

**THE IMPACT OF TRAINING DEVELOPMENT, WORK ENVIRONMENT,  
MOTIVATION AND COMPETENCY ON EMPLOYEE PERFORMANCE:  
MEDIATED BY JOB SATISFACTION A CASE STUDY OF PT ADHI KARYA  
(PERSERO) TBK DPKA**

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**ABSTRACT**

With job satisfaction acting as a mediating variable, this study examines how employee performance is influenced by training development, work environment, motivation, and competence. Employees of PT. Adhi Karya, Tbk DPKA were given questionnaires as part of the data collection process. This study's sample consisted of 59 respondents who were selected using a proportionate and cluster sampling technique. Convergent validity, discriminant validity, composite reliability, Average Variance Extracted (AVE), Collinearity Statistics (VIF), path coefficient test, bootstrap test, and Structural Equation Modelling (SEM) test were all used to examine the data after it was processed using Smart PLS. This study indicates that motivation and training development have a positive and significant impact on job satisfaction. Job satisfaction is negatively and not significantly impacted by the work environment and skills. Additional findings show that while job satisfaction can influence employee motivation and training development, it cannot influence the work environment or competence. This research is expected to be an additional reference for company to improve quality in terms of employee performance. This research is extraordinary, for the sake of improvement in the future.

**Keywords :** *Training Development; Work Environment; Motivation; Competence; Job Satisfaction; Performance*

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## INTRODUCTION

The intensity of competition and price wars between the construction industry has forced the Company to redefine its vision and mission: To become an innovative corporation with a superior culture for sustainable growth. Because of its limited liability company character, Company is encouraged to keep doing what's best for all parties involved as it develops and as Indonesia's construction sector continues to advance.

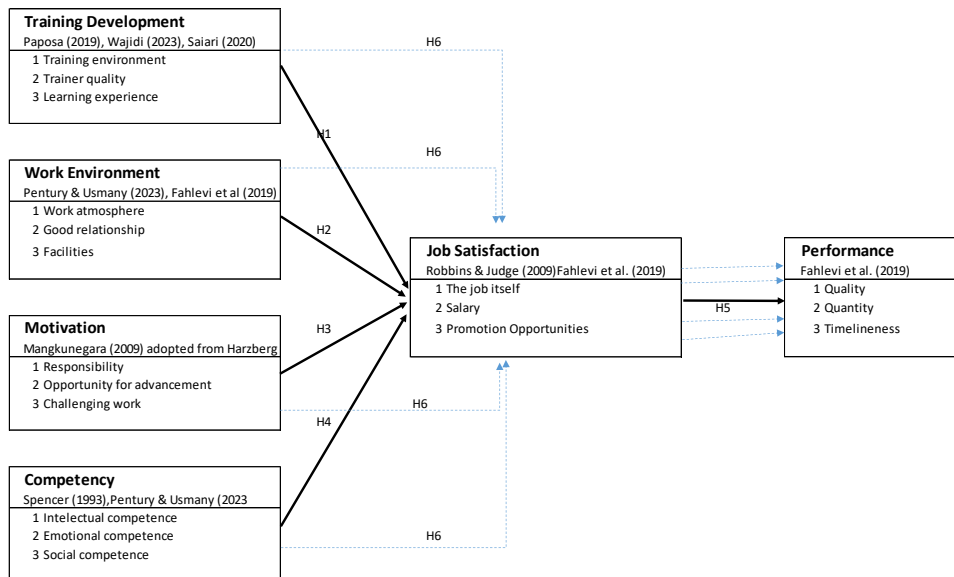
Human Resources (HR) has a very important role in the company, because it is appropriate when management provides more attention through policies taken to improve employee performance ([Brewster et al., 2016](#); [Tessem et al., 2015](#)). Now many problems arise related to employment especially the performance of employees, therefore problems related to performance need to be sought out the way out ([Leonnard, 2018](#)). Every employee in a company is required to make a positive contribution through good performance, given the performance of the company depending on the performance of its employees ([Riwukore et al., 2022](#)). Performance is the level of the employees achieving the requirements of the work efficiently and effectively Simamora (2006). Employee performance is a working achievement, which is a comparison of work that can be seen in real life with the organization's predefined work standards ([Rosalia et al., 2020](#)). Then Robbins (2008) defines the performance of an outcome achieved by the employee in his job according to certain criteria that apply to a job. It is believed that teams are an essential part of work performance and increased productivity ([Du Plessis et al., 2015](#)).

