

Application of Multilinear Regression Analysis to Analyze the Effectiveness of Employee Performance in the Banking Industry

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Abstract

The purpose of this research is to determine the influence of the recruitment and selection process on employee performance at PT. Bank Perkreditan Rakyat Duta Paramarta Medan. The population in this research is all employees of PT. Bank Perkreditan Rakyat Duta Paramarta Medan, totaling 33 people with saturated sampling. This type of research is quantitative. Quantitative research is research that aims to determine the degree of relationship and pattern or form of influence between two or more variables. Through this research, a theory will be built those functions to explain, predict, and control a phenomenon. Data collection techniques in this research were observation, interviews, questionnaires, and documentation. Meanwhile, the data analysis method is quantitative and multiple linear regression with hypothesis testing using t test analysis, the F test, and the coefficient of determination (R²). The results of the multiple regression analysis are $Y = 3.696 + 0.393X_1 + 0.465X_2$, which shows an increase in the recruitment process on employee performance by 0.393 units and selection by 0.465 units. Meanwhile, the results of the partial test (t test) show that there is a positive and significant influence of the recruitment process on employee performance with t-count = 3.672 > t-table 1.697 at $\alpha = 0.01$ and the selection variable has a positive and significant effect of selection on employee performance where it can be seen that the t-count value = 3.692 > t-table = 1.697 at $\alpha = 0.01$. The coefficient of determination (R²) with adjusted R² is 0.709, meaning that the recruitment and selection variables can explain the employee performance variable by 70.9%, while the remaining 29.1% is explained by other variables outside the model. So, it can be concluded that there is a positive and significant influence of the recruitment and selection process on employee performance at PT. Bank Perkreditan Rakyat Duta Paramarta Medan.

Keywords: recruitment, selection, employee performance.

INTRODUCTION

Every company expects good performance from each employee in carrying out the tasks assigned by the company to create a work balance. Companies realize that human resources (HR) are the basic capital in the development process. [1] In carrying out development, of course, you will understand the concept of balanced development. It is hoped that the balance

will create harmony between development goals and the socio-economic development of the local community in order to create prosperity.

For companies, conducting work assessments is an activity to help companies improve employee performance, which has an impact on company profits, while for employees, as human capital, it can spur and motivate employees to improve their performance. [2] Human capital is able to have a positive impact on the company, and employees also receive feedback on the work results achieved and collective welfare.

PT Bank Perkreditan Rakyat Duta Paramarta is a bank financial institution that accepts deposits only in the form of time deposits, savings, and/or other similar forms and distributes funds as a BPR business. The aim of BPR is to support the implementation of national development in order to increase equality, economic growth, and national stability while increasing the welfare of the people at large. The function of BPR is not only to distribute credit to micro, small, and medium entrepreneurs but also to receive savings from the community and increase working human resources.

The main focus of human resources management (HR) is to contribute to the success of the company. In order for the company's productivity to run smoothly, it requires a workforce or employees who comply with the principle of "the right men and the right place." [3] The main key is the recruitment and selection process to recruit workers according to their needs, which is able to improve the quality of workers and their welfare based on the system created.

This phenomenon influences employee work effectiveness. Because effectiveness relates to the level of achievement of company goals, both implicitly and explicitly, namely how far plans can be implemented and goals achieved, based on the explanations above, the author is interested in researching "Study of Employee Performance Effectiveness as an Implementation of Work Success in the City of Medan, Case Study: PT. Bank Perkreditan Rakyat Duta Paramarta Medan."

1. 1. Problem Formulation

Based on this background, the researcher identified the problem as: "Is there an influence of the recruitment and selection process on the employee performance of PT. Bank Perkreditan Rakyat Duta Paramarta Medan?"

1.2. Priority of Research

The priority of this research is that it is hoped that it can serve as knowledge that can determine problems related to employee work systems and employee work effectiveness and as a reference for scientific development that can be used for future scientific development.

METHOD

2.1. Types of research

Based on the description above, this research uses a quantitative descriptive approach. Certain populations and samples with data collection using research instruments, quantitative and statistical data analysis with the aim of testing predetermined hypotheses.

2.2. Population and Sample

In this study, the population was employees of the HR division/department at PT. BPR Duta Paramarta, which has 33 employees, all of whom were selected using saturated sampling.

