



## Evaluation of the Implementation of ISO 9001:2015 Quality Management System on HR Performance

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### Article Info

#### Article history:

Received 17 August 2021

Received in revised form 06 September 2025

Accepted 19 September 2025

#### Keywords:

Evaluation,  
ISO Quality Management System  
Multiple Linear Regression  
HR Performance  
Linearity

### Abstract

This research was conducted to measure the extent to which the implementation of the ISO 9001:2015 Quality Management System influences the HR performance of PT XYZ using the ISO 9001:2015 clause, namely Organizational Context, Leadership, Operations, Performance Evaluation, and Improvement as measuring tools. This research is quantitative in nature and the data was distributed to 56 PT XYZ staff using Google Form. The data obtained will be processed using SPSS software with the multiple linear regression analysis method. From the results obtained, it is known that the regression analysis equation is  $Y = 0.428 + 0.040X_1 + 0.099X_2 - 0.110X_3 + 0.078X_4 + 0.122X_5$ . It can be said that the variables Leadership ( $X_2$ ), Performance Evaluation ( $X_4$ ), and Improvement ( $X_5$ ) have a significant influence on HR performance. This is supported by the linear regression equation which obtained a positive value on HR performance. Apart from that, with the linearity test it can be seen that the data produced is linear in relation to HR performance because the results obtained are greater than 0.05. Therefore, this research can be a consideration for improving the ISO 9001:2015 Quality Management System on HR performance.

## Introduction

PT XYZ is an agency responsible for the development, management, and maintenance of water resource infrastructure that supports community needs. PT XYZ has the main task of ensuring the availability of adequate water resources for the community, agricultural sector, and industry. In addition, PT XYZ is also responsible for the development and maintenance of strategic infrastructure, such as dams, irrigation channels, and drainage. In carrying out its duties, PT XYZ applies a data-based approach, modern technology, and international quality standards. This aims to improve the efficiency and effectiveness of water resource management for the welfare.

The increasing demands for quality public services encourage PT XYZ to improve structured systems to ensure efficiency and effectiveness in every operational process. To achieve this goal, it is necessary to involve HR performance at PT XYZ because staff are the main elements that carry out the operational processes carried out. The implementation of the ISO 9001:2015 Quality Management System can be done to improve staff quality, such as leadership, personnel involvement, and continuous improvement. The ISO 9001:2015 Quality Management System (QMS) is an international standard designed to help organizations improve the quality of products or services. The quality management system is one of the most effective tools for companies to increase competitiveness. This has been studied for a long time by Dr. Edward Deming and Dr. Joseph Juran in their studies and practical

implementation of quality management and quality thinking in companies 60 years ago. This topic is still very important today because QMS is still effective and scientists are still researching this question (Winarto & Madja, 2021; Kluse, 2013; Smith et al., 2014; Zivaljevic et al., 2022). ISO 9001:2015 is an ISO 9000 *series* where its implementation will be able to improve the performance of an organization or company in line with the increase in customer satisfaction. ISO 9001:2015 consists of 10 clauses. Clauses 1 to 3 are the opening clauses of ISO 9001:2015 which contain the scope, normative references, and terms. Clauses 4 to 10 are the core or contents of ISO 9001:2015 which begins to enter the scope of the organizational context until clause 10 explains the *improvement* (Karman & Rahardjo, 2021).

Performance is termed as job performance, in a broader sense, namely the results of work in terms of quality, quantity and timeliness achieved by an employee in carrying out his duties according to the responsibilities given. Almost all employee performance measurements consider quantity, quality and timeliness in working (Hackney et al., 2022). Performance is the result produced by work during a certain time, the results of this performance are the abilities, expertise, and activities achieved (Mirino, 2021; Ericsson & Charness, 1994). Human resources are individuals who work in an organization or a company, each individual has their own potential, this potential will be utilized by the organization or company in achieving the goals of the company. In implementing their potential, each individual will produce a value called performance. Human Resource Management is the planning, coordination, implementation and supervision provided by the company to each individual (employee) who works for the company (Cahyani et al., 2022; Itika, 2011; Opatha, 2009). This is developed optimally so that each individual (employee) can provide maximum results. The results given by each individual are generally interpreted as performance (Jabo & Sunaryanto, 2021; Koopmans et al., 2011).