In order to pursue new projects, The number of employees required to manage the project. Company is targeting multiple new initiatives, so it needs a number of employee that are qualified in their respective fields. Contractors operating in Indonesia are mandated to have construction experts/technicians in every discipline whose proficiency is validated through official documentation in the form of SKK. Construction professionals and technicians need to pass an evaluation process that evaluates their operational, technical, and cognitive skills based on their work experience in order to receive this SKK. Taking into account the background data, this study would like to suggest the following problems: 1) There is a gap between employee needs and availability; 2) How to catch-up employee competency for assignment in the project; 3) Does

training development, work environment, motivation and competency affect satisfaction.

### Theoretical Conceptual Framework

In this research, there are 6 variables are analyzed: Training Development, Work Environment, Motivation, Competency, Job Satisfaction and Employee Performance. Based on explanation above, below is theoretical conceptual framework, illustrated as Figure 1.



**Figure 1** Proposed Research Model by researcher (2024)

Source: Author, 2024

Refer to the research framework, they are 6 hypotheses that going to be tested.

- H1: Training Development has a positive effect on Job Satisfaction.
- H2: Work environment has a positive effect on Job Satisfaction.
- H3: Motivation has a positive effect on Job Satisfaction.
- H4: Competency has a positive effect on Job Satisfaction.
- H5: Job Satisfaction has a positive effect on Employee Performance.
- H6: Training & Development, Work Environment, Employee Motivation and Employee Competence has a positive effect on Performance which is mediated Job Satisfaction

### RESEARCH METHOD

This study will use a Survey strategy and will involve cluster and proposional sampling a representative proportion of the population to observe contributing variables and permits the collection of vast data will be used to answer the research question/statement. Primary data is data directly obtained by the researcher from the questionnaire sent out and filled in for survey from the original source.

Most of the questionnaire will use ordinal scale, according to Uma Sekaran (2016) an ordinal scale not only categorizes the variables in such a way as to denote differences among the various categories, it also rank orders the categories in some meaningful way. With any variable for which the categories are to be ordered according to some preference, the ordinal scale would be used. The ordinal scale used will be mostly Likert scale, which is designed to examined how strongly subjects are agree or disagree with statements on a five points scale. A likert scale

question is a type of question in which the answer to the question is in the form of a five-point scale. This study uses cluster sampling as the sampling design. The population of the study is employee at PT. Adhi Karya (Persero) Tbk DPKA.

To considering how many samples will be generated, there are some literature to take into account. The number of samples can affect the validity of the study. That is because, the more samples or respondents in this study, the data will become more normally distributed. The required sample size for this research will be 48.

In accordance with this research title in this thesis: The impact of Training Development, Work Environment, Motivation and Competency on Job satisfaction and Performance. In this study, 6 (two) research variables were used as follows: performance (P) is the dependent variable, job satisfaction (JS) is the mediating variable, Training Development (TD), work environment (WE), Motivation (M), Competency (C) is independent variable. The research variables are measured in a five-point Likert scale from strongly disagree (1) to agree (5) for each given statement strongly.