2.3. Data source

Data sources are classified into two categories, namely:

1. Primary data: comes from original sources and is collected specifically to answer research questions, such as questionnaires.
2. Secondary data: scientific journals and books.

So, researchers use both data, namely primary data and secondary data.

2.4. Method of collecting data

1. Questionnaire

2. Observation

3. Interview

4. Documentation

2.5. Validity and Reliability Test

2.5.1. Validity test

The validity test functions to measure whether the data obtained after research is valid or invalid using the measuring instrument used (a questionnaire).

2.5.2. Reliability Test

Reliability is the level of constraint on a research instrument. A reliable instrument is an instrument that, when used repeatedly to measure the same object, will produce the same data.

2.6. Classic assumption test

The classical assumption tests used are the normality test, the multicollinearity test, and the heteroscedasticity test.

2.7. Data analysis method

The data that has been collected is analyzed using analysis as following:

1. Descriptive Method

The descriptive method is a method where the data that has been obtained is compiled, grouped, analyzed, and then interpreted so that a picture of the problem faced is obtained and to explain the research results.

2. Multiple Linear Regression Analysis Method

Researchers use the multiple regression analysis method to determine how much of an impact the independent variables (recruitment and selection) have on the dependent variable (employee performance). The multiple regression model used is:

$$Y = a + b_1 X_1 + b_2 X_2 + e$$

Which can be interpreted as follows:

$$\text{Employee performance} = a + b_1 \text{ recruitment} + b_2 \text{ selection} + e$$

For analysis and hypothesis testing purposes, it is processed statistically using the SPSS version 20 program tools.

2.8. Hypothesis testing

Hypothesis testing used is a partial test (t test), a simultaneous test (f test), and a determinant coefficient (R²).

RESULT AND DISCUSSION

3.1. A Brief History of the Company

PT. BPR Talabumi Pancur Batu, which has its head office at Jl. Jend. Jamin Ginting No. 37, Pancur Batu District, Deli Serdang Regency, has become a cash office in accordance with BI letter No. 9/725/DPBPR/IDABPR/Mdn dated November 19, 2007, and the office cash, which was previously on Jl. Veteran No. 21E Helvetia Village, Labuhan Deli District, Deli Serdang Regency, moved to Jl. Besar Tembung No. 1A, Percut Sei Tuan District, Deli Serdang Regency, according to BI letter No. 9/726/DPBPR/IDABPR/Mdn dated November 19, 2007. On November 20, 2007, PT BPR Talabumi Pancur Batu moved its head office from Jl. Jend. Jamin Ginting No. 37, Pancur Batu District, Deli Serdang Regency, to Jl. Veteran No. 10E Helvetia Village, Labuhan District, Deli, Deli Serdang Regency, according to BI letter No. 9/732/DPBPR/IDABPR/Mdn.

3.2. Research Result

3.2.1. Validity Test

A good instrument is an instrument that is valid and reliable. Validity tests are carried out to correlate each statement with the total score of each variable. Validity is defined as a test that measures the extent to which the speed and accuracy of a measuring instrument in carrying out its function and the specified statement are declared significant.

3.2.2. Reliability Test

The results of the reliability test can be seen in the reliability statistics output. For the variable (Recruitment Process), the Cronbach's Alpha value was 0.773. This value is above 0.60, so it can be concluded that the measuring instrument in this research is reliable. The value obtained is within very high reliability criteria.

Table 1. Recruitment Process Variable Reliability Test Results
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,773	,926	11

Source: SPSS 20.00 Calculation Results.

The results of the reliability test can be seen in the reliability statistics output. For the recruitment process variable, the Cronbach's alpha value was 0.773. This value is above 0.60, so it can be concluded that the measuring instrument used in this research is reliable. The results obtained meet very high reliability criteria.

Table 2. Reliability Test Results for Selection Variables

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,751	,864	11

Source: SPSS 20.00 Calculation Results

The results of the reliability test can be seen in the reliability statistics output. For the selection variable, the Cronbach's alpha value was 0.751. This value is above 0.60, so it can be concluded that the measuring instrument used in this research is reliable. The results obtained meet very high reliability criteria.

Table 3. Reliability Test Results for Employee Performance Variables
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,747	,848	11

Source: The SPSS program version 20.00 processed the data.

