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Learning Transfer Exploration Model from Skill Institute to Workplace, PLS-SEM Approach

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Abstract: Skills and job mismatch issues have become common and recurring issues in Technical and Vocational Education Training (TVET). This issue is associated with the transfer of learning that involves various factors such as the area of training, certification level, curriculum, instructors, facilities and resources and industry recognition. In line with the Baldwin & Ford model, learning transfer involves three major factors such as the trainee's characteristics, the training design and working environment. Therefore, identify the factors which contribute to the effective transfer of learning is necessary. This study attempts to identify which factors are contributing to learning transfer based on National Occupational Skill Standard (NOSS) system in skill institutes in Malaysia to workplace. This is because the lack of relevant studies related to the learning transfer on the NOSS system and at once makes it difficult to emphasize the factors to be considered for effective transfer of learning. The design of the survey study through the distribution of questionnaires to 309 Malaysian Skills Certificate trainees was done to generalize the study findings. This study used the Partial Least Squares-Structural Equation Modeling (PLS-SEM) tool to validate the model. PLS-SEM is choose because it can predict and explain constructs target. Then it can explore the relationship between the construct. Besides that, PLS SEM is chosen because this method can be done on complex structure equation model that consists more constructs and indicators. PLS-SEM can also control both a reflective and formative constructs. Findings indicate that work environment and training design positively influences learning transfer be represented by generalization and retention construct. The findings provide useful insight and information regarding the learning transfer that correlate with mismatch issues that policy makers, training provider, employers and trainees need to consider to produce highly skill workers subsequently completed this skills mismatch issue.

Keywords: Learning transfer, NOSS, PLS-SEM, trainee characteristic, training design, work environment, virtual learning spaces

1. Introduction

Efficient learning transfer in skills training is necessary to produce a highly skilled workforce. It can also ensure that the issue of skills mismatch and employment can be solved by involving several factors such as the trainee's characteristics, the training design and the work environment. However, research related to the learning transfer should be done in the context of skills training system in Malaysia despite learning transfer factors have been identified by

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previous researchers. This is because the learning transfer depends on a variety of environments. This is supported by Baldwin et al., (2017) learning transfer is not fixed and may vary depending on job and training environmental conditions. So the study on skills training environment in Malaysia involving the National Occupational Skill Standard (NOSS) is required. In addition, the need for continuously research, there may be new factors that influence the learning transfer (Kraiger & Ford, 2020; Chauhan, Ghosh, Rai & Kapoor, 2017; Yaghi & Bates, 2020). This could happen with technology changes so rapidly that in turn impact on the changing the learning at all levels.

There are some issues regarding the matching of skills and training for graduates where the skills should be emphasized because the percentage of graduates involved in the job corresponding to the field of training is low. This is because trainees are less competent in doing the work and the skills acquired are not the same as the wishes of the employer. Thus, the transfer of learning is relevant in training institutes to ensure that there is a similarity between the training taught and the needs of the real workplace thus ensuring the production of a skilled workforce.

Therefore, exploratory study was conducted to identify the aspects required for the learning transfer in the context of skills training system that uses NOSS as guidelines in Malaysia. This identification explains transfer of learning is not fixed and varies according to the environment. This is evidenced by the existence of several new aspects that arise as a result of this technological change (Ruhizan et al., 2013; Ridzwan et al., 2014). To further strengthen these findings, the questionnaire was distributed to generalize these findings as well as to predict and find the relationship of each construct. However, the focus of this paper is to look at ways of assessing the measurement model analysis by looking at the validity and reliability assessments. The paper will adopt the Partial Least Square (PLS) and structural equation modeling techniques to assess the goodness of measures of constructs used in a model to examine the learning transfer within the context of the Malaysian skill training based on NOSS system. This study is necessary in ensuring that the factors obtained during the exploration study are through a process of validity and reliability in addition to being able to identify the relationship that exists for each factor. This can indirectly help stakeholders in emphasizing these factors in ensuring the effectiveness of Training transfer.

The next section of this paper discusses the research context and exploration model in relation to existing literature on information sharing in learning transfer. This is followed by an explanation of the research method used and an assessment of measurement model, namely, the construct validity, convergent validity, discriminant validity and reliability of the constructs. Lastly the paper concludes by suggesting to new researchers the significant types of information needed for a holistic assessment of goodness of measures in their studies.

