for competing model B, indicating adequate fit (Loibl et al., 2009). Finally, the IFI is 0.901, also considered an adequate fit (Lai, 2009).

The final step is to compare the proposed model with two competing nested models (Hair et al., 2007) to ensure that no other model is acceptable. Therefore, three models were examined, for which the model parsimony, fit indexes, and theoretical justification were compared as indicated in Tables 6, 7, and 8. The first model is proposed with a chi square of 1541.39. The second model, competing model A, added the direct paths and has the lowest chi square with 1149.36 and degree of freedom 556; it also has the highest number of parameters. Therefore, the alternative was parsimonious. Furthermore, the results showed that most of the relationships among variables were not statistically significant. The third model, competing model B, has a chi square of 1168.91, which is lower than the proposed model and good model fit as compared to the proposed model. However, "good model fit alone is insufficient to support to proposed structural theory" (Hair et al., 2007. p. 757). Therefore, the proposed models have been accepted.

## Findings

All constructs are statistically significant with *p*-value less than 0.05 (Hair et al., 2007). In order to see the effects of different factors on transfer motivation and training transfer, the researcher explained the parameters of the significant paths. As indicated in the Figure 1 transfer design and perceived content validity explain 62% of the variance of performance self-efficacy. In addition, 27% of the variance of affective reaction is explained



**FIGURE 1.** STANDARDIZED MODEL FIT

by the validity of the perceived content. Performance self-efficacy, affective reaction, learner readiness, peer support, supervisor support, and instrumentality (intrinsic rewards) explain 48% of the variance of transfer motivation. Furthermore, instrumentality (intrinsic rewards) also explains only 2% of the variance of training retention. Finally, training retention and transfer motivation explain 23% of the variance of training transfer.

### Transfer Design

Transfer design is an important factors in training transfer. In the past, researchers have found many training design factors that influence the transfer of training at the workplace. Holton et al. (1997) developed the LTSI in which they introduced the transfer design factor. Transfer design develops an understanding about the training program and shows in a practical way how training can be best used back on the job. Nikandrou et al. (2009) argued that studies have seldom examined the impact of training design and methods on training transfer. Therefore, the hypothesis developed based on the research framework (H1) explains that performance self-efficacy as an individual factor mediates the relationship between transfer design and transfer motivation.

The findings of this research support H1 and suggest that the relationship between transfer design and performance self-efficacy is much stronger (effect = 0.484) than transfer motivation (effect = 0.141) which explains that transfer design influences transfer motivation through performance self-efficacy. In other words, transfer design has a strong direct effect on performance self-efficacy and influences transfer motivation



<b>TABLE 6    STRUCTURAL MODEL FIT</b>					
<b>OVERALL MODEL MEASURE</b>	<b>PROPOSED MODEL</b>	<b>COMPETING MODEL A</b>	<b>COMPETING MODEL B</b>	<b>ACCEPTABLE MODEL FIT</b>	<b>ACCEPTABLE BASELINE</b>
CFI	0.900	0.962	0.962	Passed	$\geq 0.90$
AGFI	0.852	0.855	0.855	Passed	$\geq 0.80$
RMSEA	0.048	0.046	0.046	Passed	$< 0.10$
CMIN/df	2.162	2.067	2.065	Passed	$< 3$
TLI	0.890	0.657	0.957	Passed	$\geq 0.89$
IFI	0.901	0.963	0.962	Passed	$\geq 0.90$

<b>TABLE 7    COMPUTATION OF DEGREE OF FREEDOM</b>			
	<b>PROPOSED MODEL</b>	<b>COMPETING MODEL A</b>	<b>COMPETING MODEL B</b>
Number of distinct sample moments	820	666	666
Number of distinct parameters to be estimated	107	110	100
Degree of freedom	713	556	566

<b>TABLE 8    RESULTS</b>			
<b>MINIMUM WAS ACHIEVED</b>	<b>PROPOSED MODEL</b>	<b>COMPETING MODEL A</b>	<b>COMPETING MODEL B</b>
Chi square	1541.391	1149.36	1168.91
Degrees of freedom	713	556	566
Probability level	0.000	0.000	0.000

indirectly. The results of this study explain that performance self-efficacy mediates the relationship between transfer design and transfer motivation  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 6.688$ ).