The results of the reliability test can be seen in the reliability statistics output. For the employee performance variable, the Cronbach's alpha value was 0.747. This value is above 0.60, so it can be concluded that the measuring instrument used in this research is reliable. The results obtained meet very high reliability criteria.

3.2.3. Classic Assumption Test

The multiple linear regression model uses the classic assumption test, which aims to detect whether the regression used is free from multicollinearity and heteroscedasticity problems.

3.2.4. Normality Test

Based on table 4, it can be seen that the Kolmogorov-Smirnov Z values for recruitment, selection, and employee performance have significant values, all of which are greater than 0.05.

Table 4. One-Sample Kolmogorov-Smirnov Test

		Recruitment Process	Selection	Performance
N		33	33	33
Normal Parameters ^{a,b}	Mean	30,3939	31,5455	30,3030
	Std. Deviation	6,75897	5,74506	5,69257
	Most Extreme Differences			
	Absolute	,093	,117	,110
	Positive	,093	,069	,110
	Negative	-,082	-,117	-,092
Kolmogorov-Smirnov Z		,534	,672	,632
Asymp. Sig. (2-tailed)		,938	,756	,819

a. Test distribution is Normal.

b. Calculated from data.

Source: SPSS data processing version 22.00.

Based on table 4, it can be seen that the Kolmogorov-Smirnov Z values for recruitment, selection, and employee performance have significant values, all of which are greater than 0.05.

3.2.5. Multicollinearity Test

The multicollinearity test is used to detect whether the regression model used is free from multicollinearity problems; it can be seen in Table 5.

Tabel 5. VIP Coefficients^a

Model	Correlations			Collinearity Statistics	
	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)					
Recruitment	,777	,557	,350	,564	1,774
Selection	,777	,559	,352	,564	1,774

a. Dependent Variable: kinerja

Source: SPSS data processing version 22.00.

Based on the data above, it can be seen that the correlation between the independent variables shows a moderate correlation (<0.7), which means there are no multicollinearity problems.

3.2.6. Heteroscedasticity Test

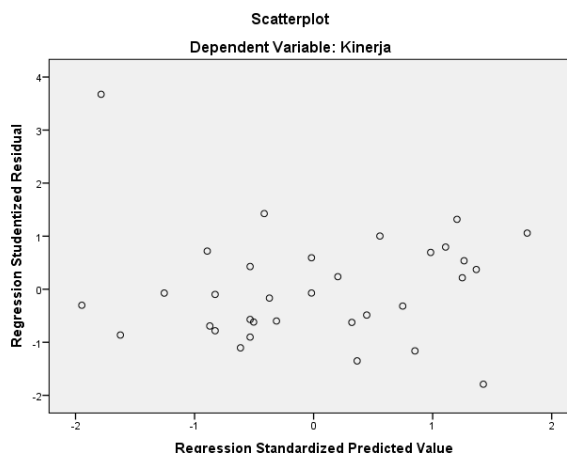


Figure 1. Residual Standard Regression Scatterplot

The figure shows that the data points are spread around the number 0 both above and below the number 0 on the Y axis and do not gather at one point. The distribution of data points also forms a pattern. So it can be concluded that the regression model in this research does not experience heteroscedasticity problems, so this regression model is suitable for use.

3.3. Multiple Linear Regression Analysis

3.3.1 T Test (Partial Test)

The t test (partial test) is carried out to see the significant individual influence of the independent variables, namely, variables X1 and X2, on the dependent variable (Y). The t test is carried out to compare tcount with ttable, and it will be concluded that:

If $t_{count} < t_{table}$ H0 is accepted, Ha is rejected.

If $t_{count} > t_{table}$ H0 is rejected, Ha is accepted.

The calculated values for variables and constants obtained with the help of the SPSS 22.00 for Windows software application are in the following table:

Table 6. T Test Calculation Results

Model		Unstandardized Coefficients		Standardize d Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,696	3,094		1,194	,242
	Selection Recruitment Process	,393	,107	,467	3,672	,001
	Selection Recruitment Process	,465	,126	,469	3,692	,001

Source: data processing with SPSS 22.00.

