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THE INFLUENCE OF EDUCATION AND TRAINING ON EMPLOYEE WORKING PRODUCTIVITY AT PT. NUSANTARA IV KEBUN MARJANDI

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ABSTRACT: *The Influence of Education and Training on Employee working productivity at PT. Nusantara IV Kebun Marjandi is a study with a sample of 30 people who are determined randomly. The problems in this research are: Do education and training have a significant effect on work productivity? And the research purposes: 1. to find out the effect of education on the work productivity of the employees, 2. to find out how the effect of training on the employees' work productivity. The research hypothesis: 1. Education affects the work productivity of the employees, 2. The training has a significant effect on the work productivity of the employees, 3. Education and training have significant effect on the work productivity of the employees. Multiple regression technique is used to analyze the data. From the research results, it is found that education and training have a significant effect on the work productivity of the employees. Work productivity is 68% explained by education and training, while the remaining 32% is explained by other factors which are not included in the model.*

KEYWORDS: Education, Training, Employee, Pt. Nusantara IV Kebun Marjandi, Working Productivity

INTRODUCTION

Education and training are conducted in order to develop the human resources. Education and training can add knowledge and skills that will ultimately affect the work productivity. Education and training are also intended to adapt to new needs for attitudes, behaviors, skills and knowledge in accordance with current technological change demands. The education and training programs given to the employees are an important step for the companies to improve the human resources in its relationship to increase the work productivity.

METHODOLOGY

Sondang P. Siagian (2013: 180) gives an understanding for both terms as follows: Education is the whole process, techniques and methods of teaching in order to transfer knowledge from one person to another with predefined standards. Meanwhile training is also the process of teaching and learning by using certain techniques and methods. Then Wijaya (2002: 75) also puts forward a similar understanding with the above that is "Education is intended to foster the ability or develop the ability of thinking of the employees, to improve the ability, to issue ideas to the employees so they can perform the duty of the obligations as well as possible". The time required for education is more formal. Meanwhile the training further develops the technical skills so that the employees can run the job as well as possible. Training relates to the teaching work tasks and the time is shorter and less formal.

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According to Mukiyat (1998: 48) work productivity is usually expressed by a counterpart of the average work result in relation to the average hours of work given by the process. According to Komaruddin (1992: 121) productivity in essence includes an attitude that always has a view that the method of work today should be better than yesterday's working methods and tomorrow's results should be more or more qualified than the results achieved today.

Factors Affecting Work Productivity

1. Education and training

2. Discipline

3. Attitude Tasks

4. Income and Warranties

5. Technology

6. Working Environment

Data Analysis Technique

The data analysis techniques used in this study are:

(1) Multiple Linear Regression

The model of multiple linear regression equation used is

$$Y=a+b1X1 + b2X2$$

Where:

Y = the employees, work productivity

a = Constanta

b_1,b_2 = regression coefficient

X_1 = Education

X_2 = Training

Classical Assumption Test

The classical assumption requirements that must be met by multiple linear regression models before the data are analyzed are as follows:

a. Normality Test

Normality test is conducted to determine whether the distribution of the data follow or close to normal distribution. Good data are the data that have a pattern like normal distribution, ie the data distribution is neither tilted to the left nor to the right.

b. Heteroscedasticity Test

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It is conducted to test whether a group has the same variance among the group members.

c. Multicollinearity Test

This means that independent variables with each other in the multiple linear regression methods are not interconnected perfectly.

Coefficient of Determination (R^2)

Coefficient of determination is to find out how much the ability of independent variables explains the dependent variable. The greater the coefficient of determination is, the better the ability of X to explain the variable Y is.

DISCUSSION

Validity Test

Table. 1: The Calculation Result of Validity Test

Item	r_{hitung}	r_{tabel}	Criteria
X_1	0,784	0,361	Valid
$X_{2.1}$	0,728	0,361	Valid
$X_{2.2}$	0,748	0,361	Valid
$X_{2.3}$	0,747	0,361	Valid
$X_{2.4}$	0,779	0,361	Valid
$X_{2.5}$	0,740	0,361	Valid
$X_{2.6}$	0,763	0,361	Valid
$X_{2.7}$	0,755	0,361	Valid
$X_{2.8}$	0,761	0,361	Valid
$X_{2.9}$	0,780	0,361	Valid
$X_{2.10}$	0,761	0,361	Valid
$X_{2.11}$	0,760	0,361	Valid
$X_{2.12}$	0,764	0,361	Valid
X2.13	0,745	0,361	Valid
Y_1	0,745	0,361	Valid
Y_2	0,758	0,361	Valid
Y_3	0,764	0,361	Valid
Y_4	0,751	0,361	Valid
Y_5	0,748	0,361	Valid

Source: Data processed with SPSS ver.20

In the table above, the validity test for each question component of the questionnaire indicates that the questions in the instrument proved to be valid and positive to be used as a research because the total Pearson Corelation value indicates a value of more than 0.361.

