

Achieving the Use of National Employment Work Competency Standards for Training Workers in the Construction Sector in Indonesia

Hotma Sitohang¹, Zainai Mohamed², Syuhaida Ismail³

^{1,2,3}Razak Faculty of Technology and Informatics, Universiti Teknologi Malaysia Kuala Lumpur
sitohanghotma@yahoo.co.id, zainai.kl@utm.my, syuhaida.kl@utm.my

Abstract

The Indonesian National Work Competency Standards (SKKNI) are mandatory state laws that must be used as a guideline for training construction workers to improve their competence in construction projects. However, in implementation, there are still many obstacles to achieving success. Therefore, a study is needed to measure the extent to which competency improvement training, which is outlined based on the SKKNI, has an impact on good human resource quality practices by contractors in Indonesia. The questionnaire survey was distributed to 192 construction workers who had obtained a Skills Certificate (SKT) and were involved in 32 multi-storey building construction projects in Jakarta, Indonesia, where Structural Equation Modeling (SEM) was used for data analysis. It was found that the training indicators for competency improvement were mainly the suitability of training materials and relevant fields of work in accordance with the certificate; close relationship between construction workers and management, development of communication skills, the ability of senior workers to share knowledge with juniors, and provision of work motivation; and the expected results from competency improvement training basically include the ability to use a systematic method approach, combine work strategies, plans, settings, goals and priorities, and the ability to choose models of various types and styles of communication. The results showed that competency improvement training with achievement based on SKKNI had a close relationship, SKKNI influenced the improvement of the quality of human resources, but the training results were not significant for the human resources used by contractors.

Keywords

training; workers; competence; contractors; indonesia



I. Introduction

The construction industry is a complex economic sector, which involves multiple stakeholders and has broad linkages with other areas of activity such as the manufacture and use of materials, energy, finance, labor and equipment (Hillebrandt, 2000; Stasiak-Betlejewska and Potkány, 2015). Statistical data shows that in developing countries, the construction sector contributes significantly to country development (World Bank., 2017). Stasiak-Betlejewska and Potkány (2015) adopt the statements of (Giang and Sui Pheng, 2011) that the role of the construction sector in national economic growth is measured by the potential for employment generated, available materials, including the impact of construction expansion. The output of the construction industry is a physical foundation that functions to maintain the country's economic growth and support the development of various aspects of people's lives (Sudarto, 2011).

Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired (Shah et al, 2020). The SKKNI for construction sector human resources must be handled through a recognized competency training institution. The Construction Service Development Agency (LPJK) is an institution that manages the development of the construction sector in Indonesia that accredits competency training institutions, which provide competency certificates to construction workers (Ministry of Public Works, 2010).

Improving the quality of human resources is one of the key factors in maintaining the capacity of the local construction sector and even maintaining the dominance of the national construction labor market (Ministry of Public Works, 2016). Therefore, the Indonesian government is responsible for increasing the competence, professionalism and productivity of Indonesia's national construction workforce (*Undang-undang no 2 tahun 2017*), where the quality of human resources is carried out through increased competency training through organized learning and development methods that expand efficiency. and the competitiveness of individuals, groups and organizations (Goldstein and Pewen, 2013; Jehanzeb, 2020). Based on construction data in Indonesia, there are only a few documented success stories of increasing the competence of construction workers based on the SKKNI.

II. Review of Literature

2.1 Human Resources in Construction Sector

The study of human resource management in the construction sector has been increasingly in demand over the last few decades. Many detailed literature studies have been published in textbooks on human resource management, as quoted from (Druker *et al.*, 1996; Debrah and Ofori, 2001; Cho and Egan, 2013), however the absorption of human resource practices in the construction industry is still inadequate (Dainty, Bagilhole and Neale, 2000) where there is a lack of humanity in the industry with the widespread use of casual workers. , resulting in a lack of formal employment in the construction sector.

2.2 Indonesian National Work Competency Standards (Skkni)- Based Competency Improvement Training

Indonesian National Competency Standards (SKKNI) for construction workers are developed based on competency analysis of each work position involving construction workers and related experts in each work area. After literature studies, surveys, interviews, and workshops, a draft using the Regional Model Competency Standards (RMCS) format are then discussed in a pre-convention involving the Competency Standards Committee, Technical Team, National Professional Certification Board (BNSP), Construction Services Development Agency (LPJK)), academics, and experts and resources related to construction work (Ministry of Public Works, 2010).