Implementation of ISO 9001:2015 is important for organizations that want to build customer trust. PT XYZ has implemented the ISO 9001:2015 Quality Management System since 2019. For PT XYZ, the implementation of this QMS is not only an effort to comply with international standards, but also as a tool to build a professional work culture among human resources (HR). With effective implementation, each staff is encouraged to work consistently according to procedures. Through this system, PT XYZ can monitor and evaluate performance periodically, so as to identify weaknesses and opportunities for improvement. Therefore, this study was conducted to identify the extent to which the ISO 9001:2015 QMS is implemented consistently using 5 clauses of ISO 9001:2015 as a measuring tool. This study will be assisted by multiple linear regression analysis using SPSS *software*. By conducting this research, it is expected to help agencies identify and measure the extent to which the implementation of QMS on HR performance has been implemented through several clauses of ISO 9001:2015, so that they can find out which variables have the most influence on HR performance.

## Methods

The type of research conducted is descriptive qualitative which analyzes data by describing the data that has been collected. The data collected for this study was by distributing questionnaires using Google Form to several employees at PT XYZ with positions, namely ordinary employees (excluding high-ranking officials in the company), such as administrators, analysts, secretary, financial management, and individual consultants. This study uses data collection in the form of questionnaires from Google Form because there are time constraints so that the option of distributing questionnaires via Google Form is the right choice. Data collection via Google Form is carried out by reminding respondents again and has the potential for bias because some employees give answers that are less accurate or thorough because they have little free time to answer the questionnaire so that the results may not fully represent the target population. The data will later be processed using the multiple

linear regression method using SPSS software. The study was conducted on November 25 - December 5, 2024. This study uses a Likert scale. The classification of the questionnaire assessment scale is as follows:

Table 1. Classification of Questionnaire Assessment Scales

No	Evaluation	Scale
1	Strongly Agree (SS)	5
2	Agree (S)	4
3	Disagree (KS)	3
4	Disagree (TS)	2
5	Strongly Disagree (STS)	1

Variables are anything that has a measurable value variance/difference, for example independent variables and dependent variables. Independent variables are variables that affect dependent variables, while dependent variables are variables that can be affected by independent variables. The independent variables in this study are several clauses of ISO 9001:2015, namely Organizational Context (X1), Leadership (X2), Operations (X3), Work Evaluation (X4), and Improvement (X5). While the dependent variable in this study is HR Performance (Y).

### Multiple Linear Regression Analysis

Multiple linear regression analysis is a linear relationship between two or more independent variables. This analysis aims to determine the direction of the relationship between the independent variables and the dependent variable, whether each independent variable is positively or negatively related, and to predict the value of the dependent variable if the value of the independent variable increases or decreases. In conducting multiple linear regression analysis, assumption tests must be carried out in the form of normality tests, autocorrelation tests, heteroscedasticity tests, multicollinearity tests. If the multicollinearity test is not met, it can be overcome by the *Partial Least Square* (PLS) Regression method (Matulesy & Tambunan, 2023). In this study, the equation model in multiple linear regression analysis is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Information:

- Y = HR Performance
- $\alpha$  = Constant coefficient
- $\beta_1$  = Organizational Context regression coefficient
- $X_1$  = Organizational Context Variables
- $\beta_2$  = Leadership regression coefficient
- $X_2$  = Leadership Variable
- $\beta_3$  = Operational regression coefficient
- $X_3$  = Operation Variable
- $\beta_4$  = Performance Evaluation Regression Coefficient
- $X_4$  = Performance Evaluation Variable
- $\beta_5$  = Regression coefficient of Improvement
- $X_5$  = Improvement Variable
- e = Estimated *error*

### Classical Assumption Test

The classical assumption test is the initial stage used before multiple linear regression analysis. This test is carried out to provide certainty so that the regression coefficient is not biased and consistent and has accuracy in estimation. The classical assumption test is carried out to show that the test carried out has passed data normality, multicollinearity,

autocorrelation, and heteroscedasticity so that the test can be carried out to linear regression analysis. In addition, a new model is said to be good enough and can be used to predict if it has passed a series of classical assumption tests that underlie it (Arisandi, 2022).