### **Perceived Content Validity**

With reference to perceived content validity, Liebermann and Hoffmann (2008) argued that if the perceived practical relevance of the training matches or exceeds the trainee's expectation, he or she will be satisfied (reaction) and therefore will react more positively. If the training is less relevant, the trainee will be less satisfied or show a negative affective reaction. In the same study, they found that practical relevance is an important factor that influences affective reaction. They also found that there is no significant direct correlation between perceived content validity

**TABLE 9 SUMMARY OF EFFECTS**

VARIABLES	DIRECT EFFECTS	INDIRECT EFFECTS	TOTAL EFFECTS
Intrinsic rewards--> Training retention	0.152	-----	0.152
Intrinsic rewards --> Transfer motivation	0.142	-----	0.142
Intrinsic rewards ---> Training transfer	-----	0.091	0.091
Learner readiness-> Transfer motivation	0.155	-----	0.155
Learner readiness ---> Training transfer	-----	0.065	0.065
Supervisor support->Transfer motivation	0.145	-----	0.145
Supervisor support --> Training transfer	-----	0.060	0.060
Peer support -----> Transfer motivation	0.125	-----	0.125
Peer support --> Training transfer	-----	0.052	0.052
Reaction-----> Transfer motivation	0.105	-----	0.105
Reaction --> Training transfer	-----	0.105	0.105
Self-efficacy--> Transfer motivation	0.291	-----	0.291
Self-efficacy --> Training transfer	-----	0.122	0.122
Training retention--> Training transfer	0.207	-----	0.207
Transfer motivation -> Training transfer	0.418	-----	0.418
Transfer design--> Self-efficacy	0.484	-----	0.484
Transfer design ---> Transfer motivation	-----	0.141	0.141
Transfer design ---> Training transfer	-----	0.059	0.059
Training content --->Affective reaction	0.516	-----	0.516
Training content -----> Self-efficacy	0.379	-----	0.379
Training content--> Transfer motivation	-----	0.164	0.164
Training content--> Training transfer	-----	0.059	0.059

and transfer motivation. Other researchers have also found that perceived content validity affects transfer motivation through performance self-efficacy.

Garavaglia (1993) proposed that two factors lead to less training transfer: when trainees do not get support from their work environment and when they perceive that the training activities are irrelevant. In our proposed framework, we highlight the multidimensional role of perceived content validity factor. The first dimension exposes the role of perceived content validity as a factor to increase the learner performance self-efficacy level, which ultimately affects transfer motivation. When learners perceive that the content of the training is similar to what they do on the job, they more strongly believe in their capabilities to perform given tasks. In addition, the learner's perception that "training content is similar to the actual job tasks" also leads to a positive affective reaction.

TABLE 10 HYPOTHESIS TESTING				
NUMBER	HYPOTHESIS	P-VALUE	T-VALUE	ACCEPT OR REJECT
H1	Performance self-efficacy (an individual factor) mediates the relationship between transfer design (a training design factor) and transfer motivation.	0.02	6.688	Accept
H2	Performance self-efficacy mediates the relationship between perceived content validity (training design) and transfer motivation.	0.001	5.467	Accept
H3	Transfer motivation mediates the relationship between performance self-efficacy (an individual factor) and training transfer.	0.001	4.610	Accept
H4	Transfer motivation mediates the relationship between learner readiness (an individual factor) and training transfer.	0.020	2.320	Accept
H5	Transfer motivation mediates the relationship between peer support (an environmental factor) and training transfer.	0.049	1.96	Accept
H6	Transfer motivation mediates the relationship between supervisor support (an environmental factor) and training transfer.	0.031	2.156	Accept
H7	Transfer motivation mediates the relationship between instrumentality or intrinsic rewards (a situational factor) and training transfer.	0.005	2.794	Accept
H8	Training retention (an individual factor) mediates the relationship between the instrumentality or intrinsic reward (a situational factor) and training transfer.	0.001	4.086	Accept
H9	Affective reaction mediates the relationship between perceived content validity (training design) and transfer motivation.	0.036	9.098	Accept
H10	Transfer motivation mediates the relationship between affective reaction and training transfer.	0.001	2.097	Accept

Note. Significance level:  $p$ -values  $< 0.05$ ;  $t$ -value  $> 1.96$  (Hair et al., 2007).

The hypothesis we developed based on the research framework explains that performance self-efficacy as an individual factor mediates the relationship between perceived content validity and transfer motivation (H2) as indicated in Table 10. The results of this study supported H2 and explains that performance self-efficacy mediates the relationship between perceived content validity and transfer motivation  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 5.467$ ). The results of this study's  $p$ -value ( $p < 0.05$ ; Garver & Williams, 2009;  $p = 0.001$ ) also provide evidence and explain that perceived content validity positively influences performance self-efficacy (effect = 0.516) as indicated in Table 9.