2.3 Competency Standards for Construction Sector

Competence at all levels in construction must be understood in a broad sense, including skills and knowledge and work-based tasks, functional skills, knowledge and competencies about health and safety, and human factors (CIBT, 2014). Consisting of situational awareness, self-awareness, awareness risk, and communication skills. The main competence is the ability requirements that must be possessed by construction workers to achieve the performance needed in carrying out tasks in certain competency units, which are distributed into seven main competencies (Ministry of Public Works, 2010) from (1) gathering, analyzing and organizing information; (2) communicating information and

ideas; (3) planning and organizing activities; (4) collaborating with other people and groups; (5) using ideas mathematically and technically; (6) solving problems; and (7) using technology.

2.4 Construction Worker Competency Improvement Training

In general, workers' motivation to learn through training is described as the willingness of participants to use knowledge and skills mastered in training programs at work, and most importantly the extent to which the benefits of training can meet the training expectations and desires. participants (Noe, 1986; Cho and Egan, 2013). Training that can motivate learning enthusiasm is a measure of participants' perceptions about the relationship between successful training and future work performance, where if individuals feel that their learning is relevant to their goals (what they need to know) or change meets their expectations and meets their need for learning related to performance (Holton, 1996; Tonhäuser and Büker, 2016).

2.5 Construction Worker Competency Improvement Training

In general, quality management practices for human resources are the daily operations of each company. Often, communication is established only between personal management in the company (Delaney and Huselid, 1996). People who are responsible and have full authority over the implementation of activities are called managers (Robbins, 1993). 15 good practices can determine the success of a company in terms of quality management of their human resources (Edy, 2016), namely: salary compliance; (2) providing incentives; (3) working relationship with the company; (4) working health and safety insurance (OSH); (5) giving a bonus; (6) facilities for workers; (7) training for new jobs; (8) encouragement to increase knowledge; (9) technology transfer from seniors; (10) giving responsibility; (11) developing communication; (12) exposure to working conditions; (13) workers are always motivated; (14) transparent evaluation; and (15) working together as a team. These 15 general good practices were also adopted in determining the good practices of quality management of human resources by contractors in Indonesia based on the Indonesian National Competency Standards (SKKNI).

III. Research Method

The survey questionnaire was undertaken on 192 construction workers involved in 32 multi-story building construction projects in Jakarta, Indonesia using the Likert scales of 1 = strongly disagree to 5 = strongly agree. Data obtained from this survey were processed and analyzed using Structural Equation Modeling (SEM). The latent independent variables are the indicators of competency improvement training based on the Indonesian National Competency Standards (SKKNI) (labeled as "Training Indicator") as shown in Table 1 and expected outcomes of competency improvement training (labeled as "Training Outcome") as shown in Table 2, while the latent dependent variable is the good practice of human resource quality management by the contractors (labeled as "Contractor's Good Practice" as illustrated in Table 3. The proposed relationships between these three variables are shown in Figure 1.

Table 1. Indicator of competency improvement training based the Indonesian National Competency Standards (SKKNI)

No.	Training Indicator	Codification
1	Create desire to attend training	X11
2	Suitability of training material	X12
3	Balanced theory and practical material	X13
4	Sufficient training duration	X14
5	Capability of training instructor	X15
6	Good training tools and equipment	X16
7	Good training venue	X17
8	Sufficient information for training	X18
9	Reasonable training costs	X19
10	Relevant field of work according to the certificate	X110
11	Pride of being certified	X111

Source: Processed Data

Table 2. Expected outcomes of competency improvement training based on SKKNI

No.	Training Indicator	Codification
1	Able to evaluate quality of information at work	X31
2	Able to evaluate quality of information at work	X32
3	Able to combine strategies, plans, arrangements, goals and work	X33
4	Able to cooperate to complete complex activities	X34
5	Able to complete tasks technically mathematically on complex work	X35
6	Able to use a systematic method approach	X36
7	Able to use technology for development	X37

Source: Processed Data

Table 3. Good practice of human resource quality management by the contractors

No.	Contractor's Good Practice	Codification
1	Salary compliance with competency	X21
2	Incentives provision	X22
3	Working relationship with the management	X23
4	Occupational health and safety guarantee	X24
5	Bonus provision	X25
6	Facilities for workers	X26
7	Training for new jobs	X27
8	Encouragement to increase knowledge	X28
9	Knowledge transfer from seniors to juniors	X29
10	Giving appropriate responsibility	X210
11	Communication skill development	X211

12	Exposure to work conditions	X212
13	Motivation provision	X223
14	Transparent assessment	X214
15	Team-work promotion	X215

Source: Processed Data

The trial questionnaire was first distributed to 30 construction workers and then processed with SPSS version 22, and was obtained as a result of the Cronbach's Alpha test value of 0.914 which is greater than 0.499 for $df = 0.01$ so the questionnaire can be used.