2. Research Contexts and Research Model

This paper constitutes part of a larger research, which examined learning transfer in Malaysian skill institutions that involve in NOSS system. Therefore, the constructs that include in learning transfer in skill institutions are learning transfer, trainee characteristic, training design, work environment and virtual learning spaces (Nur, Ruhizan & Bekri, 2015). The explanations for all the constructs are state below:

2.1 Learning Transfer

Term of training transfer and learning transfer commonly used in tandem in the literature (Testers, Gegenfurtner, & Brand-Gruwel, 2020). However, in short, it gives a different meaning. Testers et al., (2020) explains training transfer is sub-set of the learning transfer. This means the training transfer of part of the learning transfer. It clearly shows that the learning transfer act in a broader context than the training transfers. Although terms of training and learning is often used synonymously, but it also gives different meaning (Testers et al., 2020). This is because the term training refers to do specific skills and more focused on the task and specific learning outcomes. Meanwhile, the learning term gives a broader definition that not only emphasizes certain skills, but also the characteristics of the socio-cultural, cognitive and behavioral.

However, the definition given by researchers in the past five years is not much different. Yet Ford et al., (2018) emphasize the word generalization and maintenance in defining the learning transfer. The literature found, many researchers use the term in learning transfer is to generalize the skills required in the phase of training to the workplace environment and retention (the learning) skills is continuously all the time (Rahman 2020; Testers et al. 2020; Ng & Ahmad, 2018). This is because the generalization is how trainees apply the knowledge acquired from the training to the work environment, although different scope of work. While retention emphasizing time periods and retention of workers' skills should be at the same level even after they have worked. This is essential to ensure continuously transfer and thus can improve the performance of individuals and organizations. And it is appropriate with the concept of NOSS system that emphasizes the element of generalization in applying the skills learned in training to the working environment.

Therefore, learning transfer in this study emphasizes the combination of retention and generalization to ensure transfer of learning can occur effectively thereby improving the performance of individuals and organizations.

2.2 Trainee Characteristic

Sahoo & Mishra (2019) and Singh (2017) stressed that the trainee's characteristic is a very critical factor to make learning transfer more effective. This is also support by the previous studies which stated that the characteristics of

trainees are important factors and increase the effectiveness of learning transfer (Baldwin et al., 2017; Ford et al., 2018). According to Rahman (2020), trainee characteristic includes the ability, personality and motivation. Meanwhile Holton et al., (2000) lists several factors such as self-efficacy, readiness to learn, motivation to transfer, and performance outcome that related to the trainee's characteristics.

Then becomes a requirement that each of these factors can be applied in the characteristics of the trainees in ensuring the effectiveness of learning transfer. It supports Blume et al., (2019), in which the trainee's characteristics can influence the training outcome. Therefore, emphasis is also taken care of by Department of Skill Development by listing a number of trainees characteristic factors should be through by guidelines of Core Abilities: A Supplement to the National Occupation Skill Standards.

2.3 Training Design

Training design refers to the learning principles and training content that takes into account the training objectives, materials used in the training and training content arrangements (Nazli & Khairudin, 2018). Thus, failure to prepare training design results in ineffective learning transfer. This supports the findings of previous studies found that training design and facilities have been found to have a significant influence on learning transfer (Rahman, 2020; Ford et al., 2018; Nazli & Khairudin, 2018; Nafukho et al., 2017). Therefore, organizations need to design training programs that provide trainees with relevant knowledge and skills.

There are various factors that can represent the design factors of this training. Rahman (2020), list three factors such as learning principles, sequence and training content. While Holton et al., (2000) list more comprehensively by listing four factors such as content validity, transfer design, personal capacity for transfer and opportunity to use. There are also several other factors such as the similarity of learning content and use of materials to work environment (Chauhan et al., 2017), learning methods and strategies (Iqbal & Dastgeer, 2017; Ismail et al., 2019), and activities and discussions related to learning use new in work (Holton et al., 2000).

2.4 Work Environment

Another factor influencing the transfer of learning is the work environment factor (Rahman, 2020; Wisshak & Hochholdinger, 2018). According to Salleh and Mamat, (2017) environmental factors help determine whether trainees exhibit learned behaviors as soon as they return to the work environment. However, there are previous studies that state this factor is less important than trainee characteristics and training design (Rahman, 2020). While Park et al., (2018) stated that the work environment is a factor that prevents, reduces and encourages the transfer of learning. It therefore depends on the trainee whether to use all the opportunities provided in the work environment to improve performance. On the other hand, the trainee cannot transfer what is learned if this work environment is not fully utilized. Various definitions from previous studies can be linked to work environment factors. Based on the study of Park et al., (2018), the work environment is divided into two, namely factors related to the work system and factors related to humans. Various variables can be related to the job method, but the incentive element to apply expertise and skills was a focus in most studies based on Park et al., (2018). As for human-related factors, the results of previous studies showed that supervisor-related factors play a critical role in ensuring the transfers' success (Rahman, 2020; Park et al., 2018).