### **Performance Self-Efficacy**

Performance self-efficacy develops trainees' beliefs in their abilities, which leads trainees to realize they can use the skills they learn on the job and improve their job performance. In addition, self-efficacy increases trainees' confidence that they can overcome any obstacles they might face as they work to transfer their skills, and it gives them confidence in the ability.

The hypothesis developed based on the research framework explains that transfer motivation mediates the relationship between performance self-efficacy and training transfer (H3). The results of the study supported H3 and indicate that transfer motivation mediates the relationship between performance self-efficacy and training transfer  $t$ -value ( $t = 4.610$ ;  $t > 1.96$ ; Hair et al., 2007). The results show that performance self-efficacy directly affects transfer motivation (effect = 0.291). The results also provide evidence about  $p$ -value ( $p = 0.001$ ;  $p < 0.05$ ; Garver & Williams, 2009) indicating that the path (performance self-efficacy have positive relationship with transfer motivation) is statistically significant.

### **Learner Readiness**

With reference to learner readiness, Kirwan and Birchall (2006) determined that transfer motivation and performance self-efficacy correlate with learner readiness, transfer design, perceived content validity, and opportunity to use the learning. There is also some indication that these factors may work collectively. Kirwan and Birchall also found that learner readiness exerts a significant effect and proposed that learner readiness directly affects motivation to transfer.

The hypothesis we developed based on the research framework explains that transfer motivation mediates the relationship between learner readiness and training transfer (H4). When trainees have the basic knowledge and skills to perform different tasks during training, they will become motivated to transfer the learned skills (beta = 0.155). In other words, learner readiness exerts a significant indirect effect on training transfer through transfer motivation. The results of this study's  $t$ -value ( $t = 2.320$ ;  $t > 1.96$ ; Hair et al., 2007) indicate that transfer motivation mediates the relationship between learner readiness and training transfer and supports H4. Learner readiness motivates trainees to

transfer their new skills and directly influences transfer motivation (effect = 0.155). The  $p$ -value ( $p = 0.020$ ;  $p < 0.05$ ; Garver & Williams, 2009) indicates that the path (learner readiness affects the transfer motivation) is statistically significant. Learner readiness, however, exerted an indirect effect on training transfer mediated by transfer motivation.

**Intrinsic and extrinsic rewards (instrumentality) suggest that individuals are poorly motivated when they do not believe that training will lead to improvement in their work, career, or compensation.**

### **Peer and Supervisor Support**

Environmental support (peer and supervisor support) plays an important role in the training transfer process, but due to conflicting results in past studies, there is a lack of consensus among researchers about peer and supervisor support. Therefore, this study suggests that researchers need to classify the kind of support trainees require before, during, and after training. The classification of peer and supervisor support at each stage of training will help researchers understand the importance of each kind of support before, during, and after training and its effects on trainees transfer motivation and training transfer.

The hypotheses developed based on the research framework explain that transfer motivation mediates the relationship of peer support, supervisor support and training transfer (H5, H6). Environmental factors like supervisor and peer support also motivate trainees to transfer their learned skills. In this regard, supervisor support ( $\beta = 0.145$ ) and peer support ( $\beta = 0.125$ ) also motivate trainees to transfer their learned skills and influence the training transfer through transfer motivation. The results of this study's  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 1.96$ ) indicate that transfer motivation mediates the relationship between peer support and training transfer (H5). In other words, peer support directly influences transfer motivation (effect = 0.125). The  $p$ -value ( $p < 0.05$ ; Garver & Williams, 2009;  $p = 0.049$ ) indicates that the path (peer support positively related with transfer motivation) is statistically significant.

The results of this study indicate that transfer motivation mediates the relationship between supervisor support and training transfer with the  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 2.156$ ) and therefore supports H6. In addition, the results explain that supervisor support positively influences transfer motivation (effect = 0.145) and  $p$ -value ( $p < 0.05$ ; Garver & Williams, 2009;  $p = 0.031$ ). The path (supervisor support positively related with transfer motivation) is statistically significant.