Questionnaires were distributed to 40 building projects over a period of 3 months in stages through project managers and site engineers, but only 192 completed data were returned from 32 building projects. Charging is done voluntarily by first asking the willingness to obtain honesty in filling in the data.

Data obtained from this survey were processed and analyzed using Structural Equation Modeling (SEM). SEM is a model that describes the relationship between latent variables, where SEM is often referred to as the analysis of latent variables (analysis of latent variables) or linear structural relationships. The relationship between variables in SEM is similar to the relationship in path analysis, which is the basis for forming relationships between variables in a structural model. However, in describing the relationship between latent variables, SEM is different from the path analysis model, where tape analysis uses measurable variables while SEM uses variables that cannot be measured directly (Agus Widarjono, 2010; Ladhari, 2010).

SEM is also a model that describes the relationship of variables simultaneously. Because the relationship of variables is simultaneously and every variable in SEM is a latent variable, it is easy to explain SEM using the graphical method. With this graphical method, some computer software such as AMOS and LISREL in estimating SEM also provide estimates using a graphical method. For example, AMOS and LISREL use graphical language to estimate SEM (Riadi, 2018). Latent independent variables are competency improvement training indicators based on the Indonesian National Competency Standards (SKKNI) (labeled as "Training Indicators") as shown in Table 1 and expected results of competency improvement training (labeled as "Training Results") as indicated in Table 2, while the latent dependent variable is a good practice of contracting human resource quality management (labeled as "Contractor Good Practices" as illustrated in Table 3. The proposed relationship between these three variables is shown in Figure 1.

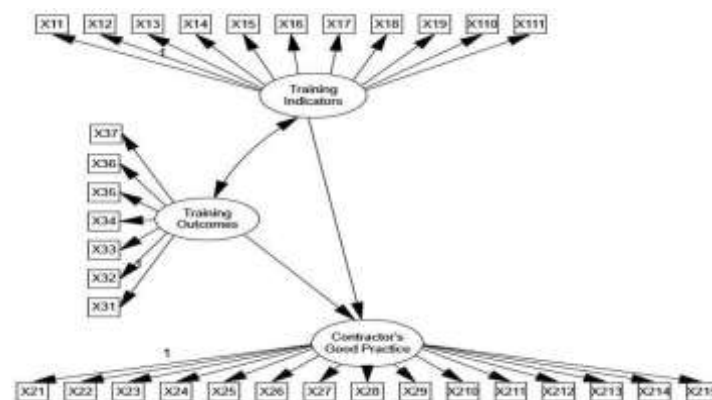


Figure 1. Proposed relationships between training indicator, training outcome and contractor's good practice

IV. Results and Discussion

4.1 Results

Of the 192 responses collected, after the Mahalanobis normality test, only 161 data were valid for use. For the Maximum Likelihood (ML) method in Statistical Equation Modeling (SEM), this is effective because it is in the sample 150-1400 (Hair *et al.*, 2014), and between 100-200 according to Hair, et al. quoted by (Ferdinand, 2014). The number of respondents in this study is 1,161, which means that the assumptions for the sample have been fulfilled.

Assumption of univariate and multivariate normality of data can be done by observing the critical value of the assessment of normality test results from the AMOS 22 program. Values outside the range -2.58 to 2.58 , can be categorized as normal data distribution, therefore for cases that do not meet these assumptions not included in the subsequent analysis (Waluyo, 2011). Normality test results show that X11, X13, X14, X15, X17, X19, X21, X22, X24, X25, X26, X27, X212, X214, and X31 have a slope or crisis figures, so they are not included for further analysis to measure a well-developed model, the parameters will produce an estimated covariance matrix that is close to the sample covariance matrix. The closeness is evaluated first by using the chi-square and fit index tests. Chi-Square depends on sample size, so some indexes of suitability and adequacy of the model that are not sensitive to sample size are needed. The indexes are GFI, AGFI, CMIN / DF, TLI, CFI, and RMSEA. The following will explain everything.

Chi-Square is the most fundamental measurement tool for measuring overall physics. Chi-Square is very sensitive to the size of the sample used. If the number of samples is large enough that more than 200 samples, then the chi-square must be accompanied by other test equipment (Hair *et al.*, 2014). The tested model will be considered good or satisfactory if the chi-square value is low. The smaller the value χ^2 , the better the model (because in the chi-square difference test, $\chi^2 = 0$, it means that there really is no difference, H_0 is accepted) and is accepted based on the probability with a cut-off value of $p > 0.05$ or $p > 0,01$ (McHugh, 2012).