### ***Normality Test***

The normality test aims to test whether in the regression model, the confounding variables or residuals have a normal distribution or not. The normality test in this study uses the Kolmogorov Smirnov test processed with SPSS version 21. The conclusion of the normality test results can be seen: a) If the significance value  $> 0.05$ , then the data is stated to be normally distributed; b) If the significance value  $< 0.05$ , then the data is stated to be not normally distributed (Pratama, 2021).

### ***Linearity Test***

Linearity test is used to determine the relationship between independent variables and dependent variables have a significant linear relationship or not. To determine the linearity of the data can be used by using the test *of linearity with a significance level of 5%*, so that if the *linearity* significance value is greater than 0.05 then the data is linear, if below 0.05 then the data is not linear (Nabila, 2019).

### ***Multicollinearity Test***

The multicollinearity test aims to test whether the regression model finds a correlation between independent variables. A low tolerance value is the same as a high VIF value (because  $VIF = 1/Tolerance$ ). The *cutoff value* commonly used to indicate multicollinearity is the *Tolerance value*.  $\leq 0.10$  or equal to a VIF value of  $\geq 10$ . Each researcher must determine the level of collinearity that can still be tolerated (Indri & Putra, 2022).

### ***Heteroscedasticity Test***

The heteroscedasticity test is to test whether in the regression model there is inequality of *variance* and *residual* from one observation to another. If *the variance of the residual* remains, it is called homoscedasticity, if it is different, it is called heteroscedasticity (no heteroscedasticity occurs). It is said to be free from *heteros* if it is significant  $> 0.05$ , but if  $\leq 0.05$  it already contains a heteroscedasticity problem. To find out whether or not there is a Glejser test, namely regressing the absolute value of *the residual* against the independent variable. If the independent variable is significant and the confidence level reaches 5%, then it will be said that there is an indication of heteroscedasticity (Indri & Putra, 2022).

### ***Autocorrelation Test***

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the disturbing errors in the previous period (t-1). To confirm whether or not there is autocorrelation in this regression model, a series test is carried out. To test it, you can use the Durbin-Watson (DW) test. Basis for Decision Making The Durbin-Watson test method (DW test) with the following provisions: (1) If the Durbin-Watson value is smaller than dL or greater than (4dL) then there is autocorrelation; (2) if the Durbin-Watson value lies between dU and (4-dU), then there is no autocorrelation and (3) if the Durbin-Watson value lies between dL and dU or between (4dU) and (4-dL), then it does not produce a definite conclusion (Tondok, 2023).

### ***t-test (Partial)***

The t-test is used to test the money constant suspected to estimate the equation can explain the effect of independent variables on dependent variables. The basis for decision making used in the t-test is as follows:

If the significance probability value  $> 0.05$ , then the hypothesis is rejected. If the significance probability value  $< 0.05$ , then the hypothesis is accepted (Indri & Putra, 2022).

### ***F test***

The F test is a test of the significance of the equation used to determine how much influence the independent variables (X1, X2, X3) together have on the dependent variable (Y), namely customer satisfaction (Amelia, 2021). The assessment criteria for the F test are as follows: a) Ho is accepted, Ha is rejected if  $F_{count} < F_{table}$  and/or  $Sig > 0.05$ ; b) Ho is rejected, Ha is accepted if  $F_{count} > F_{table}$  and/or  $Sig < 0.05$  (Wardani & Permatasari, 2022).