Reliability Test

The technique used to measure the reliability level of this instrument is Cronbanch Alpha by comparing the Alpha values with the standard. It is found that the Cronbanch Alpha value> 0.60. (Husein Umar, 2011: 173).

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Table. 2: Reliability Test Results of Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X_1	78.73	13.444	.126	.784
$X_{2.1}$	77.63	11.964	.688	.728
$X_{2.2}$	77.80	12.924	.477	.748
$X_{2.3}$	77.57	12.668	.460	.747
$X_{2.4}$	77.77	14.323	.018	.779
$X_{2.5}$	77.67	12.437	.552	.740
$X_{2.6}$	77.83	13.661	.252	.763
$X_{2.7}$	77.90	13.472	.391	.755
$X_{2.8}$	77.90	13.748	.280	.761
$X_{2.9}$	77.20	14.579	-.048	.780
$X_{2.10}$	77.73	13.375	.291	.761
$X_{2.11}$	77.20	13.614	.296	.760
$X_{2.12}$	77.50	13.362	.260	.764
$X_{2.13}$	77.77	12.737	.513	.745
Y_1	77.33	12.713	.498	.745
Y_2	77.73	13.237	.333	.758
Y_3	77.90	13.886	.225	.764
Y_4	77.80	13.062	.430	.751
Y_5	77.63	12.723	.454	.748

Source: Data processed with SPSS ver.20

The table above shows the results of reliability testing by using SPSS.ver20. From the results of reliability test obtained the output of each variable namely Education (X1), Training (X2), and Work Productivity (Y) is that each of the three variables above have values above 0.60, so it can be concluded that the measuring instrument In this research instrument is reliable.

Classic Assumption test

Table. 3: Multicollinearity Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.288	2.869		.449	.657		
	Education	.813	.189	.467	4.301	.000	.999	1.001
	Training	.312	.049	.695	6.404	.000	.999	1.001

a. Dependent Variable: Work Productivity

Source: processed by the writer via spss ver.20

From the table above the VIF value for the Education variable (X1) and Training variable (X2) are both 1.001 while the Tolerance is 0.999. Because of the VIF value of the two variables is no larger than 10 or 5, it can be said that there is no multicollinearity in both free variables.

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Based on the classical assumption of linear regression with OLS, a good linear regression model is free from multicollinearity. Thus, the above model has been freed from the existence of multicollinearity.

Table. 4: Autocorrelation Result

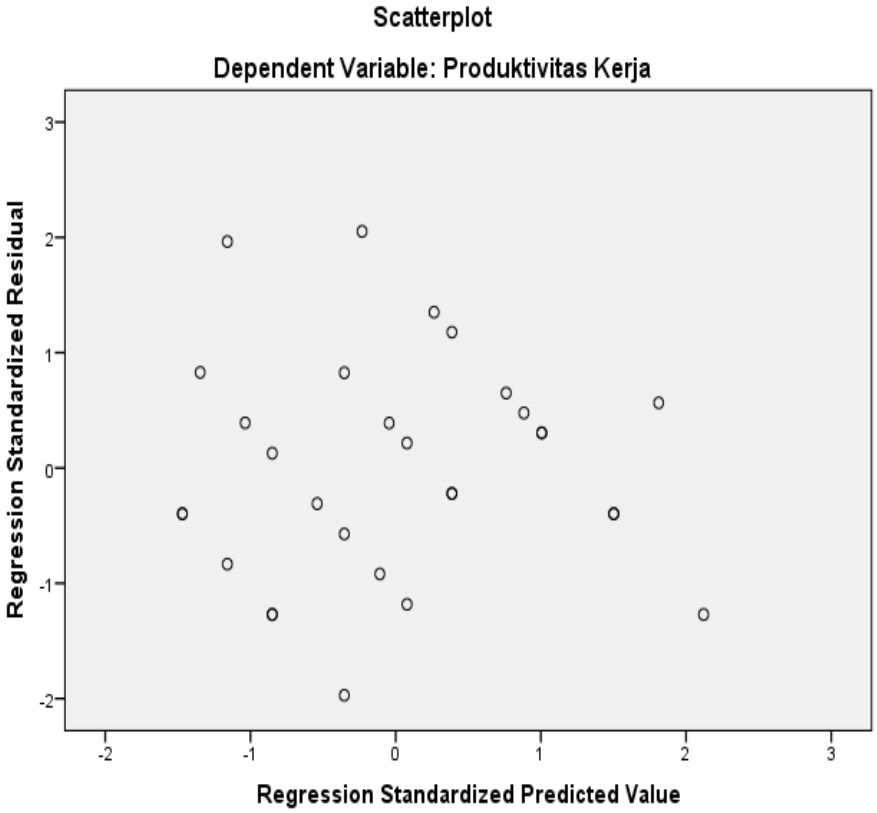
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.826[a]	.682	.658	.715	1.645