GFI (Goodness Of Fit Index) is a suitability index calculating the weighted proportion of the variance in the sample covariance matrix which is explained by the estimated population covariance matrix (Henseler and Sarstedt, 2013). GFI is a non-statistical measure that has a range of values χ^2 from 0 (poor fit) to 1, 0 (perfect fit). A high value in this index indicates a "better value". The expected GFI is 0.90.

AGFI (Adjusted Goodness of Fit Index) GFI is an analog of R^2 in multiple regression (Tanaka and Huba, 1989). GFI can be adjusted to degrees of freedom to test whether or not the model is accepted. The recommended level of acceptance is if AGFI has a value equal to or greater than 0.90. A value of 0.95 can be interpreted as a good level (good overall model) while values χ^2 between 0.90 to 0.95 indicate a sufficient level (adequate model).

CMIN / DF or Relative χ^2 is generated from Chi-Square (CMIN) statistics divided by the degree of Freedom (DF) which is one indicator to measure the level of a model. Expected CMIN / DF is < 2.0 which indicates acceptance of the model.

TLI (Tucker Lewis Index) is an index that compares a model that is tested with a baseline model (Cai, Chung and Lee, 2021). Baseline models in the AMOS output there are two baseline models along with the tested model (default model). The expected TLI value as a reference for accepting a model is > 0.95 and a value close to 1.0 indicates a very good value.

CFI (Comparative Fit Index) is not affected by the sample size because it is very good for measuring the acceptance level of a model (Tanaka and Huba, 1989). Identical CFI index with Relative Noncentrality Index (RNI) from (Hu and Bentler, 1999). The magnitude of the CFL index is in the range 0 - 1, where getting closer to 1 indicates the highest level of model acceptance. The expected CFI value is > 0.95. In testing the model, TLI and CFI indexes are highly recommended for use because these indices are relatively insensitive to sample size and are less influenced by the complexity of the model.

RMSEA (Root Mean Square Error of Approximation) can be used to compensate for chi-square statistics in large samples. The RMSEA value indicates the goodness of fit that can be expected if the model is estimated in the population (Hair *et al.*, 2014). RMSEA value which is smaller or equal to 0.08 is an index for model acceptance.

Thus, the indices that can be used to test the feasibility of a model are summarized in Table 4 below:

Table 4. Initial testing of overall goodness of fit

Goodness of Fit	Calculation Results	Cut-Off	Description
Chi-square	193.763	Small	
P	0.000	> 0.05	Bad model
CMIN/DF	1.468	< 2	Good model
RMSEA	0.054	< 0.08	Good model
GFI	0.886	> 0.90	Bad model
TLI	0.946	>0.95	Bad model
CFI	0.954	>0.95	Good Model

Source: Processed Data

In general, the goodness of fit test, especially Chi-square, has a value of P = 0,000, so the model is declared bad. Based on the modification index, modifications are made to improve the model by connecting between variables or errors and not changing the path of influence as shown in Figure 2.

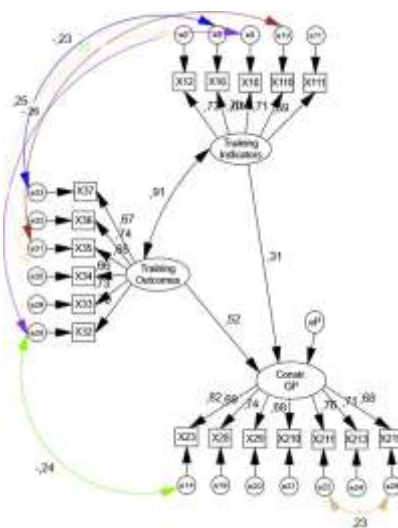


Figure 2. Modification to model

After modifying the model, the model can be said to be fit with the results of the overall model of goodness of fit as illustrated in Table 5.

Table 5. Final testing of overall goodness of fit

Goodness of Fit	Calculation Results	Cut-Off	Description
Chi-square	151.828	Small	Good model
P	0.054	> 0.05	Good model
CMIN/DF	1.205	< 2	Good model
RMSEA	0.036	< 0.08	Good model
GFI	0.911	> 0.90	Good model
AGFI	0.879	> 0.90	Good model
TLI	0.977	> 0.95	Good model
CFI	0.981	> 0.95	Good model

Source: Processed Data

The results of confirmatory factor analysis are presented in the part of the results of SEM analysis after the modification of the final model as shown in Table 6.