### ***Analysis of the Determination Coefficient (R<sup>2</sup>)***

The determinant coefficient aims to determine how far the regression model's ability to explain variables from the dependent variable. The value of the determinant coefficient is between zero and one ( $0 < R^2 < 1$ ). A small  $R^2$  value or close to zero means that the ability of the independent variable to explain the dependent variable is very limited. Conversely, an  $R^2$  value close to one means that the independent variable provides all the information needed to predict the dependent variable (Tondok, 2023).

In this study, the sample was taken from the staff of the PT XYZ to fill out the questionnaire to be distributed. This study uses the Slovin formula. The Slovin formula is one of the most popular sampling theories for quantitative research. The Slovin formula is commonly used to take the number of samples that must be representative so that the research results can be generalized and the calculation does not require a sample size table (Tunru, Ilahi, & Hikmah, 2023). Therefore, the author took samples for this study using the Slovin formula which is stated as follows:

$$n = \frac{N}{1 + (N \cdot e^2)}$$

Where:

n : number of samples required

N : number of members in the population

e : the desired percentage of allowance or *margin of error* in sampling

Using e of 10%, the sample size from the Slovin formula can be calculated as follows:

$$n = \frac{125}{1 + (125 \cdot 0,1^2)} = 55,5 \approx 56 \text{ people}$$

## **Results and Discussion**

### **Classical Assumption Test**

#### ***Normality Test***

The normality test aims to determine whether the data comes from a normally distributed population or not. If the data comes from a normally distributed population, then it can be done for data processing. This data is tested using the residual normality test. From the results of the normal test calculation, the following is obtained:

Table 2. Results of the Kolmogorov-Smirnov Normality Test

Unstandardized Residual		
N		56
Normal Parameters	Mean	.0000000
	Std. Deviation	.40720900

Most Extreme Difference	Absolute	.110
	Positive	.088
	Negative	-.110
Test Statistic		.110
Asymp. Sig. (2-tailed)		.092

If the value of  $\text{sig} \leq 0.05$  then the data is not normally distributed. While the data will be normally distributed if the value of Sig is  $> 0.05$ . The test results show that the result of the calculation data is 0.123. So the value of Sig 0.092  $> 0.05$  then the data has been normally distributed.

### Validity Test

The validity test aims to find out whether the questionnaire used by researchers in measuring and obtaining research data is valid or not. The validity test results obtained are:

Table 3. Results of Validity Test with Pearson Correlation

		X1	X2	X3	X4	X5	Y	Total
X1	Pearson Correlation	1	.149	.210	-.045	.338	.164	.391
	Sig. (2-tailed)		.272	.120	.741	.011	.226	.003
	N	56	56	56	56	56	56	56
X2	Pearson Correlation	.149	1	.237	.341	.458	.446	.666
	Sig. (2-tailed)	.272		.078	.010	.000	.001	.000
	N	56	56	56	56	56	56	56
X3	Pearson Correlation	.210	.237	1	.410	.441	.037	.540
	Sig. (2-tailed)	.120	.078		.002	.001	.788	.000
	N	56	56	56	56	56	56	56
X4	Pearson Correlation	-.045	.341	.410	1	.417	.337	.653
	Sig. (2-tailed)	.741	.010	.002		.001	.011	.000
	N	56	56	56	56	56	56	56
X5	Pearson Correlation	.338	.458	.441	.417	1	.506	.829
	Sig. (2-tailed)	.011	.000	.001	.001		.000	.000
	N	56	56	56	56	56	56	56
Y	Pearson Correlation	.164	.446	.037	.337	.506	1	.702
	Sig. (2-tailed)	.226	.001	.788	.011	.000		.000
	N	56	56	56	56	56	56	56
TOTAL	Pearson Correlation	.391	.666	.540	.653	.829	.702	1
	Sig. (2-tailed)	.003	.000	.000	.000	.000	.000	
	N	56	56	56	56	56	56	56

If the value of  $\text{Sig} < 0.05$  then the data can be said to be valid, but if the value of  $\text{Sig} > 0.05$  then it can be said that the data is invalid. The data obtained in the table above in the questionnaire variables X1, X2, X3, X4, X5, and Y are valid because they obtain a Sig value  $< 0.05$ .