In the table above, it can be seen that:

1. The t-count value of the recruitment variable is 1.054 and t-table is 1.697, so $t_{count} < t_{table}$ ($3.672 < 1.697$), while the significance value is 0.01 or smaller than 0.05. It can be concluded that the recruitment process variables have a positive and significant effect on the employee performance PT. Bank Perkreditan Rakyat Duta Paramarta Medan.
2. The calculated value of the selection variable is 3.692 and t-table ($3.692 > 1.697$), while the significance value is 0.01 or smaller than 0.05. It can be concluded that the selection variable

partially has a positive and significant effect on the employee's performance of PT. Bank Perkreditan Rakyat Duta Paramarta Medan.

3.3.2 F Test (simultaneous test)

The F test (simultaneous test) is carried out to see together (simultaneously) the significant influence of the independent variables (X1 and X2) on the dividend variable (Y). Based on the results of statistical testing (simultaneous test/F test), it can be seen in the following output table:

Table 7. F Test Calculation Results

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	753,868	2	376,934	39,943	,000 ^b
Residual	283,101	30	9,437		
Total	1036,970	32			

a. Dependent Variable: Performance

b. Predictors: (Constant), Selection, Recruitment Process

Source: data processing with SPSS 22.00.

Based on the table above, the F-count value is 39.943 and the F-table is so that F-count > F-table (39.943 > 3.32) at = 0.000 or < 5%. So it can be concluded that simultaneously, the recruitment (X1) and selection (X2) variables have a positive and significant effect on the employee's performance (Y) at PT. Bank Perkreditan Rakyat Duta Paramarta Medan.

3.3.3 Coefficient of Determination (R²)

Testing using the coefficient of determination (R²) is to see the magnitude of the influence or contribution of the independent variables, namely recruitment (X1) and selection (X2), on the dependent variable, namely employee performance (Y) at PT. Bank Perkreditan Rakyat Duta Paramarta Medan. The following are the results of research on the coefficient of determination:

Table 8. Coefficient of Determination Test Results (R²)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,853 ^a	,727	,709	3,07192	2,227

a. Predictors: (Constant), Selection, Recruitment Process

b. Dependent Variable: Performance

Source: data processing with SPSS 22.00

Discussion

1. The Influence of the Recruitment Process on Employee Performance

Recruitment carried out by PT. Bank Perkreditan Rakyat Duta Paramarta Medan is in accordance with SOPs or references for carrying out work tasks that have been statistically proven to have a positive and significant effect on improving performance so as to increase employee professionalism.

2. The Effect of Selection on Employee Performance

Employee selection carried out by PT. Bank Perkreditan Rakyat Duta Paramarta Medan is effective in achieving various predetermined targets and using them effectively, which are statistically proven to have a positive and significant effect so as to produce company output and outcomes.

3. Effect of recruitment and selection on employee performance

In carrying out recruitment and selection, PT. Bank Perkreditan Rakyat Duta Paramarta Medan has ensured that the requirements are in accordance with customer desires, strives for performance standards to create comparisons, and monitors the level of performance carried out by employees who have carried out the recruitment and selection process so that they are simultaneously able to have an influence in improving performance as the implementation of work success.

CONCLUSION

Based on the results of testing and data analysis carried out in the previous chapter, several conclusions were obtained from this research regarding the influence of the recruitment and selection process on employee performance at PT. Bank Perkreditan Rakyat Duta Paramarta Medan, as follows:

1. Recruitment carried out by PT. Bank Perkreditan Rakyat Duta Paramarta Medan in accordance with the SOP has a significant effect on improving performance, so it can increase employee professionalism processes by producing 0.393 units of coefficient.
2. PT. Bank Perkreditan Rakyat Duta Paramarta Medan employee selection process is efficient in that it produces 0.465 units of coefficient, which has a positive and significant impact on the output and outcomes of the company.
3. In carrying out recruitment and selection, PT. Bank Perkreditan Rakyat Duta Paramarta Medan has ensured that the requirements are in accordance with customer wishes. Striving for performance standards has an influence on improving performance as an implementation of work success by producing 39,943 simultaneously.

The suggestions that can be given regarding the results of this research are as follows:

1. The management of PT. Bank Perkreditan Rakyat Duta Paramarta Medan can further improve employee recruitment SOPs that are in line with company needs, where every employee is required to be able to complete or handle work.
2. For future researchers, they should be able to look for other factors that influence employee performance outside of the factors discussed in this research.

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