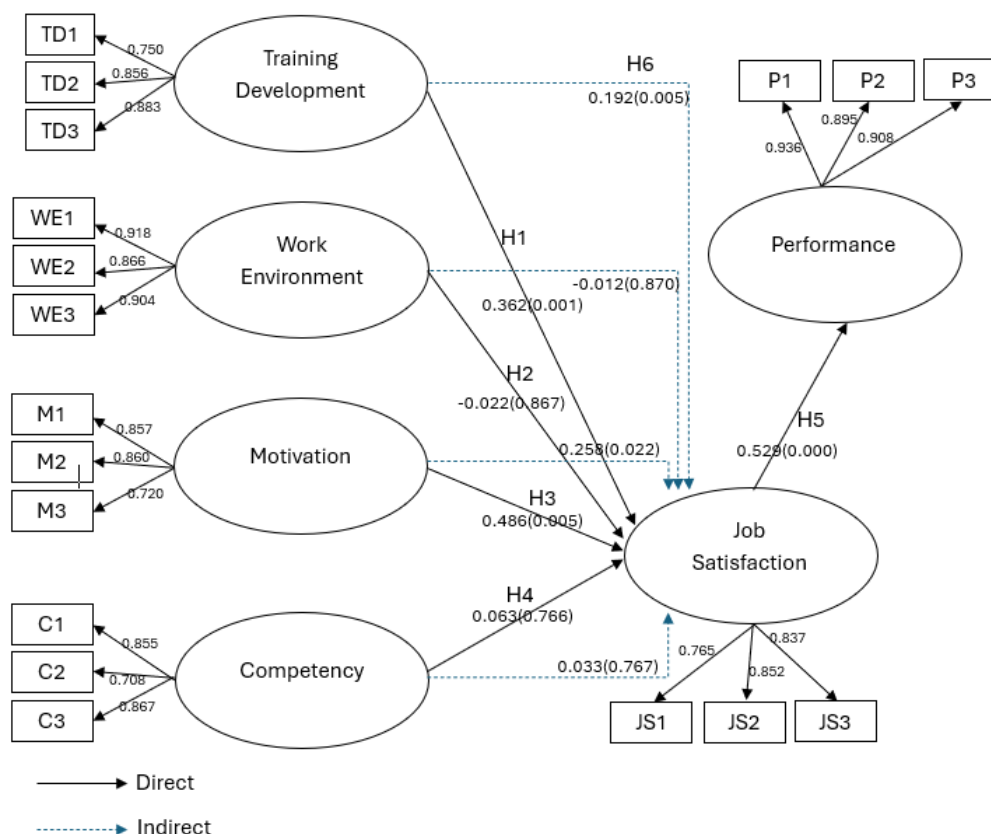
The indicator used to measure Training Development refers to [Paposa & Kumar \(2019\)](#), [Wajidi et al. \(2023\)](#) and [Saiari et al. \(2020\)](#). The indicator used to measure Work Environment refers to [Fahlevi et al. \(2019\)](#) and [Pentury & Usmany \(2023\)](#). The indicators used to measure motivation refer to [Mangkunegara \(2009\)](#) adopted from [Harzberg](#). The indicator used to measure Competency refers to [Pentury & Usmany \(2023\)](#). The indicator used to measure job satisfaction according to [Mulyadi \(2012\)](#) adopted from [Robbins](#), [Fahlevi et al. \(2019\)](#). The indicators used to measure employee performance according to [Fahlevi et al. \(2019\)](#).

## **RESULT AND DISCUSSION**

Data analysis starting with data collection, and coding, then followed by data validity and reliability check using SPSS (Statistical Package for Social Sciences) software version 29. Prior to hypothesis checking, we need to analyze the model using SEM-PLS 4 software approach utilizing Smart PLS software.

### **Measurement Model Evaluation**

To determine how well the data suits the theory is by evaluating the path model. The evaluation consists of two processes. The first evaluation is the measurement model and then evaluation of the structural model. There are 3 (three) criteria for measurement model evaluation i.e. internal consistency, convergent validity, and discriminant validity.



**Figure 2** Path Coefficient Graphic

Source: PLS data process, 2024

Internal Consistency Reliability, the results obtained from the questionnaire data process using PLS, based on table 4.4 below, show that all research variable indicators have Composite Reliability and Cronbach Alpha varies above 0.7. A higher value indicating a higher level of reliability. Based on the result, it can be concluded all the constructs above have a higher level of internal consistency Reliability.