Table 6. Results of confirmatory factor analysis

Training Indicator	Contractor's Good Practice		Training Outcome		
	Factor Loading	Indicator	Factor Loading	Indicator	Factor Loading
X12	0.727	X23	0.821	X32	0.703
X16	0.696	X28	0.686	X33	0.730
X18	0.610	X29	0.742	X34	0.663
X110	0.708	X210	0.683	X35	0.649
X111	0.592	X211	0.757	X36	0.736
		X213	0.707	X37	0.666
		X215	0.676		

Source: Processed Data

As illustrated in Table 6, because indicators with factor values less than 0.5 are absent, there is a close correlation between each variable. Although the correlation (standard) boundary number does not have definite guidelines, numbers above 0.7 are generally used as a reference for the proximity of two variables (Santoso, 2015), so this criterion is used as a limit for analysis.

For multivariate, kurtosis 36,351 with $cr = 6,277$ above 2.58 is recorded, but what needs to be considered is that in conducting research using an ordinal scale, normal testing is not necessary because naturally, ordinal data is not quantitative data that must meet the normality assumption (Santoso, 2015).

The latent variable "Training Indicators" shows that the training indicators of competency improvement based on the Indonesian National Competency Standards (SKKNI) are largely determined by appropriateness of training material (X12) and relevant work fields according to the certificate (X110) as the strongest factor

"Good Practices from Contractors" or in detail, good practices of quality management of human resources by contractors on the other hand are largely determined by working relationships with management (X23), communication skills development

(X211), transfer of knowledge from seniors to juniors (X29), and motivation provisions (X213) as the strongest indicator.

"Good Practices from Contractors" or in detail, good practices of quality management of human resources by contractors on the other hand are largely determined by working relationships with management (X23), communication skills development (X211), transfer of knowledge from seniors to juniors (X29), and motivation provisions (X213) as the strongest indicator.

The relationship between Training_Indicators and Training_Outcomes is very strong, with a correlation value of 0.907 as presented in table 7.

Table 7. Correlation

	Correlations	Estimate
Training Indicators	<-->Training_Outcomes	.907

Source: Output Amos 22

Hypothesis measurement is seen by the value of Regression Weights as shown in Table 8. Construction's Good Practice is influenced by Training_Outcomes with a value of P= 0.042, and. Construction's Good Practice is influenced by Training_Indicators with a value of P = 0.211.

Table 8. Regression Weights

End	E	Estimate	C.R.	P
Construction's Good Practice	<	Training_Outcomes	.649	2,036
Construction's Good Practice	<	Training_Indicators	.344	1,250

Source: Output Amos 22

4.2 Discussion

The latent variable "Training Indicators" shows that the training indicators of competency improvement based on the Indonesian National Competency Standards (SKKNI) are highly determined by; appropriateness of training material with a loading factor 0.727. Several studies simultaneously show that the high practical relevance of content, the greatest degree of similarity between learning situations and possible applications, and the learning environment with the learning features that are located, as well as the specifications of learning targets, have a positive influence on training transfer (Tonhäuser and Bükler, 2016); and the relevant field of work by the certificate with a loading factor of 0708. The better the adjustments about where and how the training is carried out to be applied to the job, the more successful the training is (Clark and Voogel, 1985). To maximize the transfer of training, the trainer must design the training in such a way that it represents the actual job assignments. Also, the equipment used in the training must be similar to the one used on the job. Besides, participants must conduct training in an environment similar to their actual work. In other words, training activities must be similar to actual work (Awais Bhatti *et al.*, 2014).

Latin variable "Contractor's Good Practice" or in detail, good practices of quality management of human resources by contractors on the other hand are largely determined by; working relationship with management with factor loading 0.821. (X23). Human resource management has a significant influence in the construction industry, project

managers still need to pay more attention to human resources because they still explain some of the costs of construction projects (Limsila and Ogunlana, 2008). (Malkani and And Kambekar, 2013) observe that a close relationship between top management and workers tend to strengthen working relationships in construction projects; development of communication skills with factor loading 0.757. Effective communication skills are needed because team members consist of different personalities, cultures, skills and education, (Jamshidi *et al.*, 2012). (Chan and Kaka, 2007) transfer of knowledge from seniors to juniors with a loading factor of 0.742. Collaboration between transfer sources and recipient transfers influences individual collaboration and willingness to transfer knowledge, and the characteristics of cooperation also influence the level of knowledge transfer (Sazali, A.W., Haslinda, A., Jegak, U. and Raduan, 2009; Handayani, Purwanggono and Santoso, 2015; Gouza, 2016); and motivational provisions with a loading factor of 0.707. Expectancy theory (Renko, Kroeck and Bullough, 2012) shows that individuals will be more motivated if they believe that their efforts will lead to improved performance. Companies can generate competitive advantage through increasing employee capability, motivation, and allowing employees the opportunity to participate in value creation, which will result in higher productivity and better organizational performance (Grisso, T., & Appelbaum, 1998; Deye, N., Vincent, F., Michel, P., Ehrmann, S., Da Silva, D. *et al.*, 2015; Houghtaling *et al.*, 2019). Employees who are satisfied with their work believe that their work has a purpose and is important to their organization (Saeed *et al.*, 2013). Effective training must focus on benefiting everyone, namely trainees, their work and their employers, and cumulatively, this improves performance at the industry level (Halomoan, 2020).