a. Predictors: (Constant), Training, Education
b. Dependent Variable: Work Productiity
Source: processed by the writer via spss ver.20

From the table above, it can be seen that Durbin-Watson value of 1.645 is greater than 1.539 and smaller than 2.481 which means it is in the area which there is no autocorrelation. So it can be concluded that in the linear regression model there is no autocorrelation.

Figure. 1: Heteroscedasticity Test



Source: processed by the writer via spss ver.20

The picture above shows that the spreading point does not form a particular pattern/path, so it can be concluded there is no Heteroscedasticity or in other words Homooscedasticity occurs. The classical assumption about Heteroscedasticity in this model is met, i.e. free from Heteroscedasticity.

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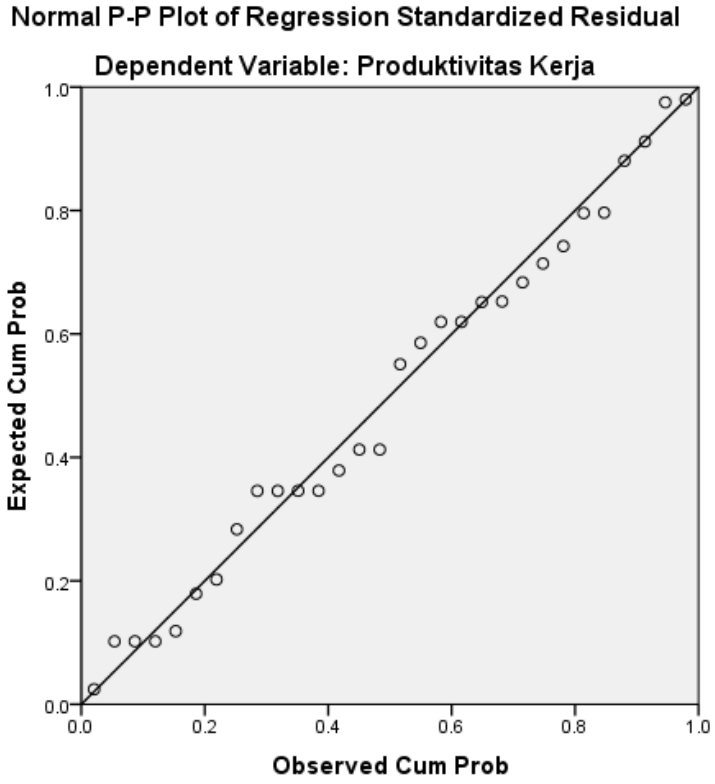
Normality Test