### Reliability Test

The aim of the reliability test is to determine the level of consistency of the questionnaire used, so that it can be seen whether the questionnaire used is reliable or not. The reliability test results obtained are:

Table 4. Results of the Cronbach's Alpha Reliability Test

Cronbach's Alpha	N of Items
.718	6

In this reliability test, it can be seen from the Cronbach's Alpha value, namely if the Cronbach's Alpha value is  $> 0.70$ , it can be said that the variable is reliable. In the table above it can be seen that the Cronbach's Alpha value was 0.718. So it can be said that the variables X1, X2, X3, X4, X5, and Y are reliable because  $0.718 > 0.70$ .

### Linearity Test

The linearity test aims to determine whether there is a linear relationship between the independent variable and the dependent variable. The linearity test is intended to test whether the data being analyzed is linear or not. The linearity test of each existing variable is:

#### *Linearity Test of HR Performance with Organizational Context (X1)*

Table 5. Linearity Test of HR Performance with Organizational Context (X1)

		Sum of Squares	df	Mean Square	F	Sig.	
Y * X1	Between Groups	(Combined)	2.157	3	.719	2.098	.112
		Linearity	.539	1	.539	2.572	.215
		Deviation from Linearity	1.618	2	.809	2.361	.104
	Within Groups		17.825	52	.343		
	Total		19.982	55			

Hypothesis Testing:

Ho = Data is not linear

Ha = Data is linear

Based on the results of the analysis of multiple linear regression in this study, it can be seen that the relationship between the Organizational Context variable (X1) and HR Performance (Y) produces a significant value on *linearity* of 0.215. So it can be seen that the significance value  $>$  Probability or the result is greater than 0.05, namely  $0.215 > 0.05$  then Ho is accepted and Ha is rejected which means the data is not linear.

#### *Linearity Test of HR Performance with Leadership (X2)*

Table 6. Linearity Test of HR Performance with Leadership (X2)

		Sum of Squares	df	Mean Square	F	Sig.	
Y * X2	Between Groups	(Combined)	5.815	3	1.938	7.115	.000
		Linearity	3.972	1	3.972	14.581	.000
		Deviation from Linearity	1.843	2	.922	3.382	.042
	Within Groups		14.167	52	.272		
	Total		19.982	55			

Hypothesis Testing:

Ho = Data is not linear

Ha = Data is linear

Based on the results of the analysis of multiple linear regression in this study, it can be seen that the relationship between the Leadership variable (X2) and HR Performance (Y) produces a significant value at *linearity* of 0.000. So it can be seen that the significance value  $<$  Probability or the result is less than 0.05, which is  $0.000 < 0.05$  then Ho is rejected and Ha is accepted which means the data is linear.

**Linearity Test of HR Performance with Operations (X3)**

Table 7. Linearity Test of HR Performance with Operations (X3)

ANOVA							
			Sum of Squares	df	Mean Square	F	Sig.
Y * X3	Between Groups	(Combined)	1.648	5	.330	.899	.489
		Linearity	.218	1	.218	.596	.444
		Deviation from Linearity	1.430	4	.357	.975	.430
	Within Groups		18.334	50	.367		
	Total		19.982	55			

Hypothesis Testing:

Ho = Data is not linear

Ha = Data is linear

Based on the results of the analysis of multiple linear regression in this study, it can be seen that the relationship between the Operation variable (X3) and HR Performance (Y) produces a significant value on *linearity* of 0.444. So it can be seen that the significance value > Probability or the result is greater than 0.05, namely 0.444 > 0.05 then Ho is accepted and Ha is rejected which means the data is not linear.