2.5 Virtual Learning Space

The concept of learning spaces has been developed based on Kurt Lewin's theory and the concept of life space (Carruth, 2017). According to Lewin (1935), individual and environmental factors are variables that are interdependent with each other. Specific learning situations are integrated through learning processes and outcomes, different types of learning situations or learning spaces imply different learning categories with different qualities (Carruth, 2017). According to Carruth (2017), there are five types of learning spaces identified as daily learning, school learning, workplace learning (Marsick et al., 2017; Carruth, 2017), interest-based learning and net-based learning or e -learning (Brooks & Davis, 2020).

Now most students are involved with almost all of these types of learning spaces. The transition between them is becoming increasingly important and complex and literature review finds that the main problem of transfer usually occurs as a result of the transition between each of these five types of learning spaces (Carruth, 2017). However, a review of the literature found that most studies associate this factor with higher education in universities alone (Brooks & Davis, 2020; Thomas, 2010). Studies involving this factor in the TVET sector are still few and far between. Therefore, this study is to look at the relationship of these factors with the transfer of learning.

However, most types of learning space have already been taken into account if involved in the transfer of learning except the type of learning based on-Net or e-learning. The global economy and technological advancement today require organizations to make continuous adjustments to maintain competitive advantage (Sitzmann & Weinhardt, 2018). Therefore, this type of Net-based learning or e-learning is considered and researchers predict this type to contribute to the transfer of learning. But until now, studies related to this type of learning transfer are very small. Therefore, it is necessary to include these factors in the learning transfer model to ensure that learning transfer is more effective.

Therefore, these characteristics have become increasingly contagious among students especially in adult learning. This is because students prefer learning through behavior rather than learning through listening. Students also often choose to study in groups. A literature reviews also found that when engaging in lectures, they became impatient and did not engage in learning (Ruhizan et al., 2014). However, the extent to which characteristics can have an impact on improving the performance of trainees is still a question. Therefore, an examination of the transfer should be done to see to what extent the prediction of the effectiveness of the transfer of learning can occur.

3.0 Research Methodology

The study uses a quantitative approach by survey method to collect and analyze data from NOSS-based skills trainees who have had work experience or have been exposed to work environment such as industrial training (at least three working months). This phase begins with the instrument development process. Based on the themes, sub-themes and sub-codes resulting from qualitative data, the researcher developed a table of determination/instrument specification in producing the questionnaire instrument. The researcher adapted some of the existing questionnaire instruments to adapt their use to the themes and sub-themes obtained. However, there are also some question items produced by the researcher based on findings from qualitative data. the addition of items is based on the needs of the experts obtained through interview interviews conducted in the initial phase. Once the instrument was developed, the researcher handed over the instrument to four experts consisting of content, measurement and language experts. The selection of these 4 experts is sufficient in checking the validity of the instrument which includes the validity of the construct and content. This process is necessary to ensure that the instruments developed are valid and suitable for use and measure what is to be measured. Instrument also goes through a process of reliability and validity through a pilot study. The pilot study were analyzed using Rasch Measurement Model approach. There are 5 constructs involving a total of 72 items in the study where all have undergone the recommended reliability and validity process as shown in table below:

Table 1 - Construct and total of item

Construct	Total of Item
Trainee characteristics	14
Training Design	17
Work environment	17
Virtual Learning Space	12
Learning Transfer	12
Total	**72**

The population involves of the training institutes in peninsular Malaysia such as Advance Technology Training Centers (ADTEC), Centre for Instructor Advanced Skill Training (CIAST), Industrial Training Institutes (ILP), and the National Youth Skills Institute (IKBN) throughout Malaysia offering automotive programs based on the NOSS system. This population selection has the same characteristics, consisting of level 1 to 5 of automotive course who is follow the NOSS-based training program. So the population of trainees consisting of 13 public skills training institutes is a total of 1578 trainees (N=1578). Details for the total population are as shown in Table (2) below. Based on this population, stratified random sampling techniques were performed for the determination of survey survey samples. Through this technique, trainees in the population have the same opportunity to be selected as the study sample (Parmjit Singh et al., 2010). The determination of the total sample size was obtained by calculations based on the Krejcie and Morgan, (1970) tables. Based on Krejcie and Morgan's table, with a population of 1578 trainees, the total sample size required is 309 trainees (n = 310) (Table 2).