### **Instrumentality**

Intrinsic and extrinsic rewards (instrumentality) suggest that individuals are poorly motivated when they do not believe that training will lead to improvement in their work, career, or compensation (Clark et al., 1993; Facticeau et al., 1995; Noe, 1986). If trainees perceive training outcomes in terms of extrinsic rewards like money, status, and perceived external

pressures, they may work hard but will make more mistakes or errors because their goal is to get financial rewards. If instead trainees view training outcomes in terms of intrinsic rewards such as greater self-determination, task involvement, competence, and interest, they will perform very well.

Condry (1977) indicated that individuals who prefer material rewards such as raises or bonuses may work hard but may make more mistakes and their work will be of low quality. One possible reason behind this perception is that when trainees are involved in training activities because of personal satisfaction or to improve their performance, their motivational level can be higher. In other words, when forces that drive motivation (intention to improve performance, self-satisfaction) become part of the individual's mind-set, that person is more motivated to transfer the skills learned to the job. But if the basic intention of trainees is just to get a promotion or a raise, their motivation can be low because they are not seeking to improve their performance. Furthermore, trainees' perceptions of training output can be different. Researchers need to empirically test which kinds of rewards are important for employees.

The hypothesis developed based on the research framework explains that transfer motivation mediates the relationship between instrumentality and training transfer (H7). Instrumentality (intrinsic rewards) not only motivates trainees to transfer their learned skills ( $\gamma = 0.142$ ) but also helps them retain and then transfer their new skills ( $\gamma = 0.152$ ). Therefore, when trainees retain more of the skills they learned, the more these skills will transfer to the job ( $\gamma = 0.207$ ).

The results of the study also indicated that instrumentality exerts a significant direct effect on training transfer mediated by training retention and transfer motivation, but has a stronger indirect effect through training retention as compared to transfer motivation. In addition, the more that trainees are satisfied with the training activities, the more motivated they are to transfer the new skills ( $\beta = 0.105$ ). Subsequently, when trainees are motivated to transfer the skills they learned, the transfer level is higher ( $\beta = 0.418$ ).

The results of this study's  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 2.794$ ) indicate that transfer motivation mediates the relationship between instrumentality (intrinsic rewards) and training transfer. The results also explain that instrumentality positively influences transfer motivation (effect = 0.142) and  $p$ -value ( $p < 0.05$ ; Garver & Williams, 2009;  $p = 0.005$ ). In addition, the study  $p$ -value ( $p < 0.05$ ; Garver & Williams 2009;  $p = 0.005$ ) provides evidence and explains that instrumentality is positively related to training retention (effect = 0.152).

### **Training Retention**

Trainees cannot effectively transfer their training until and unless they retain what they have learned. Ford (2009) argued that getting learners involved is the key to retention and application of learned skills. Velada et al. (2007) suggested that "training retention is similar to the

cognitive ability and is the degree to which the trainee retains the content after training is completed.” In the training transfer process, many factors affect training retention. In this regard, May and Kahnweiler (2000) say that many factors influence employees’ learning retention, including transfer design, trainee characteristics and environmental factors, and instrumentality.

This study suggests that training retention mediates the relationship between instrumentality and training transfer (H8). Similarly, instrumentality directly influences training retention (effect = 0.152) and transfer motivation (effect = 0.142), which leads to transfer motivation. These findings suggest that training retention plays equal roles as transfer motivation to influence the training transfer. The result of hypothesis H8 indicates that training retention mediates the relationship between instrumentality or intrinsic rewards and training transfer  $t$ -value ( $t = 4.086, t > 1.96$ ; Hair et al., 2007) and influences training transfer (effect = 0.207). The results also indicate the positive relationship between training retention and instrumentality  $p$ -value ( $p = 0.001, p < 0.05$ ; Garver & Williams, 2009). Therefore, training retention works as a mediating factor between instrumentalities (Intrinsic rewards) and training transfer.

### **Affective Reaction and Transfer Motivation**

Affective reaction, or the subjective evaluations learners make about their training experiences (Sitzmann et al., 2008), are the primary means by which organizations evaluate training programs (Sugrue & Rivera, 2005). Although affective reactions are frequently assessed in practice, they remain poorly understood (Sitzmann et al., 2008). Ruona et al. (2002) believe that affective reaction measures or measures of trainee satisfaction remain one of the most overused methods of evaluation in the field of human resource development. In fact, research has shown no correlation between affective reaction and other training outcomes (Alliger & Janak; 1989; Dixon, 1990; Noe, 1986; Warr & Bunce, 1995). Hence, the focus on the affective reaction measure has not been clear in past studies. Thus, it is suggested that affective reaction (utility or affective) may be affected by other training outcomes through motivation, whereby a person is motivated to show a specific behavior when the person expects this behavior to help him or her achieve goals, as proposed by Vroom (1964).