The latent variable "Training Outcome" is also largely determined by; the ability to use a systematic method approach with a factor loading of 0.736. Actions to approach systematic methods are as autonomy given to trainees in the workplace, this will provide an opportunity to work freely to achieve and improve work output (Hackman and Oldham, 1976; Sadiq *et al.*, 2012) the ability to combine strategies, plans, settings, goals and priorities with a loading factor of 0.730. For this reason, autonomy can be said to be a critical post-training condition, because trainees feel free to outperform newly learned behavior, making it an integral part of learning and training motivation (Weisweiler *et al.*, 2013). Goal setting theory suggests two cognitive determinants of behavior: intentions and values. Intention is seen as a direct precursor to human action, while the second cognitive process manifests itself in the choice or acceptance of subsequent intentions and commitments to goals (Tonhäuser and Bükler, 2016) and able to choose models of various types and styles of communication with a loading factor of 0.703. Training must be an agent of change, in the extreme sense of the word, more concerned with people and the knowledge, skills, and values associated with people, rather than with aspects related to tasks. He is competent in interpersonal communication and uses skills, energy, and enthusiasm to integrate individual trainees and organizational change ([agents of change, in the extreme sense of the word, more concerned with people and the knowledge, skills, and values associated with people, rather than with aspects related to the task: He is competent in interpersonal communication and uses skills, energy, and enthusiasm to integrate individual trainees and organizational change (Shaw, 1971; Analoui, 1994).

The correlation between variables "Training Outcome" with "Training Indicators" is very close, this is explained by the correlation of 0.907 as presented in table 7 thus that the achievement of competency can be achieved through training based on SKKNI.

Analysis of the results of the hypothesis by; The independent variable of “Training Outcome” of "Contractor Good Practices" as the dependent variable is explained by the loading factor 0.042, this number is above 0.01 but still below 0.05, it means that “Training Outcome” affects "Contractor Good Practices" also explained by factors loading of 0.515; The independent variable of "Training Indicators" from "Contractor Good Practices" as the dependent variable is explained by the loading factor 0.211, this number is above 0.05, it means that the "Training Indicators" do not significantly influence "Contractor Good Practices" also explained by factor loading of 0.315. Training and development programs are components of education that are planned and with extraordinary methods for sharing organizational culture, which move from one work skill to understanding skills in the workplace, who can develop leadership, innovative thinking, and problem solving (Meister, 1998; Jehanzeb, 2020). By this opinion, the training in this study has not yet reached the target.

Significance, Limitations, and Future Directions

Achievement of the Indonesian National Work Competency Standards through workforce training in the construction sector still needs to be improved. Training is an organized method of learning and development that extends the efficiency of individuals, groups and organizations (Goldstein and Pewen, 2013). To date, in further vocational training, the question of how the transfer of training problems applies both theoretically and practically has been unsatisfactorily resolved (Hutchins, Burke and Berthelsen, 2010). The main problem of training transfer is that formal training steps often see participants gaining the skills they do or cannot properly apply in their workplaces. That is, it is assumed that participants often fail to optimally transfer what they have learned in training actions to their daily work routines. Likewise for research conducted on construction workers in Jakarta who explained that the training results were not optimal in improving project performance. This research may be a reference for developing countries, especially around ASEAN which already uses labor between nations.

Limitations in this study only obtain data on workers in multi-storey buildings in DKI Jakarta that have a different character of workers from other regions. Likewise, data retrieval is very difficult to do related to the time of very busy workers. Data analysis also are experienced problems with the ability to digest questions to be answered, as evidenced from 192 data that can be used only 161 data.

The recommended future direction based on this research is handling workforce training that needs better attention from the government and labor users so that they can work together to find the best way to obtain optimal results because expert literature often contains estimates of lower transfer rates. Some authors (Georgenson, 1982; BALDWIN and FORD, 1988; Solga, 2005; Kauffeld *et al.*, 2008)(Baldwin and Ford, 1988; Georgenson, 1982; Kauffeld *et al.*, 2008; Lemke, 1995; Solga, 2005) assume that only 10-20% of learning content is applied in the workplace. However, empirical findings from Saks and Belcourt (2006) confirm higher transfer rates. According to this study, immediately after training, 62% of the training content was applied in the workplace, down to 44% after six months, and 34% after one year. This of course can be handled better. According to Jaoude (2015), organizations that provide high-level training have been able to realize profits three times higher compared to competitors.