Table 2 - Population and Sampling of the Study

Public Skills Training Institute	Number of Trainees Sample	Number of Sizes
	91	18
	106	21
	134	26
	95	19
	68	13
	120	24
	40	8
	19	4
	394	77
	104	20
	160	31
	185	36
	62	12
	N=1578	**n=309**

3.1 Data Analysis

The results of this survey study were analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with the help of SmartPLS software. This analysis is done because this procedure can predict and explain the target constructs (Hair et al., 2017), further able to explore the relationship between variables (Ringle et al., 2020). In addition, PLS-SEM was also chosen because this method can be performed on a complex structural equation model consisting of many constructs and indicators (Hair et al., 2017; Ringle et al., 2020). Additional Hair et al., (2017) and Ringle et al., (2020), these PLS-SEMs can also control both reflective and formative constructs. Therefore, in accordance with this study, the researcher chose the data analysis procedure using PLS-SEM to develop a model that has the stated characteristics.

The PLS-SEM analysis conducted consists of two types, namely measurement model analysis and structural model analysis. For this study, it focus on measurement model analysis. Through the evaluation of the measurement model, the researcher can assess the reliability and validity of the measured constructs. However, for the analysis of the measurement model, the analysis depends on whether the model is reflective or formative. The determination of both reflective and formative is determined by the researcher based on the theories of the study. In addition, the validity of the measurement model becomes a requirement in evaluating the model of a structural model (Hair et al., 2017). Whereas through structural model evaluation involves the ability of the model to predict.

4.0 Result

The findings of the study as a result of the analysis of this reflective measurement model consists of four tests namely convergent validity and discriminant validity that act for the validity and reliability of the constructs. While the findings of the structural model analysis are based on the path model coefficient of structure or empirical t value.

4.1 Measurement Model

4.1.1 Convergent Validity

Convergent validity testing is performed to assess the extent to which multiple items measure the same concept in a single agreement (Ringle et al., 2020). Therefore, this convergent validity analysis can be assessed through several tests such as i) factor loading assessment, ii) composite reliability (CR) and iii) Average Variance Extracted (AVE) (Hair et al., 2017). The first stage, the researcher needs to ensure that the loading factor value exceeds 0.708 (Hair et al., 2017). This is because the value of 0.708 in duplicate is equal to the value of 0.5 which represents the value of Average Variance Extracted (AVE). According to Hair et al., (2017), the condition for the AVE value should exceed 0.5. Therefore, the loading factor value between 0.40 to 0.70 should be considered to be removed from the scale, if the removal of the indicator can increase the value of AVE or CR (Hair et al., 2017).

Table 3 shows the loading findings for each indicator and the values of AVE and CR after the removal of the indicator. After the researcher removed the indicator by meeting several conditions, namely the AVE value for each construct exceeds 0.5 (Akter et al., 2017) and the CR value exceeds 0.7 (Hair et al., 2017), then the findings show that all indicators exceed the set minimum level. Therefore, to meet this requirement, a total of 10 indicators were eliminated from the total of 72 indicators. So these findings show that the measurement of all these reflective constructs has a high level of Convergent Validity. Meanwhile, measurement model from the convergent validity are shown on Figure 1.

Table 3 - Convergent validity output

Construct	Indicators	*Outer loading*	AVE	CR
Trainee characteristics	cp1_ek_pcy	0.657	0.529	0.925
	cp2_kp_cognitive	0.769		
	cp3_mp_modelpel	0.769		
	cp3_mp_motive	0.755		
	cp4_p_dayathn	0.755		
	cp4_p_discipline	0.728		
	cp4_p_positive	0.730		
	cp4_p_upayabljr	0.748		
	cp4_p_mnt	0.667		
	cp4_p_rjin	0.752		
	cp4_p_tgjwb	0.655		
Generalization	g_adaptation	0.889	0.607	0.924
	g_cuba	0.665		
	g_gbgn	0.680		
	g_ingnthu	0.719		
	g_krsustrsn	0.892		
	g_pbgai	0.738		
	g_ssuai	0.721		
	g_troka	0.889		
Retention	p_ksus	0.809	0.625	0.869
	p_lthn	0.815		
	p_lthntmbhn	0.739		
	p_tnjkajr	0.795		
Work Environment	pk1_hpn_kom	0.797	0.516	0.927
	pk1_hpn_ssuaidr	0.731		
	pk1_hpn_tgglprsdr	0.794		
	pk2_hpp_iktarhn	0.797		
	pk2_hpp_ppdktvti	0.672		
	pk3_sr_bntuan	0.735		
	pk3_sr_glk	0.739		
	pk5_sp_amblthu	0.679		
	pk5_sp_bmbgn	0.634		
	pk5_sp_kjskali	0.679		
	pk5_sp_pluang	0.667		
	pk5_sp_pnjlsn	0.668		
Training Design	rb1_kp_tknn	0.712	0.520	0.948
	Rb1_kp_susana	0.814		
	rb2_pg_bhnckp	0.814		
	rb2_pg_gunakmhrn	0.702		
	rb3_kk_bntuan pkr	0.660		
	rb3_kk_lthnslaras	0.817		
	rb4_rb_kmdhnlthn	0.709		
	rb4_rb_kerjasamaind	0.811		
	rb4_rb_pglmnpgjr	0.677		
	rb4_rb_progrm	0.695		
	rb5_k_updteNOSS	0.712		
	rb5_k_updateNOSS1	0.650		
	rb5_k_manual	0.679		