Convergent Validity, there are 2 (two) criteria to determine Convergent Validity i.e. Outer Loading and Average Variance Extracted (AVE). From table 4.4 below, all the constructs have the outer loading value above 0.7. the standardized outer loading should be  $\geq 0.708$  (F. J. Hair et al., 2014). It can be concluded that all indicators have high outer loading. An AVE value above 0.5 indicates that the constructs have good validity (Ghozali, 2018). The result value of AVE on table 4.4 are above of minimum level of 0.5, thus based on both criteria above, we can conclude that all the construct measures have high levels of convergent validity.

**Table 1** Construct Reliability and Validity Result

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	AVE
Training & Development	TD1	0.750	0.780	0.870	0.692
	TD2	0.856			
	TD3	0.883			
Work Environment	WE1	0.918	0.877	0.924	0.803
	WE2	0.866			
	WE3	0.904			
Motivation	M1	0.857	0.748	0.855	0.664

	M2	0.860			
	M3	0.720			
Competency	C1	0.855			
	C2	0.708	0,744	0.853	0.662
	C3	0.867			
Job Satisfaction	JS1	0.765			
	JS2	0.852	0.755	0.859	0.671
	JS3	0.837			
Performance	P1	0.936			
	P2	0.895	0.901	0.938	0.834
	P3	0.908			

Source: PLS data process, 2024

Discriminant Validity, discriminant validity is the extent to which a research variable differs from other variables. We use Cross Loading and Fornell-Larcker indicators to determine the discriminant validity of the construct. The result of cross-loading is presented in table 4.5 below. The value of outer loading indicators (C1, C2, C3) on the Competency construct is higher outer loading than the cross-loading of (C1, C2 C3) on the construct of Job Satisfaction, Motivation, Performance, Training & Development and Work Environment. It can be concluded that the correlation of constructs is eligible for discriminant validity.

**Table 2** Cross Loading Result

	Competency	Job Satisfaction	Motivation	Performance	Training & Development	Work Environment
C1	<b>0.855</b>	0.506	0.643	0.478	0.483	0.492
C2	<b>0.708</b>	0.341	0.454	0.372	0.360	0.682
C3	<b>0.867</b>	0.458	0.526	0.557	0.284	0.564
JS1	0.621	<b>0.765</b>	0.631	0.546	0.561	0.482
JS2	0.404	<b>0.852</b>	0.646	0.411	0.550	0.497
JS3	0.266	<b>0.837</b>	0.563	0.313	0.609	0.468
M1	0.640	0.665	<b>0.857</b>	0.725	0.467	0.542
M2	0.416	0.683	<b>0.860</b>	0.434	0.667	0.603
M3	0.631	0.470	<b>0.720</b>	0.272	0.490	0.540
P1	0.493	0.515	0.534	<b>0.936</b>	0.355	0.400
P2	0.677	0.467	0.606	<b>0.895</b>	0.343	0.541
P3	0.431	0.467	0.523	<b>0.908</b>	0.313	0.332
TD1	0.266	0.449	0.402	0.262	<b>0.750</b>	0.453
TD2	0.319	0.536	0.479	0.255	<b>0.856</b>	0.542
TD3	0.519	0.716	0.717	0.382	<b>0.883</b>	0.613
WE1	0.607	0.570	0.665	0.425	0.694	<b>0.918</b>
WE2	0.698	0.499	0.530	0.366	0.485	<b>0.866</b>
WE3	0.558	0.519	0.641	0.452	0.565	<b>0.904</b>

Source: PLS data process, 2024

The second criteria are the Fornell Larcker which compares the correlation of the variable with the square root of the construct's AVE. The result of the square roots of each construct's AVE must be greater than its highest correlations with any other constructs in the path model. According to table 4.6 below, the construct Competency (C) has a value of 0.813 for the square roots of its AVE which higher than all correlation values in the column Competency (C). Construct of Job Satisfaction (JS) 0.819, Motivation (M) 0.815, Performance (P) 0.913, Training Development (TD) 0.832, and Work Environment (WE) 0.896 are higher than all correlation values in both rows and columns. This is evidence of discriminant validity.

