

## The Effects of Training Transfer on Training Program Evaluation and Effectiveness of Training Program

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**Abstract.** Evaluation of training programs is an important aspect in determining the effectiveness of training programs conducted by an organization. Two dimensions of training program evaluation namely response and learning are used as variables in this study. The design of this study is in quantitative, based on the survey method. The study was conducted at the Tun Abdul Razak Library, one of the Public Institutes of Higher Learning in Malaysia. A total of 288 respondents consisting of library staff were involved in this study. Data analysis was performed using SmartPLS Software (SmartPLS-SEM) using multivariate analysis technique Structural Equation Modeling (SEM). The results of the study found that there is a significant relationship between the evaluation of training programs on the effectiveness of training programs. This study also found that training transfer acts as a mediating variable between training program evaluation and training program effectiveness. This study will be able to be used by the human resource management division in implementing the evaluation of training programs as one of the effectiveness in planning training programs.

**Keywords:** Training Program Evaluation, Training Transfer, Training Program effectiveness.

## 1 Introduction

The role of human resource development and management in an organization plays a very important role, and one of those functions is training (DeSimone et al., 2002; Tannenbaum & Yukl, 1992). Training is also a planned learning process and is done with the aim of ensuring that employees can solve current or existing problems in the future; in accordance with their capabilities, developing employee competencies and developing competitiveness in the future (DeSimone et al., 2002; Ibrahim, 2001; Kraiger et al., 1993). According to Milhem et al. (2014) the purpose of training in a work environment is to develop students' abilities and meet the current and future needs of the organization.

Bowes (2008), defines that training as an investment in productivity and can retain employees by ensuring career development and long-term job satisfaction. The training that has been provided by the organization should be valued by the organization. It also aims to determine the investment that has been spent is an investment that gives a good return or not to an organization.

There are various interpretations related to the effectiveness of the training that has been done i.e. effective training is considered when the training is well received, successfully provide relevant knowledge and skills to the participants and confidence to apply it in the workplace (Kirkpatrick & Kirkpatrick, 2016). The ability of the training program will be able to change the behavior of employees, increase productivity and improve the performance of work and organization (Chiaburu & Marinova, 2005), evaluate the results of training experienced by a participant based on the reaction (trainee limit area). Training assessment ensures that trainees are able to complete their learning in their respective workplaces or their daily work (Nagar, 2009).

The transfer or transition of training is defined as the extent to which trainees apply the knowledge, skills and behaviors acquired in training to their work (Wexley & Latham 2002). Training transfer is to re-achieve the investment targets that have been made by the organization in the training program (Nijman et al., 2006). Training transfer occurs after the training program has ended (Goldstein & Ford, 2007) and most importantly has a relationship in determining the effectiveness of training and educational programs (Kasim & Ali, 2011).

## 2 Literature Review

*The relationship between training program evaluation and training program effectiveness.*

Response is an important factor in the evaluation stage. The American Society for Training and Development (ASTD) (2001) states that 77 percent of organizations take data related to trainee responses, 38 percent information related to measuring aspects of learning, 14 percent change behavior and 7 percent related to training outcomes

(Van Buren, 2001). Ruona et al. (2002) stated that a good and reliable trainee response shows the effectiveness of the training that has been followed and is also able to show a good effect on the organization. According to Wang and Wang (2006), the evaluation of the response is more realistic if obtained from the feedback of the trainee himself. According to Iyer, Pardiwalla and Bathia (2009), the emphasis on the Kirkpatrick model is important to understand the need for training evaluation to be performed. Every organization needs to review investment in training, and the evaluation of training programs needs to be done to ensure that the justification of training investment provides good returns to the organization or vice versa as well as the training process can also be improved.

The concept of self-efficacy in this study is based on social learning theory. According to this theory, humans learn by looking at others and believing in others. This theory has credibility and knowledge (Bandura, 1986). The development of attitudes that show a positive perception (self-efficacy) in training and emphasis on post-training performance is necessary and can increase the effectiveness of training (Billari et al., 2009). Al-Eisa et al. (2009) stated that trainees with high confidence will apply the new knowledge and skills they acquired during on-the-job training. The way of learning depends on the level of education and skills of the trainees because these two aspects will help determine the effectiveness of the training program (Abdullah & Mohammad, 2017).