Construct	Indicators	*Outer loading*	AVE	CR
	rb5_k_slmt	0.695		
	rb6_jp_gnjrn2	0.707		
	rb6_jp_mahir	0.689		
	rb6_jp_ubahmsdpn2	0.680		
Virtual Learning Space	rp1_hs_interact	0.504	0.508	0.911
	rp1_hs_krjakump	0.605		
	rp1_hs_kongsipglmn	0.684		
	rp2_pd_adptasi	0.753		
	rp2_pd_cpt	0.777		
	rp2_pd_cpt2	0.765		
	rp2_pd_teroka	0.760		
	rp2_pd_teroka2	0.684		
	rp3_pm_comm	0.774		
	rp3_pm_kgsimklmt	0.772		

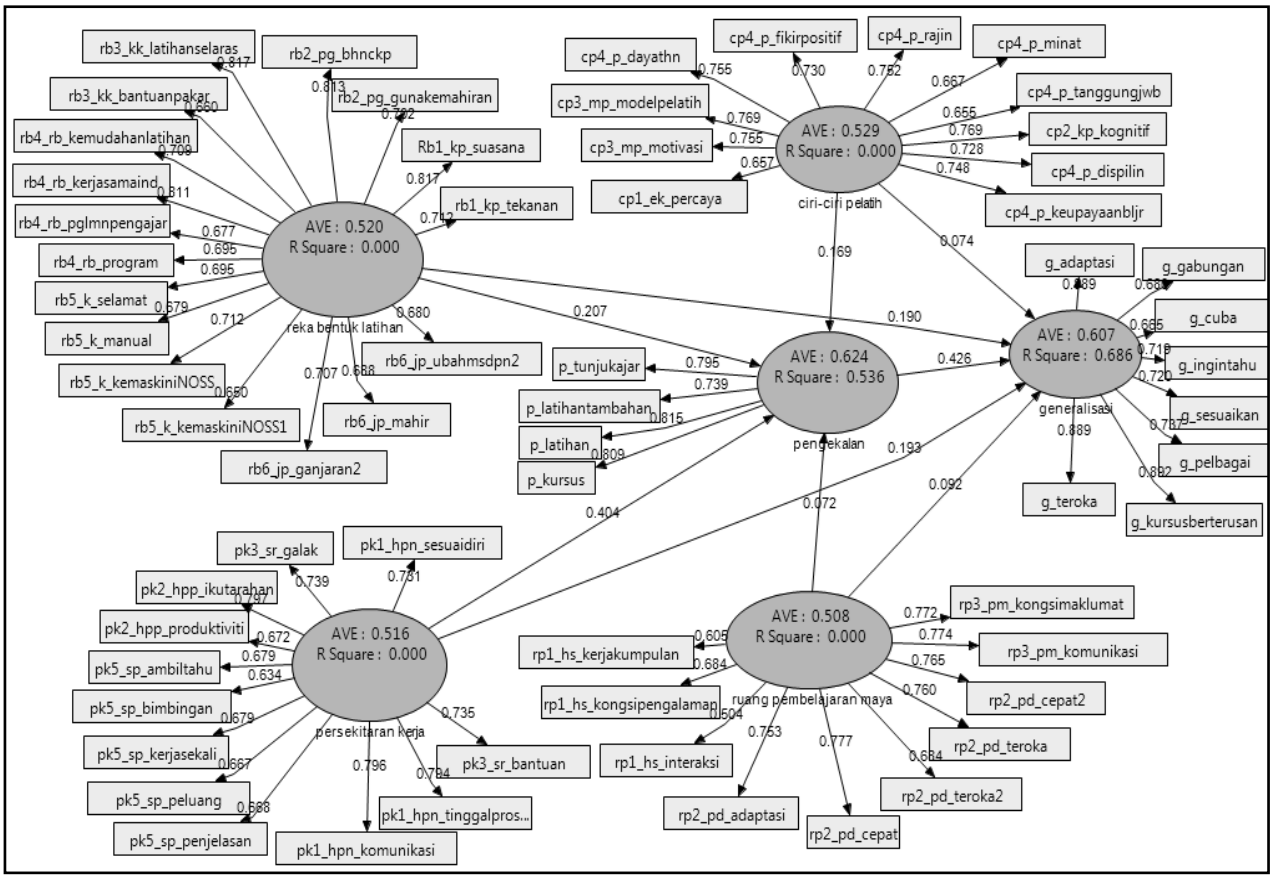

Fig. 1 - Measurement model based on convergent validity

4.1.2 Discriminant Validity

The discriminant validity test serves to assess the validity of each construct. This discriminant validity test is to see to what extent the constructs differ from other constructs in accordance with empirical standards (Hair et al., 2017). Ringle et al., (2020), meanwhile, explains that discriminant validity is the extent to which items differentiate between constructs or measure different concepts. Additional Hair et al., (2017) further, by creating discriminant validity, can show that constructs are unique and create phenomena not represented by other constructs in the model. Therefore, two tests were performed to measure discriminant validity (Hair et al., 2017). Namely the assessment of cross loadings and Fornell-Larcker criteria.

4.1.2.1 Cross Loadings

The discriminant validity test serves to assess the validity of each construct. This discriminant validity test is to see to what extent the constructs differ from other constructs in accordance with empirical standards (Hair et al., 2017). Ringle et al., (2020, meanwhile, explains that discriminant validity is the extent to which items differentiate between constructs or measure different concepts. Additional Hair et al., (2017) further, by creating discriminant validity, can show that constructs are unique and create phenomena not represented by other constructs in the model. Therefore, two tests were performed to measure discriminant validity (Hair et al., 2017). Namely the assessment of cross loadings and Fornell-Larcker criteria.