**Linearity Test of HR Performance with Performance Evaluation (X4)**

Table 8. Linearity Test of HR Performance with Performance Evaluation (X4)

			Sum of Squares	df	Mean Square	F	Sig.
Y * X4	Between Groups	(Combined)	3.060	4	.765	2.306	.071
		Linearity	2.268	1	2.268	6.835	.012
		Deviation from Linearity	.792	3	.264	.796	.502
	Within Groups		16.922	51	.332		
	Total		19.982	55			

Hypothesis Testing:

Ho = Data is not linear

Ha = Data is linear

Based on the results of the analysis of multiple linear regression in this study, it can be seen that the relationship between the Performance Evaluation variable (X4) and HR Performance (Y) produces a significant value on *linearity* of 0.012. So it can be seen that the significance value < Probability or the result is less than 0.05, namely 0.012 < 0.05 then Ho is rejected and Ha is accepted which means the data is linear.

**Linearity Test of HR Performance with Improvement (X5)**

Table 9. Linearity Test of HR Performance with Improvement (X5)

			Sum of Squares	df	Mean Square	F	Sig.
Y * X5	Between Groups	(Combined)	5.928	4	1.482	5.377	.001
		Linearity	4.884	1	4.884	17.724	.000
		Deviation from Linearity	1.043	3	.348	1.262	.297
	Within Groups		14.055	51	.276		
	Total		19.982	55			

Hypothesis Testing:

Ho = Data is not linear

Ha = Data is linear

Based on the results of the analysis of multiple linear regression in this study, it can be seen that the relationship between the variable Improvement (X5) and HR Performance (Y) produces a significant value at *linearity* of 0.000. So it can be seen that the significance value <Probability or the result is less than 0.05, namely 0.000 <0.05 then Ho is rejected and Ha is accepted which means the data is linear.

### Multicollinearity Test

The multicollinearity test aims to test whether the regression model finds a correlation between the independent variables, namely Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5). A good correlation model should not have a correlation between independent variables. The following are the results of the multicollinearity test obtained using SPSS *software*:

Table 10. Multicollinearity Test Results

Model		Unstandardized Coefficients		Std Coefficients	t	Sig.	Colinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.428	.364		1.178	.244		
	X1	.040	.063	.078	.634	.529	.820	1.219
	X2	.099	.053	.243	1.884	.065	.751	1.331
	X3	-.110	.044	-.356	-2.484	.016	.607	1.648
	X4	.078	.047	.227	1.659	.103	.665	1.503
	X5	.122	.042	.447	2.916	.005	.529	1.889

If the *tolerance value* >is 0.10 and the VIF <is 10.0, it can be said that the data does not show symptoms of multicollinearity. In the data that has been tested, it can be seen that the Organizational Context variable (X1) obtained a *tolerance value* of 0.820 and a VIF value of 1.219, so it can be concluded that X1 does not show symptoms of multicollinearity. In the Leadership variable (X2), it obtained a *tolerance value* of 0.751 and a VIF value of 1.331, so it can be concluded that X2 does not show symptoms of multicollinearity. In the Operation variable (X3), it obtained a *tolerance value* of 0.607 and a VIF value of 1.648, so it can be concluded that X3 does not show symptoms of multicollinearity. In the Performance Evaluation variable (X4), it obtained a *tolerance value* of 0.665 and a VIF value of 1.503, so it can be concluded that X4 does not show symptoms of multicollinearity. In the Increase variable (X5), the *tolerance value obtained* was 0.529 and the VIF value was 1.889, so it can be concluded that X5 does not show symptoms of multicollinearity.