Based on the literature review of the above study, the hypotheses to be tested are:

H1: There is a positive relationship between Training Program Evaluation (Response) with Effectiveness of Training Programs, and

H2: There is a positive relationship between Training Program Evaluation (Learning) with the Effectiveness of the Training Program.

*The relationship between training program evaluation, training transfer and training program effectiveness.*

There are several studies showing that supervisor support aids in the transfer of training Clark et al., 1993; Gregoire et al., 1988; Nijman et al. 2006; Chiaburu et al., 2010; Bhatti et al., 2013; Bhatti et al., 2014). According to Chiaburu and Tekleab (2005) and Al-Eisa et al. 2009) stated that supervisors support trainee motivation as supervisors transfer new skills to the workplace. There are examples where supervisors play a role as intermediaries (mediators). Nijman (2004) states that the support of supervisors as a liaison can change the situation in the workplace, and provide support to trainees provided the training program can be improved.

Good communication management methods by supervisors in the workplace will produce successful outcome in a higher understanding and also produce successful outcomes among employees (Mesmer-Magnus et al., 2018). Supervisors use good means of communication to increase job satisfaction among employees, especially the relationship between the head and the employee (Robert et al. 2016). According to Meyer & Allen (1991) stated that good communication among supervisors also increases employee confidence in organizational commitment because employees feel

comfortable with the situation at work. Humor is the best method in Communication Management (Cooper et al., 2018) and supervisors use appropriate communication management to overcome work barriers (McManus and Delany, 2007) and build effective working relationships (Mesmer-Magnus et al., 2012).

Content validity refers to the level at which the trainee evaluates the content of the training as accurately reflecting the work requirements (Devos et al., 2007). Trainees will maximize the transfer of training for training content similar to workplace tasks. The content of training will influence the transfer of training (Nikandrou et al., 2009). Lim and Johnson (2002) suggest that the design and content of training and teaching methods must be related to the transfer of objectives with the aim of transferring learning can be realized. In addition, trainees also see new knowledge and skills related to their job performance will be enhanced (Baldwin and Ford, 1998; Clark et al. 1993). Kauffeld and Lehmann-Willenbrock (2010) found that training transfer can enhance the atmosphere in the real workplace by applying training content after training.

Self-efficacy is based on social learning theory. Many researchers focus on the relationship between self-efficacy and other variables such as motivation transfer and training transfer. These researchers confirm that self-efficacy can enhance training transfer (Chiraburu and Marinova, 2005; Kirwan & Birchall, 2006; Latham & Frayne, 1989; Saks, 1995; Mathieu et al., 1992; Tannenbaum et al., 1991; Velada et al., 2007). Self-efficacy is also related to training transfer variables through trainee intention variables with the aim of acquiring knowledge (Mullin et al, 1998).

Some researchers stated that the trainees' response focused on the organization and content of the training program conducted (Russell et al., 1985; Noe & Schmitt, 1986; Baldwin et al., 1991), in addition, this response focused on other places, namely trainee satisfaction on the use workplace training (Latham & Saari, 1979; Wexley & Baldwin, 1986). Alliger et al. (1997) found that utility reactions (training content for the workplace environment) are more closely related to transfer than affective reactions (overall satisfaction with training). According to some researchers found using classification by Alliger et al. (1997) stated that there is a relationship between response (utility and affective) and training outcomes (Warr et al., 1999; Morgan & Casper, 2000).

The results of the literature review above have been used as a guide in building the conceptual framework of the study as shown in Figure 1.

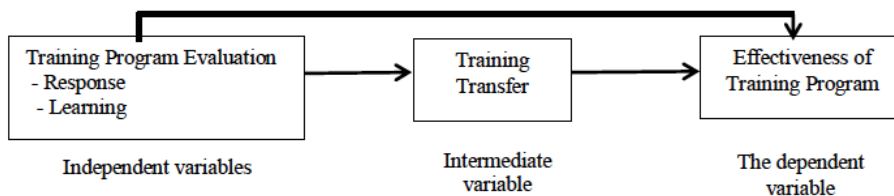


Fig. 1. Training Transfer as a Liaison Variable between Training Program Evaluation (Response and Learning) and Training Program Effectiveness.

Based on the conceptual framework of the hypotheses to be tested are:

H3: Training Transfer as an intermediary variable between Training Program Evaluation (Response and Learning) and the Effectiveness of the Training Program.