Table 4 shows the cross loading values for each indicator viewed crosswise with each constructs. It is found that the outer loading value for an indicator on a particular construct is greater than the loading value for other constructs. These findings were obtained after the removal of indicators that do not comply with the conditions of cross loading. It was found that 10 indicators were removed to meet the test requirements. Referring to Table 3 all outer loading indicators measuring certain constructs are greater (darkened) than the cross loading values for other constructs. These findings have provided answers to research questions by showing that cross loading values provide evidence of validity for measurement model constructs.

Table 4 - Cross loading output

Indicator	Trainee Characteristics	Generalization	Retention	Work Environment	Training Design	Virtual Learning Space
cp1_ek_pcy	**0.657**	0.378	0.367	0.331	0.460	0.407
cp2_kp_cognitive	**0.769**	0.427	0.459	0.383	0.503	0.326
cp3_mp_modelpel	**0.769**	0.428	0.456	0.380	0.501	0.326
cp3_mp_motive	**0.755**	0.451	0.351	0.388	0.568	0.415
cp4_p_dayathn	**0.755**	0.449	0.347	0.388	0.570	0.411
cp4_p_discipline	**0.728**	0.361	0.353	0.365	0.479	0.257
cp4_p_positive	**0.730**	0.362	0.356	0.371	0.490	0.255
cp4_p_upayabljr	**0.748**	0.489	0.458	0.407	0.532	0.321
cp4_p_mnt	**0.667**	0.438	0.410	0.366	0.484	0.326
cp4_p_rjin	**0.752**	0.495	0.466	0.409	0.532	0.327
cp4_p_tgjwb	**0.655**	0.408	0.425	0.429	0.490	0.305
g_adaptation	0.478	**0.889**	0.615	0.585	0.576	0.404
g_cuba	0.360	**0.665**	0.517	0.510	0.456	0.401
g_gbgn	0.435	**0.680**	0.556	0.528	0.508	0.413
g_ingnthu	0.426	**0.719**	0.514	0.414	0.515	0.352
g_krsustrsn	0.482	**0.892**	0.613	0.578	0.561	0.412
g_pbgai	0.490	**0.738**	0.629	0.546	0.560	0.453
g_ssuai	0.504	**0.721**	0.662	0.580	0.583	0.464
g_troka	0.478	**0.889**	0.615	0.585	0.576	0.404
p_ksus	0.451	0.623	**0.809**	0.535	0.512	0.371
p_lthn	0.529	0.638	**0.815**	0.613	0.555	0.362
p_lthntmbhn	0.373	0.564	**0.739**	0.519	0.504	0.378
p_tnjkajr	0.411	0.586	**0.795**	0.457	0.465	0.397
pk1_hpn_kom	0.357	0.515	0.454	**0.797**	0.532	0.385
pk1_hpn_ssuaidr	0.352	0.463	0.460	**0.731**	0.423	0.331
pk1_hpn_tgglprsdr	0.351	0.511	0.452	**0.794**	0.532	0.384
pk2_hpp_iktarhn	0.355	0.509	0.456	**0.797**	0.535	0.383
pk2_hpp_ppdktvti	0.426	0.532	0.536	**0.672**	0.518	0.387
pk3_sr_bntuan	0.342	0.459	0.460	**0.735**	0.428	0.323
pk3_sr_glk	0.353	0.465	0.464	**0.739**	0.433	0.329