### Heteroscedasticity Test

#### White Test

White test is one method of heteroscedasticity testing. White test is one way to accurately detect symptoms of heteroscedasticity. This test is carried out by regressing the squared residual ( $U^2T$ ) with the independent variable. Then, the independent variables are squared and a multiplication (interaction) formula between the independent variables is carried out. The following are the White test results obtained as follows:

Table 11. White Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.559 <sup>a</sup>	.313	-.080	.37045

In the White test, it can be determined from the calculated Chi Square value and the Chi Square table. If the Chi Square count < Chi Square table then it can be concluded that there are no symptoms of Heteroscedasticity. Meanwhile, if the calculated Chi Square value > Chi Square table, it can be concluded that there are symptoms of Heteroscedasticity. In the table above, the calculated Chi Square value is 17.528. For the Chi Square value of the table, the Statistical Confidence Level value is 95% ( $\alpha = 0.05$ ) and there are 56 sample data, so the Chi Square table value is 74.468. It can be seen that the calculated Chi Square value < Chi Square table ( $17.528 < 74.468$ ), so it can be concluded that there are no symptoms of Heteroscedasticity.

**Scatterplot Diagram**

The heteroscedasticity test aims to identify the existence of uneven variations in the independent variables, namely Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5). In this study, *scatterplots* are used to identify the existence of heteroscedasticity tests that involve making graphs of normalized predictors and normalized residuals from the model. The following are the results of *the scatterplot* :

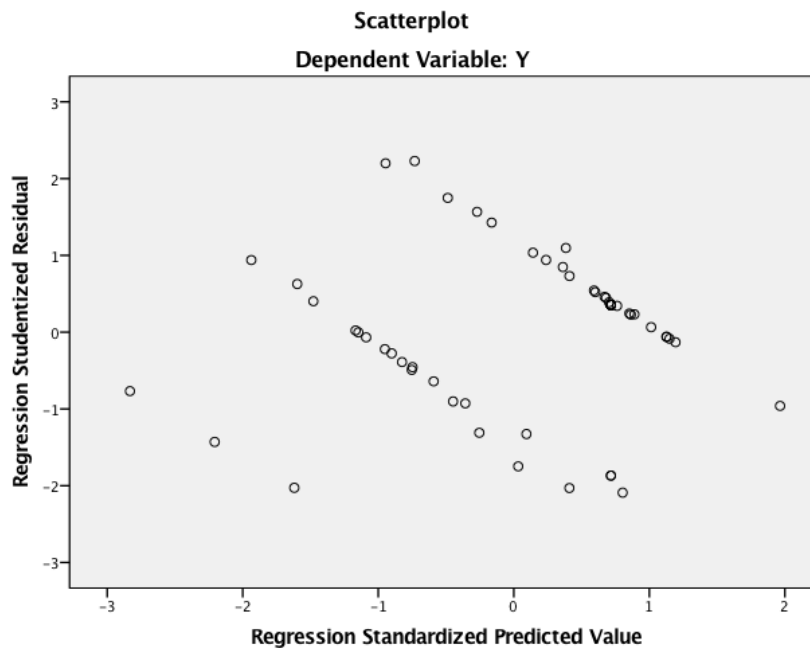


Figure 1. Scatterplot Heteroscedasticity Test

If there is no clearly visible pattern and the points are randomly distributed around the value 0 on the Y axis, then it indicates that there is no heteroscedasticity. In the picture above, it can be concluded that there is no heteroscedasticity.

**Autocorrelation Test**

The autocorrelation test aims to test whether in the linear regression model there is a correlation between the disturbing errors in period t and the previous period t-1. If there is a correlation, it is called an autocorrelation problem. Autocorrelation arises because consecutive observations over time are related to each other. This problem arises because the

residuals (disturbing errors) are not free from one observation to another. This study uses the Durbin-Watson test (*DW test*). The Durbin Watson test is a test used to detect the occurrence of autocorrelation in the residual values ( *prediction errors* ) of a regression analysis. The Durbin Watson test is only used for first-level autocorrelation and requires a constant in the regression model and no variables between the independent variables. The Durbin Watson test method is as follows: a) If  $DW < DL$ ,  $H_0$  is rejected so that positive autocorrelation occurs; b) If  $DW > 4-DL$ ,  $H_0$  is rejected so that negative autocorrelation occurs; c) If  $DU < DW < 4-DU$ ,  $H_0$  is accepted, there is no positive or negative autocorrelation; d) If  $DW$  is located at  $DL$  and  $DU$  or between  $(4-DU)$  and  $(4-DL)$  then it does not produce a definite conclusion.