### **3 Research Methodology**

The design of this study is quantitative based on the survey method. The survey method was done by using a questionnaire as the main procedure in the collection of study data. The data obtained is primary data including Training Program Evaluation which consists of several dimensions of the evaluation variables of the training program, namely Response and Learning. Apart from that, aspects related to the effectiveness of the Training Program and Training Transfer are also stated in the questionnaire. This questionnaire contains several options of answer questions provided to be answered by the respondents. According to Lancaster (2005) stated that the questionnaire has been widely used and good in terms of data collection especially involving a large number of respondents.

Before the questionnaire was distributed, the researcher obtained the consent and data collection rules from the head of the Librarian, Tun Abdul Razak Library. In this study, stratified random sampling technique was used to distribute the questionnaire to 483 respondents consisting of 122 management and professional group staff and 361 support group staff. This study is limited to the Library Services Scheme group only. Of the above, 288 questionnaires were completed and returned to the researcher.

Next, data analysis is done using multivariate analysis techniques Structural Equation Modeling (SEM) According to Hair, Sarstedt, Ringle and Mena (2012), basic component combination analysis of factor analysis, multiple regression, canonical correlation and simultaneous route analysis can also be performed using SEM techniques. According to Hair, Ringle and Sarstedt (2011) data analysis techniques using PLS-SEM is a technique that is able to model the concept of study simultaneously and comprehensively. According to Hair, Ringle and Sarstedt (2011) also PLS-SEM is involved in the evaluation of measurement model (Measurement model) and Structural model (Structural model). Reflective and formative measurements are measurements found in the measurement model in PLS-SEM. The direction of cause and effect formed as a result of independent variables produces a Reflective Measurement Model. Formative measurements are the result of indicators or study items on independent variables. Aspect of prediction (prediction) that refers to variance and is a data analysis technique emphasized by PLS-SEM. The change in Rubah variance is the change of  $R^2$  in the structural model. Meanwhile, the t value refers to the significant level and the critical t value in bootstrapping is used as an indicator.

## 4 Findings

### *Findings of Partial Least Square- Structural Equation Model (PLS-SEM) Model Evaluation Study*

Criteria for conducting PLS-SEM analysis need to be done to ensure that the PLS-SEM criteria have met the required conditions before hypothesis testing is conducted.

### *Reflective Model Measurement Assessment*

Instrument reliability analysis is done before the analysis for reflective model evaluation is done which involves several features of the analysis findings, namely the results of the analysis of the reliability of external load measurement (Factor Loading), the findings of internal consistency analysis (Composite Reliability, CR), and the findings of the average analysis of extracted variance (Average Variance Extracted, AVE).

Findings of the study results for the reliability of the Cronbach's Alpha dimensional instrument, The program evaluation variable for response is 0.88 and learning is also 0.88, while the training transfer variable is 0.94. Cronbach alpha values exceeding 0.60 are relevant and acceptable studies (Hair et al, 2010). According to Chua (2012) stated that the cronbach alpha reliability score value of 0.65-0.79 is moderate and the cronbach alpha value of 0.80-0.95 has a high level of reliability.

The results of the internal consistency analysis (Composite Reliability, CR), for the dimensions of the program evaluation variables for response and learning are the same at 0.91 and the CR value of the training transfer variable is 0.95. CR values with a level value of 0.70 to 0.90 and above have a good level and are acceptable in research (Gefen, Straub and Boundreu, 2000). Average Variance Extracted (AVE), is the average value of all items against their respective constructs (Hair et al, 2014). To achieve convergent validity, each construct must have a value of  $\geq 0.50$  for the specified variance (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 2017). The results of the analysis of extracted average variance (Average Variance Extracted, AVE), for the dimensions The program evaluation variables for response and learning are 0.59 and 0.63 values respectively while the AVE value for the training transfer variable is 0.73.

### *Model Strength Assessment*

Model Strength Assessment (*Good of Fitness*) needs to be done first before conducting a structural model assessment. The criteria for evaluating the strength of the model is to look at the value of SRMR (*Standardized Root Mean Square Residual*). SRMR is the difference between relationship observation and the implicit relationship in the model. According to Hu and Bentler (1999) SRMR values less than  $\leq 0.10$  or  $\leq 0.08$  can be considered as a strong model. According to Henseler et al. (2014) SRMR value less  $\leq 0.08$  has a strong model and this SRMR value can help avoid less robust model (Henseler et al., 2014). the result of the value obtained for the

model strength and the model strength value obtained in this study that is for the SRMR value is 0.051 which is less than  $\leq 0.08$ .