V. Conclusion

The results of this paper show that compulsory use of the Indonesian National Work Competency Standards (SKKNI) is explained by; "Training indicators" competency improvement is strongly influenced by the suitability of the training material, and the relevant field of work by the certificate; "Training outcomes" of competency improvement are determined by the ability to use a systematic method approach, the ability to combine strategies, plans, arrangements, goals and priorities, and be able to choose models of various types and styles of communication; and "Contractor's Good Practice" is determined by the working relationship with management, development of communication skills, transferring of knowledge from seniors to juniors, and motivational provisions. With the three variables explained by the relationship, it is explained that the variable "training indicator" of competency improvement does not significantly affect the "Contractor's Good Practice" in human resource quality management, but the variable "Training outcomes" can affect the "Contractor's Good Practice". The results also show that the "Training outcomes" with the training indicators have a close relationship so that it appears that SKKNI is sufficiently used for training standards, but the workforce trained in training centers has not met expectations of improving contractor performance.

References

- Agus Widarjono (2010) 'Analisis Statistika Multivariat Terapan', in *Edisi 1*.
- Analoui, F. (1994) 'Training and Development: The Role of Trainers', *Journal of Management Development*. doi: 10.1108/02621719410072107.
- Awais Bhatti, M. *et al.* (2014) 'Training transfer and transfer motivation: The influence of individual, environmental, situational, training design, and affective reaction factors', *Performance Improvement Quarterly*. doi: 10.1002/piq.21165.
- Cai, L., Chung, S. W. and Lee, T. (2021) 'Incremental Model Fit Assessment in the Case of Categorical Data: Tucker–Lewis Index for Item Response Theory Modeling', *Prevention Science*. doi: 10.1007/s11121-021-01253-4.
- Chan, P. and Kaka, A. (2007) 'The impacts of workforce integration on productivity', in *People and Culture in Construction: A Reader*. doi: 10.4324/9780203640913.
- Clark, R. E. and Voogel, A. (1985) 'Transfer of training principles for instructional design', *Educational Communication and Technology Journal*. doi: 10.1007/BF02769112.
- Dainty, A. R. j., Bagilhole, B. M. and Neale, R. H. (2000) 'The compatibility of construction companies' human resource development policies with employee career expectations', *Engineering, Construction and Architectural Management*. doi: 10.1108/eb021142.
- Edy, S. (2016) 'Manajemen Sumber Daya Manusia', *Jakarta: Kencana*.
- Ferdinand, A. (2014) 'Metode Penelitian Manajemen: Pedoman Penelitian Untuk Penulisan Skripsi, Tesis Dan Disertasi Ilmu Manajemen. Edisi kelima', *Badan Penerbit Universitas Diponegoro*.
- Gabcanova, I. (2012) 'Human Resources Key Performance Indicators', *Journal of Competitiveness*. doi: 10.7441/joc.2012.01.09.
- Haas, T. C. *et al.* (2001) 'Implementing a multiskilled workforce', *Construction Management and Economics*. doi: 10.1080/01446190110050936.