**Table 3** Fornell-Larcker Criterion

	Competency	Performance	Job Satisfaction	Motivation	Training & Development	Work Environment
Competency	<b>0.813</b>					
Job Satisfaction	0.543	<b>0.819</b>				
Motivation	0.673	0.755	<b>0.815</b>			
Performance	0.582	0.529	0.606	<b>0.913</b>		
Training & Development	0.464	0.701	0.666	0.369	<b>0.832</b>	
Work Environment	0.691	0.592	0.686	0.463	0.653	<b>0.896</b>

Source: PLS data process, 2024

### Structural Model Evaluation

Evaluating the structural model consists of assessing for collinearity issues (VIF), path coefficient ( $\beta$ ), coefficient of determination ( $R^2$ ), the effect sizes ( $f^2$ ) (F. J. Hair et al., 2014). The coefficient of determination - R Squared ( $R^2$ ) measures the dependent variable's variance in relation to the independent variable's change. The  $R^2$  value ranges from 0 to 1 (Table 4), with a higher score showing higher precision levels.  $R^2$  values of 0.25, 0.5, or 0.75 for an endogenous variable can be portrayed as weak, moderate, or substantial (J. F. Hair et al., 2011). As can be seen in Table 4.8 the  $R^2$  of Competitive Advantage, has moderate level (0.642), and for Improvisational Competence is weak (0.280).

**Table 4** Coefficient of Determination ( $R^2$ )

	R square
Job Satisfaction	0.643
Performance	0.280

Source: PLS data process, 2024

The second criteria on structural model evaluation are path coefficient, which shows the correlation between two variables, ranging from - 0.00 to 1.00. A correlation of 0 shows no relationship (Leonard, 2019), a correlation of 1.0 indicates a perfect positive correlation, and a value of -1.0 shows a perfect negative correlation. As shown in Table 4.9, the effect of Motivation (M) on Job Satisfaction (JS) showing by path coefficient ( $\beta$ ) (0.486), indicates a medium effect. A medium effect was also shown on the effect of Training Development to Job Satisfaction (0.362). A strong effect was shown from Job Satisfaction to Performance (0.529). The effect of Work Environment (WE) to Job Satisfaction (JS) showing negative weak effect (-0.022), and a weak effect has shown on the effect of Competency (C) to Job Satisfaction (0.063).

**Table 5** Path coefficient, VIF, and  $f^2$

Effect	Path Coefficient	VIF	$F^2$
Training & Development $\rightarrow$ Job Satisfaction	0.362	2.115	0.174
Work Environment $\rightarrow$ Job Satisfaction	-0.022	2.711	0.000
Motivation $\rightarrow$ Job Satisfaction	0.486	2.669	0.248
Competency $\rightarrow$ Job Satisfaction	0.063	2.283	0.005
Job Satisfaction $\rightarrow$ Performance	0.529	1.000	0.389

Source: PLS data process, 2024

The third criterion in structural model evaluation is multicollinearity. The result in Table 5 indicates of no collinearity issues because all of the VIF value below 5 (F. J. Hair et al., 2014).

The fourth criterion in structural model evaluation is the  $f^2$  values, which assesses a predictor variable's comparative influence on an independent variable (F. J. Hair et al., 2014). The  $f^2$  which ranging from 0.02, 0.15, and 0.35, correspondingly, indicate small, medium, and large effect sizes (Cohen, 2016). The results in Table 4.9 shown for the current study that the model has a small (0.000) effect of Work Environment (WE) to Job Satisfaction (JS) and (0.005) effect of Competency (C) to Job Satisfaction (JS). A medium  $f^2$  is on the effect Training Development (TD) to Job Satisfaction (JS) (0.174) and the effect of Motivation (M) to Job Satisfaction (JS) (0.248). Large  $f^2$  is shown for Job Satisfaction to Performance (0.389).