Indicator	Trainee Characteristics	Generalization	Retention	Work Environment	Training Design	Virtual Learning Space
pk5_sp_amblthu	0.364	0.511	0.497	**0.679**	0.487	0.354
pk5_sp_bmbgn	0.389	0.535	0.487	**0.634**	0.537	0.414
pk5_sp_kjskali	0.403	0.503	0.529	**0.679**	0.507	0.407
pk5_sp_pluang	0.381	0.488	0.494	**0.667**	0.459	0.368
pk5_sp_pnjlsn	0.450	0.503	0.492	**0.668**	0.544	0.458
rb1_kp_tknn	0.448	0.466	0.429	0.513	**0.817**	0.393
Rb1_kp_susana	0.510	0.480	0.468	0.493	**0.712**	0.392
rb2_pg_bhnckp	0.451	0.468	0.429	0.512	**0.814**	0.398
rb2_pg_gunakmhrn	0.488	0.497	0.427	0.508	**0.702**	0.323
rb3_kk_bntuan pkr	0.533	0.543	0.472	0.494	**0.660**	0.367
rb3_kk_lthnslaras	0.448	0.466	0.429	0.513	**0.817**	0.393
rb4_rb_kmdhnlthn	0.504	0.468	0.455	0.489	**0.709**	0.379
rb4_rb_kerjasamaind	0.444	0.456	0.416	0.507	**0.811**	0.381
rb4_rb_pglmnpgjr	0.579	0.542	0.538	0.506	**0.677**	0.380
rb4_rb_progrm	0.480	0.490	0.414	0.500	**0.695**	0.311
rb5_k_updteNOSS	0.506	0.501	0.480	0.496	**0.712**	0.403
rb5_k_updateNOSS1	0.460	0.521	0.478	0.529	**0.650**	0.412
rb5_k_manual	0.490	0.507	0.463	0.477	**0.679**	0.439
rb5_k_slmt	0.589	0.542	0.491	0.473	**0.695**	0.388
rb6_jp_gnjrn2	0.510	0.504	0.480	0.495	**0.707**	0.408
rb6_jp_mahir	0.588	0.543	0.497	0.474	**0.689**	0.396
rb6_jp_ubahmsdpn2	0.491	0.510	0.468	0.482	**0.680**	0.438
rp1_hs_interact	0.163	0.279	0.245	0.306	0.280	**0.504**
rp1_hs_krjakump	0.317	0.370	0.297	0.343	0.317	**0.605**
rp1_hs_kongsipglmn	0.356	0.360	0.349	0.379	0.425	**0.684**
rp2_pd_adptasi	0.405	0.410	0.344	0.416	0.447	**0.753**
rp2_pd_cpt	0.273	0.389	0.358	0.358	0.339	**0.777**
rp2_pd_cpt2	0.434	0.434	0.358	0.438	0.467	**0.765**
rp2_pd_teroka	0.417	0.413	0.345	0.428	0.454	**0.760**
rp2_pd_teroka2	0.342	0.363	0.350	0.374	0.421	**0.684**
rp3_pm_comm	0.263	0.381	0.358	0.357	0.339	**0.774**
rp3_pm_kgsimklmt	0.265	0.380	0.367	0.357	0.349	**0.772**

4.1.2.2 Fornell-Larcker Criteria

An evaluation of the Fornell-Larcker criteria was performed by comparing the square root values of AVE to the latent value correlation values. Where the value of the square root of the AVE should be higher than the highest correlation value of any construct (Hair et al., 2017). This is because latent variables need to explain better for their own indicator variants than variants for other latent variables.