#### *Formative Model Measurement Assessment*

In this study, the variables of the effectiveness of the training program is a formative model and this model needs to be evaluated before being tested with variables or reflective dimensions. To evaluate this formative model there are three procedures as stated by Hair et al. (2014) that is to determine the convergence validity, test the validity of the coherence between the measurement and evaluation of validation (significance) and relevance (relevance) of formative model items.

To determine the convergence validity in this study, the redundancy analysis process needs to be carried out and Redundancy analysis can be done i.e. formative constructs are converted to exogenous constructs with the aim of predicting the same constructs by making them as reflective items or as a global single item (Hair et al. 2017). According to Hair et al. (2017) the path coefficient value is 0.70 and above while for R bagi the minimum value is 0.50. The results of Redundancy Analysis conducted on the formative model in this study found that the value for the path coefficient is 0.869 and the value of  $R^2$  is 0.756.

The evaluation of the value of collinearity is also done in the formative model and the verification of the value of the collinearity refers to the relationship between the items in the evaluation of the formative model. According to Hair et al., (2014) stated the relationship between two (2) is known as Collinearity. Variance Inflation Factor (VIF) is used to see the value of collinearity and the value of  $\geq VIF 5$  or more has a problem with the value of collinearity (Hair, Ringle & Sarsedt, 2011) while the value of  $\geq VIF 3.3$  or more has a problem of collinearity issues as stated by Diamantopoulos and Siguaw (2006). The results of the analysis findings for the value of Collinearity in for formative models are between is between 2,156 to 4,099. Thus the collinearity value of formative items can be used because VIF values  $\leq 3.3$  (Diamantopoulos & Siguaw, 2006) and  $\leq 5.0$  (Hair, Ringle & Sarsedt, 2011).

In this study, the evaluation of significance and relevance is an evaluation of the formative items that need to be done. Weighting values are an important factor in determining the contribution of formative items. Outer Loading value (Outer Loading) can be used to maintain formative items by referring to the bootstrapping result i.e. the value of external load is  $\geq 0.5$  and the value of  $t = 1.645$  (Hair et al., 2017). The results of the analysis in this study found that all formative items were maintained because the value of external load exceeds 0.50 and the value of  $t$  is more than 1.645 and also shows the results of significant relationship of variables.

#### *Model Structure Assessment*

One of the structural evaluations of the model performed is the verification of the value of VIF (Variance Inflation Factor) so that no collinearity issues arise between two or more variables. The results found that the values for the dimensions of the evaluation variables of the training program for response and learning are 2.97 and 3.36 respectively. and both VIF values are less than  $\leq 5.0$  (Hair, Ringle & Sarstedt, 2011). Meanwhile, the values for the score determinant ( $R^2$ ) in the training program evaluation variables against the training program effectiveness variables

were 0.98 (high) and 0.65 (medium) respectively. Hair et al. (2017) explained that R nilai values = 0.75, 0.50 and 0.25 respectively have strong, medium and weak predictive accuracy levels. The results of the study showed that the contribution of the effect size of the effect size ( $f^2$ ) of the response and learning dimensions on the endogenous variables were 0.03 (moderate) and 0.196 (moderate) respectively while the contribution of the training transfer variable on the endogenous variable was moderate with a value of  $f^2$  0.03. According to Cohen (1998), the values of  $f^2 = 0.35$ , 0.15 and 0.02 respectively show strong, moderate and weak.

*Results of the Test Results of the Hypothesis of Direct Relationship Effects*

The direct effect hypothesis test was performed after the analysis was performed on all PLS-SEM criteria were achieved and met as explained in detail in the previous section.

*H1: There is a positive relationship between Training Program Evaluation (Response) with Effectiveness of Training Program*

The results of the analysis that has been done show that the Response Dimension for the Training Program Evaluation variable has a positive effect on the Effectiveness of the Training Program that is a significant level value is  $p = \leq 0.05$  with a value of  $t = t = 2.127$ . Significant level values have a direct relationship is at the level of or less than five percent ( $\alpha = \leq 0.05$ ) for one-tailed test type (one-tailed test, t) and t value is 1.645 or more (Hair et al., 2017).