This study suggests that affective reaction mediates the relationship between perceived content validity and transfer motivation (H9), and transfer motivation mediates the relationship between affective reaction and training transfer (H10). The results indicate that perceived content validity influences transfer motivation through affective reaction. In other words, affective reaction plays a mediating role between perceived content validity and transfer motivation. Therefore, when trainees believe that they can improve their performance, they will be more motivated to transfer the skills they have acquired ( $\gamma = 0.291$ ). Furthermore, training content has a significant direct effect on affective reaction (effect

= 0.516) and performance self-efficacy (effect = 0.379) and a strong direct effect on affective reaction as compared to performance self-efficacy.

The results of this study support H9 and explain that affective reaction mediates the relationship between perceived content validity and transfer motivation  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 9.098$ ). The results of this study's  $p$ -value ( $p < 0.05$ ; Garver & Williams, 2009;  $p = 0.036$ ) also provide evidence and indicate that affective reaction positively influences transfer motivation (effect = 0.105). The results of this study's  $t$ -value ( $t > 1.96$ ; Hair et al., 2007;  $t = 2.097$ ) supports H10 and explains that transfer motivation mediates the relationship between affective reaction and training transfer. The  $p$ -value results ( $p = 0.001$ ;  $p < 0.05$ ; Garver & Williams 2009) also provide evidence and explain that transfer motivation positively influences training transfer (effect = 0.418).

## Discussion and Future Research Directions

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Training transfer is an important issue among training and development activities. Training professionals have been investigating the factors that are associated with trainees' effectively transferring skills they learn. Organizations have been investing millions of dollars to upgrade their employees' skills in order to meet the challenges of the 21st century. In contrast, researchers have been trying to build on the literature on training transfer in order to provide strong theoretical grounding to training professionals. This study is part of that effort.

The concept of training retention is similar to cognitive ability and explains the degree to which trainees retain content after they complete training (Velada et al., 2007). Training transfer can be maximized if trainees retain the skills they have learned. This study indicates that training retention is positively related to training transfer and mediates the relationship between instrumentality (intrinsic rewards) and training transfer. Trainee may transfer the learned skills with the intention of improving their performance or getting intrinsic or extrinsic rewards. After completing the training, trainees should remember the training activities for longer periods and use the new skills whenever it is required of them on the job. Training retention should be an ongoing process for trainees.

The concept of training retention has been underestimated in past research. This study has examined the role of training retention in the training transfer process and suggests that future research could explore the intention of trainees to retain training. It is only assumed in this study that retention is meant for transfer but there could be other reasons, such as increasing employability, personal satisfaction, self-development, or peer pressure.

This study empirically tested the role of learner readiness in the training transfer process and found that learner readiness positively relates to transfer motivation, which further influences training transfer. In other



words, learner readiness has an indirect effect on training transfer mediated by transfer motivation. Trainees should have the basic skills needed to perform the training activities and maximize their learning. For example, if a trainee is going to learn how to operate accounting software, he or she needs to know how to use a computer. When trainees have the basic skills to perform training activities and basic knowledge about what kinds of activities they will perform during training, they are mentally prepared to participate in training activities and their learning level will rise.

Among the environmental factors, the results of this study indicated that peer and supervisor support influence training transfer mediated by transfer motivation. This study suggests that peer and supervisor support should be differentiated with reference to type of support and its timing. This study investigated peer and supervisor support after the training and explained that managers should carefully examine what kind of support trainees need from their peers and supervisors. This study has shed new light and proposes that trainees may need different types of support from peers and supervisors before, during, and after the training. Future research should highlight the kind of support at each stage (before, during, and after the training) that is needed and empirically test the relationships with other training transfer factors. An understanding of environmental factors may lead to training effectiveness and improve employee performance after training. In addition, future research should examine the impact of training effectiveness on organizational performance. This work will strengthen the literature on training transfer. Work explaining the importance of environmental factors (peer and supervisor support) within the context of training effectiveness will be helpful.

This study explained the dual role of perceived content validity in the training transfer process, which to our knowledge has not been highlighted in past research. Perceived content validity develops positive affective reaction and increases trainees' performance self-efficacy. When trainees see that the content of the training is similar to the work they do, they react more positively toward the training activities and their performance self-efficacy level increases. This finding suggests that knowledge is key in training transfer and that related knowledge that is explicit in terms of similarity between training content and the job boosts trainees' confidence of using what they have learned to increase their performance. Future studies should examine the relationship between trainees' perceptions of content validity and job performance to help substantiate the role of perceived content validity in the training transfer process.