- Hackman, J. R. and Oldham, G. R. (1976) 'Motivation through the design of work: test of a theory', *Organizational Behavior and Human Performance*. doi: 10.1016/0030-5073(76)90016-7.
- Holton, E. F. (1996) 'The flawed four-level evaluation model', *Human Resource Development Quarterly*. doi: 10.1002/hrdq.3920070103.
- Hutchins, H. M., Burke, L. A. and Berthelsen, A. M. (2010) 'A missing link in the transfer problem? Examining how trainers learn about training transfer', *Human Resource Management*. doi: 10.1002/hrm.20371.
- Jamshidi, M. H. M. *et al.* (2012) 'Essential Competencies for the Human Resource Managers and Professionals in Construction Industries', *Journal of Basic and Applied Scientific Research*.
- Kauffeld, S. *et al.* (2008) 'Das deutsche Lerntransfer-System-Inventar (GLTSD): Psychometrische Überprüfung der deutschsprachigen Version', *Zeitschrift für Personalpsychologie*. doi: 10.1026/1617-6391.7.2.50.
- Ladhari, R. (2010) 'Developing e-service quality scales: A literature review', *Journal of Retailing and Consumer Services*. doi: 10.1016/j.jretconser.2010.06.003.
- Malkani and And Kambekar, Z. A. K. (2013) 'Management of Human Resource in Construction Industry Introduction', *International Journal of Engineering Research and Technology*.
- McHugh, M. L. (2012) 'The Chi-square test of independence', *Biochemia Medica*. doi: 10.11613/BM.2013.018.
- Meister, J. C. (1998) 'Ten steps to creating a corporate university', *T and D*.
- Ministry of Public Works (2010) *Gerakan Nasional Pelatihan Konstruksi 2010-2014 [National Movement for Construction Training 2010-2014]*. Jakarta.
- Ministry of Public Works (2016) *Profil Tenaga Kerja Konstruksi Indonesia Tahun 2016 [Indonesian Construction Workforce Profile 2016]*. Jakarta.
- Noe, R. A. (1986) 'Trainees' Attributes and Attitudes: Neglected Influences on Training Effectiveness', *Academy of Management Review*. doi: 10.5465/amr.1986.4283922.
- Renko, M., Kroeck, K. G. and Bullough, A. (2012) 'Expectancy theory and nascent entrepreneurship', *Small Business Economics*. doi: 10.1007/s11187-011-9354-3.
- Renwick, D. (2003) 'Line manager involvement in HRM: An inside view', *Employee Relations*. doi: 10.1108/01425450310475856.
- Robbins, S. (1993) *Organizational Behavior*. Englewood: Prentice Hall, Cliffs.
- Rosenwald, M. (2000) *Working class: More companies are creating corporate universities to help employees sharpen skills and learn new ones*. Boston Globe, H1.
- Sadiq, U. *et al.* (2012) 'The Impact of Information Systems on the Performance of Human Resources Department', *Journal of Business Studies Quarterly*.
- Saeed, R. *et al.* (2013) 'The effect of training on employee work', *World Applied Sciences Journal*. doi: 10.5829/idosi.wasj.2013.26.03.1379.
- Santoso, S. (2015) *Amos 22 untuk Structural Equation Modelling [Amos 22 for structural equation modeling]*. Jakarta: Elex Media Komputindo.
- Sazali, A.W., Haslinda, A., Jegak, U. and Raduan, C. R. (2009) 'A Holistic Model Of The Inter-Firm Technology Transfer Based On Integrated Perspectives Of Knowledge-Based View And Organizational Learning', *The Journal of International Social Research*, 2(9), pp. 407–422.
- Seidel, J. (2017) *Transferkompetenz und Transfer. Theoretische und empirische Untersuchung zu den Wirksamkeitsbedingungen betrieblicher Weiterbildnanielung [Transfer competence and transfer. A theoretical and empirical analysis of the*

- conditions affecting effectiveness in* . Landau, Germany: Verlag Empirische Pädagogik.
- Shah, M. M., et al. (2020). The Development Impact of PT. Medco E & P Malaka on Economic Aspects in East Aceh Regency. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)* Volume 3, No 1, Page: 276-286.
- Shaw, J. (1971) 'Training for Change Agents', *Industrial Training International*, 6(8).
- Solga, M. (2005) 'Management des Lerntransfers', in *Praxishandbuch Personalentwicklung*. doi: 10.1007/978-3-663-11137-5_5.
- Stasiak-Betlejewska, R. and Potkány, M. (2015) 'Construction Costs Analysis and its Importance to the Economy', *Procedia Economics and Finance*. doi: 10.1016/s2212-5671(15)01598-1.
- Sudarto (2011) *Meningkatkan Kinerja Perusahaan Jasa Kontruksi Di Indonesia: Aplikasi Knowledge Based Management System*. Jakarta: Center for Construction and Infrastructure Studies.
- Tanaka, J. S. and Huba, G. J. (1989) 'A general coefficient of determination for covariance structure models under arbitrary GLS estimation', *British Journal of Mathematical and Statistical Psychology*. doi: 10.1111/j.2044-8317.1989.tb00912.x.
- Tonhäuser, C. and Büker, L. (2016) 'Determinants of transfer of training: A comprehensive literature review', *International Journal for Research in Vocational Education and Training*. doi: 10.13152/IJRVET.3.2.4.
- Ulrich, D. and Brockbank, W. (2005) 'HR Value Proposition (Hardcover)', in *Harvard Business School Press Books*.
- Undang-undang no 2 tahun 2017* (no date).
- Waluyo, M. (2011) *Panduan dan Aplikasi Structural Equation Modelling*. Jakarta: Indeks Ltd.
- Weisweiler, S. *et al.* (2013) 'Gaining insight to transfer of training through the lens of social psychology', *Educational Research Review*. doi: 10.1016/j.edurev.2012.05.006.
- World Bank. (2017) *World Development Indicators*. Washington DC: World Bank, Washington, DC.