Table 5 shows that the square root value of AVE (darkened) is higher than the correlation value for each construct after the researcher has removed the indicator. These findings indicate that the evaluation of Fornell-Larck's criteria confirms the discriminant validity test which in turn has answered research questions related to the validity of measurement model constructs.

Table 5 - Fornell-Larcker criterion output

Construct	trainee characteristics	generalization	retention	Work environment	training design	virtual learning space
Trainee characteristics	**0.727**					
Generalization	0.591	**0.779**				
Retention	0.562	0.764	**0.790**			
Work environment	0.529	0.700	0.675	**0.718**		
Trainee characteristics	**0.727**					
Generalization	0.591	**0.779**				
Retention	0.562	0.764	**0.790**			
Work environment	0.529	0.700	0.675	**0.718**		
Training design	0.703	0.700	0.646	0.694	**0.721**	
Virtual learning space	0.4601	0.5334	0.475	0.529	0.542	**0.713**

5.0 Discussion and Conclusion

Overall, the learning transfer model is generated through six variables namely trainee characteristics, work environment, training design, virtual learning space (new variables), retention and generalization represented by 62 indicators that measure each construct can be observed to ensure the emphasis that needs to be done by the relevant parties (trainees, instructors, supervisors or employers). Based on testing in the analysis of reflective measurement models, the validity and reliability of the constructs in the model can be done. Testing also provides support for the suitability of constructs into route models. Although this study is exploratory, the findings show that the value of CR is satisfactory. It is clear that these constructs are consistent and stable for such measurement models. Thus each of the constructs measured is reliable and suitable for the measurement model. This supports the findings of Hair et al., (2017) who explained reliability is a necessary condition for measurement validity.

The results of the analysis of the measurement model and structure of PLS-SEM revealed that the transfer of learning (generalization and retention) is described by four constructs. The constructs are trainee characteristics, training design, work environment and virtual learning space. Studies have also shown that focus should be put on these six components in order to improve the efficacy of the training design for the transition of learning. Focusing on technological knowledge and core abilities in accordance with the needs of the industry is among the focus that can be taken.

After following all the testing conditions, there are 62 items remaining that have a good level of validity. In conclusion, after all the tests performed for this reflective measurement model, it is clear that all the validity and reliability testing criteria have been met. Also it provide evidence and support for the measurement reliability and validity of the reflective measurement model. Testing of this reflective measurement model is necessary to ensure that structural model testing is performed. This is supported by Hair et al., (2017) who explained that structural model testing is only done if the measurement model testing has covered its requirements.

The results of the study found that the transfer of learning for skills training, especially those using the NOSS system is necessary to ensure that the results learned can be used and generalized to the world of work by trainees. This can also avoid losses in terms of time, energy and finance in producing a highly skilled workforce. The results of the study also prove that the success of a learning transfer is able to influence the improvement of individual work performance (Holton et al., 2000). This in turn, leads to a return on investment from training. Apart from that, the results of the study also show that the transfer of learning is relevant in training institutes to ensure that there is a similarity between the training taught and the needs of the real workplace thus ensuring the production of a skilled workforce. This transfer of learning also not only refers to learning in skills training institutions only, but it also refers to learning in the workplace. Workplace learning, whether formally or informally, will boost and sustain learning outcomes and talents, thereby enhancing job performance (Blume et al., 2019; Baldwin et al., 2017; Ford et al., 2018).

Therefore, to ensure effective learning transfer, work environment factors need to be given priority. Followed by transfer design factors, trainee characteristics and finally virtual learning space. Based on path coefficient ρ testing, found that the work environment construct is the most contributing or important construct to the transfer of learning to the endogenous constructs of retention (0.404) and generalization (0.193). This finding contradicts the findings of Baldwin & Ford, (2017) who explain that work environment factors are less important than trainee characteristics and training design. However, this finding is in line with the findings of Jalilah Wahidin, (2008) who revealed that work environment factors are the strongest factors in influencing learning transfer. Emphasis on each factor can also be observed through

indicators that measure each construct as an example for the work environment construct, positive personal outcome elements and supervisor support should be given priority. As for training design constructs which is the second highest contributor to the transfer of learning that is to the retention constructs (0.207) and generalization constructs (0.190) through transfer design elements, performance expectations, curriculum and content validity need to be emphasized. Similarly, trainee trait constructs that require personality elements, trainee readiness and transfer motivation need to be emphasized. As for the newly tested constructs, namely virtual learning space, elements of digital approach and mobile approach should be given priority in ensuring effective learning transfer. So based on the quantitative findings, a model of transfer of learning skills training based on the NOSS system and learning in the workplace as a result of the predictions obtained through PLS-SEM analysis.

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