In past work, less attention has been given to highlight factors that develop trainee performance self-efficacy. This study has focused on trainee performance self-efficacy and affective reaction and highlighted factors that influence trainees' efficacy level and affective reaction. For example, one factor that influences performance self-efficacy is transfer design. The results of this study indicate that perceived content validity and transfer design work together and influence trainees' performance

self-efficacy. The results also indicate that performance self-efficacy is positively related to transfer motivation. In other words, performance self-efficacy has an indirect effect on training transfer mediated by transfer motivation. This supports the notion that explicit related knowledge helps boost trainees' confidence in training transfer and perceive it to boost their performance as well. Further exploration of this explicit-related knowledge in training is a topic for future research in terms of identifying its conceptual and operational definitions and establishing an instrument to measure it.

The role of affective reaction has not been clear in previous work. The results of this study indicate that affective reaction plays a mediating role between perceived content validity and transfer motivation. When trainees feel good about or satisfied with the training program, they likely perceive the training content as relevant, and transfer is more likely to take place. Hence, satisfaction with training plays a role in training transfer. However, factors that lead to this satisfaction are not addressed in this research, so it remains another direction for future research. Therefore, there is a need to highlight the factors that develop positive affective reaction. In the future, researchers should highlight the relationship between affective reaction and other levels of the Kirkpatrick model like learning and transfer.

This study has investigated the relationship between intrinsic rewards and training retention and found that when trainees perceive training activities as a source of receiving intrinsic rewards, they retain more skills and transfer of learning occurs. The results of this study also indicate that intrinsic rewards influence training transfer mediated by training retention and training transfer. These intrinsic rewards may develop a positive affective reaction, another avenue for future research. This finding suggests that intrinsic rewards also reinforce retention and promote transfer. Intrinsic rewards tied to training could also act as a form of positive perception toward training.

## Implications

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As part of a cross-sectional study, this study helps build on the existing training literature by explaining the role and purpose of different factors that affect the training transfer process. It thus sheds new light and proposed different relationships between the variables and their effects on training transfer. A clear understanding about these factors will help researchers, human resource development (HRD) practitioners, and training professionals to design effective training programs. The findings of this research will be helpful for HRD professionals to develop effective strategies in order to maximize training transfer and effectively manage training programs. The findings also explain the roles of each stakeholder (trainers, trainees, supervisors, peers, and top management), which will lead to maximizing training transfer at work place.

The findings of this research suggest that supervisors should support trainees before, during, and after training. This supervisor support before training may encourage trainees to realize how training activities can help them to improve their performance. During the training, supervisors may support trainees as they work on the training activities and motivate them to maximize their learning. After training, supervisors should set goals for trainees to transfer the skills they have learned. In addition, they should discuss with trainees how to apply the new skills on the job. When supervisors play this role properly, training transfer can increase.

This study has suggested that peers also can play a role to maximize training transfer. They should encourage trainees to participate in training activities and help trainees apply the new skills in order to improve their performance and achieve organizational tasks.

Supervisor support and peer support increase trainees' transfer motivation level. Therefore, trainers should engage trainees' supervisors and peers in the training transfer process and explain their role to increase training transfer. Trainers should discuss with supervisors and peers their role and guide them to play their role effectively in order to enhance training transfer.

Trainers should give importance to the content of the training. When trainees perceive that the content of the training is similar to their actual work, their efficacy level increases and they react more positively toward training activities. Therefore, the content of the training is an important consideration for trainers to maximize training transfer.

Another important consideration for trainers and training professionals is that learners should be ready to participate in training activities. The findings of this study suggest that before starting a training program, trainers should make sure that the trainees have the basic skills and knowledge required to participate in training activities.

Transfer design and content validity play important roles in the training transfer process. Based on the findings, we suggest that trainers should pay attention to transfer design and training content in order to improve trainees' performance self-efficacy. Trainers might use some other techniques that could improve trainees' transfer motivation level that ultimately leads to increase training transfer.

Finally, HRD professionals and trainers should explain to trainees how to apply their new skills on the job. This practical exposure increases trainees' efficacy levels and leads to more effective training transfer. In addition, top management, trainers, and supervisors should appreciate, encourage, and motivate trainees to participate in training activities

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