*H2: There is a positive relationship between Training Program Assessment (Learning) and Effectiveness of Training Program*

The results of the analysis that has been done show that the Learning Dimension for the Training Program Evaluation variable has a positive effect on the Effectiveness of the Training Program that is a significant level value is  $p = \leq 0.05$  with a value of  $t = t = 5.205$ . Significant level values have a direct relationship is at the level of or less than five percent ( $\alpha = \leq 0.05$ ) for one-tailed test type (one-tailed test, t) and t value is 1.645 or more (Hair et al., 2017).

*Results of the Impact of Intermediary Training Transfer Variables on Training Program Evaluation Relationships (Response and Learning) and Training Program Effectiveness*

Analysis can be done on Training transfer variables as a mediator because there is a significant positive relationship Exogenous variables Training Program Evaluation (Reaction and Learning) to endogenous variables of Training Program Effectiveness as described earlier. According to Baron and Kenny (1986) there are three levels of testing the effects of intermediate variables namely first test the influence of the direct effect of exogenous variables on endogenous variables, second test the influence



of the direct effects of exogenous variables on endogenous variables and third test the influence of direct effects of intermediate variables on endogenous variables.

Variance accounted for- VAF is performed if there is a significant direct effect of exogenous constructs or variables on constructs or endogenous variables (Baron and Kenny, 1988). VAF values suggested by Hair et al. (2016) to determine the status of variables as full, partial or no intermediaries. VAF value less than 20% indicates no mediation (no mediation), for VAF value over 20% and less than 80% is categorized as partial mediation (partial mediation) and VAF value over 80% indicates full mediation (Hair et al., 2017).

*H3: Training Transfer as a mediating variable between Training Program Evaluation (Response and Learning) and Training Program Effectiveness*

The findings show that the VAF value for training transfer as a mediator between the response dimension and the effectiveness of the training program is 61.1%, while for the transfer of training as a mediator between the learning dimension and the effectiveness of the training program has a VAF value of 62.5%. The VAF value of training transfer between training program evaluation variables and training program effectiveness is 44.1%. Therefore, the effect of training transfer as an intermediary variable on the evaluation variables of the training program and the effectiveness of the training program is partial mediation (partial mediation) because the VAF value is more than 20% and less than 80%. (Hair et al., 2017).

## 5 Conclusion

Response is an important aspect in the evaluation of training programs conducted. The evaluation of the response is even more realistic if the evaluation is obtained from the feedback of the trainees themselves (Wang and Wang, 2006). Based on the findings of the hypothesis of the response dimension of the value of  $p = \leq 0.05$  ( $\beta = -0.028$ ,  $t = 2.127$ ) and it was found that the response dimension has a direct impact on the effectiveness of the training program on the organization.

The concept of self-effectiveness is based on the theory of social learning and according to this theory human beings learn by looking at others and believe this person (model) has credibility and knowledge (Bandura, 1986). For the findings of the learning dimension, it is found that the value of  $p = \leq 0.05$  ( $\beta = 0.080$ ,  $t = 5.205$ ) as stated earlier shows that there is a positive significant relationship of the learning dimension to the effectiveness of the training program. According to Al-Eisa et al. (2009) stated that trainees with high confidence will apply the new knowledge and skills they acquired during training and will be used in the workplace. The way of learning depends on the level of education and skills of the trainees because these two aspects will help determine the effectiveness of the training program (Abdullah & Mohammad, 2017).

The results of the hypothesis show that the effect of training transfer between the evaluation of training programs and the effectiveness of training programs has

contributed to the VAF value between 20 percent to 80 percent that occurs in the Library at Universiti Teknologi Mara. The results of this hypothesis are supported by Nijman (2004) states that the support of the supervisor as a mediator (mediator) can change the situation in the workplace, and the supervisor provides support to the trainee provided the training program can be improved. Good communication management methods by supervisors in the workplace will result in higher understanding and good results among employees (Mesmer-Magnus et al., 2018). Supervisors use good means of communication to increase job satisfaction among employees, especially the relationship between the head and the employee (Robert et al., 2016). According to Kauffeld and Lehmann-Willenbrock (2010) also found that the transfer of training can improve the atmosphere in the real workplace by trying the content of training after training.

Therefore, the staff who have undergone training at PTAR Shah Alam need to share the skills, knowledge and attitudes acquired with friends at their workplace to further strengthen everything related to the training obtained.

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