### Hypothesis Testing

This study employed critical values for one-tailed tests: 1.65 (significance level= 5%), (F. J. Hair et al., 2014). The hypothesis was tested using the bootstrapping test that obtains the significance of path coefficients by calculating empirical t values, which are larger than the critical value (t distribution values). The coefficient is considered significant at a particular probability of error. Hair et al. (2014) recommend that the bootstrap samples are 5.000. Hypotheses testing was carried out using the bootstrapping technique in SmartPLS4 to assess path coefficients' significance and t values. Using one tails t-value is 1.65, and p-value 0.05 (at  $\alpha = 5\%$ ) (F. J. Hair et al., 2014). The result is reported in Table 4.10.

**Table 6** Hypothesis Testing Result

Hypothesis	Path Coefficient	T Statistics	p-value	Result
H1. TD → JS	0.362	3.369	0.001	H1 supported
H2. WE → JS	-0.022	0.167	0.867	H2 not supported
H3. M → JS	0.486	2.804	0.005	H3 supported
H4. C → JS	0.063	0.298	0.766	H4 not supported
H5. JS → P	0.529	5.631	0.000	H5 supported
H6a. TD → JS → P	0.192	2.784	0.005	H6a supported
H6b. WE → JS → P	-0.012	0.163	0.870	H6b not supported
H6c. M → JS → P	0.258	2.295	0.022	H6c supported
H6d. C → JS → P	0.033	0.296	0.767	H6c not supported

Source: PLS data process, 2024

### Discussion on Findings

#### a. The effect of Training Development (TD) on Job Satisfaction (JS)

In the H1 hypothesis, it is said that Training Development (TD) has a significant positive effect on Job Satisfaction. This can be seen from the T-Value which showed a value of 3.369 which was greater than the T-Table 1.65. The effect given by the training development variable was positive, which means that if the training development variable increased, the job satisfaction variable would also increase. Training Development has a 2<sup>nd</sup> impact to job satisfaction after Motivation. Therefore, in theory, better training and development opportunity is associated with more job satisfaction and furthermore has a significant impact on it (Paposa & Kumar, 2019). Training contains aspects of knowledge, skills and abilities of personality characteristics that affect job satisfaction. Employee who has high work skills from the results of finding of this study support research of Sumarni et al. (2021) and Ullah et al. (2020), where the findings from the study indicate that there is a strong correlation between training and job satisfaction.



b. The effect of Work Environment (WE) on Job Satisfaction (JS)

In the H2 hypothesis, based on the test of the work environment variable on job satisfaction, a P-value of  $0.867 > 0$ , it can be concluded that the work environment has a negative and insignificant effect on job satisfaction, so H2 is rejected. Thus, it is not in line with previous research conducted by [Kharisma & Rosia \(2022\)](#) concluded that work environment affects job satisfaction. Based on the findings of this study and previous research, the researcher argues that work environment do not correlated on job satisfaction ([Agbozo, 2017](#)). From here work comfort caused by the work environment can also affect the satisfaction of workers. A comfortable work environment will certainly affect the comfort of employees completing their work. From the respondent age profile, the majority age of respondents is between 41 – 50 years old and 31 – 40 years old. And also respondents work between more than 6 years is 62.7%. This mean that respondent already working for a long time in one job. They need different ambient for working so management needs to make job rotations for the employee, so it can increase a conducive workplace environmental then employee will be encouraged to work with the better.

c. The effect of Motivation (M) on Job Satisfaction (JS)

In the H3 hypothesis, it was found that the results of the analysis supported the hypothesis that the Motivation had a significant positive effect on job satisfaction. This can be seen from the T-Value which showed a value of 2.804 which was greater than the T-Table 1.65. The effect given by the motivation variable was positive, which means that if the motivation variable increased, the job satisfaction variable would also increase. The motivation has the most effect on employee job satisfaction ([Nurjuha et al., 2022](#)). Work is improved, so job satisfaction variables will also increase. The aspect of motivation, desire to complete the work and obedience the rules, company pay attention with education and promotion and desire working better than before, give a positive response to aspects of motivation. The result of this study is in accordance with the supporting theories, while in this study there are significant similarities in results with previous research conducted ([Natsir & D'Ornay, 2022](#); [Ng et al., 2023](#); [Sinaga et al., 2023](#)).