Figure. 2: Normality Test

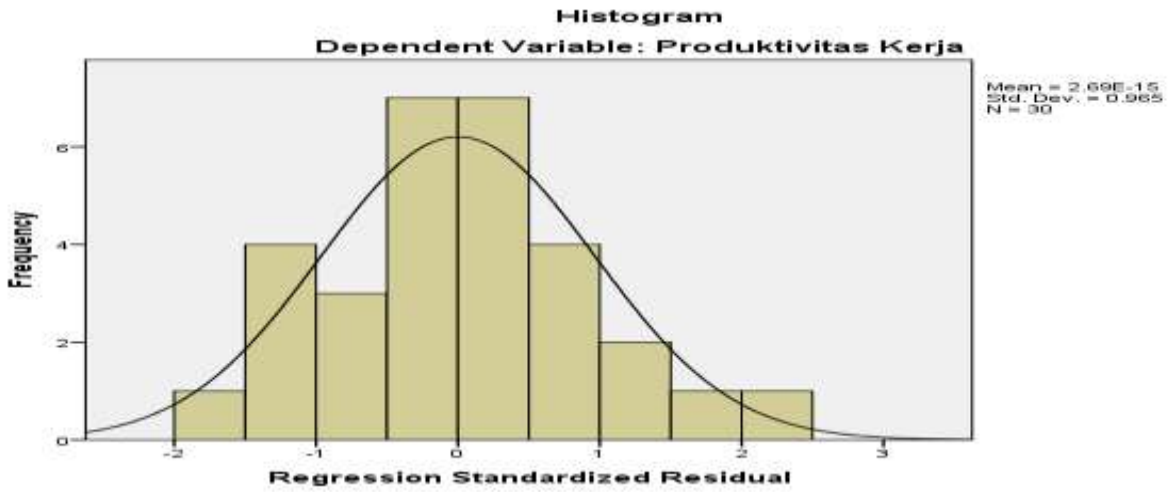


Source: processed by the writer via spss ver.20

From the Normal picture P-P Plot above, it is relatively close to a straight line, so it can be concluded that residual data is normally distributed. This result is in line with the classical assumption of linear regression with OLS approach.

Histogram

Picture.1



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Source: processed by the writer via spss ver.20

In the histogram graph above, it is seen the normal distributed variables, this is shown that the data distribution does not missed left or right.

Model Feasibility Test

Table. 5: Feasibility Model Test Result (F_{Test})

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.572	2	14.786	28.940	.000[b]
	Residual	13.795	27	.511		
	Total	43.367	29			

a. Dependent Variable: Work Productivity
b. Predictors: (Constant), Training, Education

Source: processed by the writer via spss ver.20

From the table above, it is seen the prob. $F_{arithmetic}$ (sig) value is 0.000 < from the significance level of 0.05 so that the model of regression equation based on the research data of education and training simultaneously have a significant effect on working productivity.

Table. 6: Regression Coefficient Test Result (t_{test})

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.288	2.869		.449	.657		
	Pendidikan	.813	.189	.467	4.301	.000	.999	1.001
	Pelatihan	.312	.049	.695	6.404	.000	.999	1.001

a. Dependent Variable: Work Productivity

Source: processed by the writer via spss ver.20

From these data, educational variable tsig (, 000) < 0.05, education influences significantly to the productivity. For training variable of tsig (, 000) < 0.05, training has a significant effect on the productivity.

Coefficient of Determination

Table 7: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.826[a]	.682	.658	.715	1.645

a. Predictors: (Constant), Training, Education
b. Dependent Variable: Work Productivity

Source: processed by the writer via spss ver.20

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When viewing from the R-Square value of 0.682, this means that the productivity is explained by education and training 68%, while the remaining 32% is explained by other factors that do not exist in this research model.

Interpretation Model

Table 8

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.288	2.869		.449	.657		
	Education	.813	.189	.467	4.301	.000	.999	1.001
	Training	.312	.049	.695	6.404	.000	.999	1.001

a. Dependent Variable: Work Productivity

Source: processed by the writer via spss ver.20

Based on the above table, it is obtained the regression equation as follows:

$$Y = 1{,}288 + 0{,}813X_1 + 0{,}312X2$$

The regression equation can be explained as follows:

a = 1,288, if the Education variable (X_1) and the Training variable (X_2) are constant, then the value of Work Productivity variable (Y) = 1,288.

b1 = 0,813 if the increase of education variable (X_1) equals to 1 unit, it will cause the increase of work productivity variable (Y) which equals to 0,813

b2 = 0,312 if increase of Training variable (X_2) equals to 1 unit, it will cause the increase of Work Productivity (Y) which equals to 0,312

CONCLUSION

Based on the research results and discussion above, it can be concluded that education and training have a significant effects on the employees' work productivity because with education and training, it can foster the ability or develop the ability to think the employees, to improve the ability, to issue ideas to employees so that they can perform the tasks with their best that finally will positively affect the employee' work productivity. Therefore in order the company to further improve the employees' work productivity, it is recommended to improve the education and training programs for employees in the future in a sustainable manner.

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