d. The effect of Competency (C) on Job Satisfaction (JS)

Based on the results H4 of the analysis presented in this study, it is known that the competency variable has a t-statistic value (0.298) that is smaller than the t-table 1.65 and a p-value greater than 5% ( $0.050 \geq 0.05$ ), so that the H4 hypothesis is rejected, which indicates that it does not exist the influence of competence on employee job satisfaction. The results of testing this hypothesis indicate that when employees work according to their competence, it will increase their sense of satisfaction at work, but on the other hand, employees feel not challenged because the work they are doing is considered too easy for them.

Based on the findings of this study, the researcher argues that competent employees and being able to apply them to the business world will give them a sense of satisfaction, where employees will feel that the characteristics that exist in them can be applied or applied to the world of work so that employees will have a sense of to look for new experiences by trying to do experiments that are considered better than what they currently have.

e. The effect of Job Satisfaction (JS) on Performance (P)

On the results of testing H5 hypothesis, it was found that the results of the analysis supported the hypothesis that job satisfaction had a significant positive effect on performance. This can be seen from the T-Value which showed a value of 5.631 which was greater than the T-Table 1.65. The effect given by the job satisfaction variable was positive, which means if the job satisfaction variable increased then the performance variable would also increase.

f. The effect of Training Development (TD), Work Environment (WE), Motivation (M), Competency (C) on Performance (P), with mediating Job Satisfaction (JS) on the results of testing H6 hypothesis, Job Satisfaction as a mediating variable can strengthen the effect of



the Training Development on Performance. To find out the direct effect between the training development and job satisfaction. The test results can be concluded that the hypothesis H6a which states that the training development has a significant effect on performance through job satisfaction. Because of Training Development has a significant positive effect on job satisfaction and job satisfaction has a significant positive effect on performance. As a mediating variable, job satisfaction strengthens the influence of the training development on performance, this is evidenced by adding up the direct effect of the training development on job satisfaction with the direct influence of the training on performance.

It is the same with Job Satisfaction as a mediating variable the effect of the motivation on performance. The test results can be concluded that the Hypothesis H6c which states that the motivation has significant effects on performance through job satisfaction. Motivation has a significant positive effect on job satisfaction and job satisfaction has a significant positive effect on performance. As a mediating variable, job satisfaction strengthens the influence of motivation on performance.

Meanwhile work environment has a negative and insignificant effect on job satisfaction and job satisfaction as mediating variable on performance. This means that job satisfaction does not mediate of work environment on performance, employees can not be satisfied also with their workplace environment.

And also competency has a negative and insignificant effect on job satisfaction and job satisfaction as mediating variable on performance. This means that job satisfaction does not mediate of competency on performance, employees cannot be satisfied also with their competency.

## **CONCLUSION**

The result of the research questions as follows: 1) Training Development has positive effect on Job satisfaction at employee PT. Adhi Karya DPKA, it can be considered that good training development will create high job satisfaction; 2) Work Environment has no significant effect on job satisfaction at employee PT. Adhi Karya DPKA; 3) Motivation has positive effect on job satisfaction at employee PT. Adhi Karya DPKA, in can be said that high motivation can support high job satisfaction; 4) Competency have no significant effect on job satisfaction of employee PT. Adhi Karya DPKA; 5) Job satisfaction has positive effect on Performance at employee PT. Adhi Karya DPKA, it can be considered that employee who are satisfied with their work will be able to show better performance in accordance with the needs of organization; 6) Job satisfaction has mediating effect of training development and motivation on performance, and job satisfaction has no mediating effect of work environment and competency on performance.

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