Table 12. Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.621 <sup>a</sup>	.386	.324	.496	2.217

The  $DU$  and  $DL$  values can be obtained from the Durbin Watson statistical table which consists of the number of observations and the number of independent variables. When viewed from the  $DW$  table, the  $DL$  value is 1.381, the  $DU$  value is 1.768. The  $4-DU$  value is 2.232. The conclusion obtained is  $DU < DW < 4-DU$ , namely  $1.768 < 2.217 < 2.232$ , then  $H_0$  is accepted so that there is no negative or positive autocorrelation.

### T-test

The t-test aims to assess whether the independent variable has a significant partial influence on the dependent variable in the regression model. The following are the results of the t-test obtained using SPSS *software* :

Table 13. t-Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Colinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.428	.364		1.178	.244		
	X1	.040	.063	.078	.634	.529	.820	1.219
	X2	.099	.053	.243	1.884	.065	.751	1.331
	X3	-.110	.044	-.356	-2.484	.016	.607	1.648
	X4	.078	.047	.227	1.659	.103	.665	1.503
	X5	.122	.042	.447	2.916	.005	.529	1.889

In the t-test, if the significance value is  $<0.05$ , then it is concluded that the independent variable has a significant effect on the dependent variable. In the Organizational Context variable (X1) has a significance value of 0.529 ( $> 0.05$ ), it can be concluded that the Organizational Context variable (X1) does not have a significant effect on the HR Performance variable (Y). In the Leadership variable (X2) has a significance value of 0.065 ( $> 0.05$ ), it can be concluded that the Leadership variable (X) does not have a significant effect on the HR Performance variable (Y). In the Operation variable (X3) has a significance value of 0.016 ( $< 0.05$ ), it can be concluded that the Operation variable (X3) has a significant effect on the HR Performance variable (Y). In the Performance Evaluation variable (X4) has a significance value of 0.103 ( $> 0.05$ ), it can be concluded that the Performance Evaluation variable (X4) does not have a significant effect on the HR Performance variable (Y). The Improvement variable (X5) has a significance value of 0.005 ( $> 0.05$ ), so it can be concluded that the Improvement variable (X5) has a significant effect on the HR Performance variable (Y).

## F test

The F test aims to assess whether the independent variables, namely Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5), together (simultaneously) have a significant influence on the dependent variable, namely HR Performance (Y). The following are the results of the F test:

Table 14. F Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.705	5	1.541	6.276	.000
	Residual	12.277	50	.246		
	Total	19.982	55			

In the F test, if the Fcount value > Ftable, then it can be concluded that H0 is accepted, meaning that the independent variable has a significant effect on the dependent variable. In the picture above, it can be seen that a significance value of less than 0.05 can be obtained, which is 0.001. The Fcount value of 6.276 and Ftable 2.40 can also be obtained, so that Fcount > Ftable is obtained. So, it can be concluded that the independent variable has a significant effect on the dependent variable.

## Correlation Coefficient and Determination Coefficient (R<sup>2</sup>)

The Correlation Coefficient and Determination Coefficient aim to measure the extent of the relationship and correlation between variables in the regression model in this study. In addition, this calculation also aims to evaluate how well the estimated regression line approaches the actual data. The following are the results of the determination coefficient calculation:

Table 15. Results of the Determination Coefficient Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.621 <sup>a</sup>	.386	.324	.496	2.217

From the image above, it can be seen that the R value is 0.621, meaning that the variables Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5) have a joint effect of 0.621 on HR performance. This can be said that the variables Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5) have a strong influence on HR performance. It can also be seen that the *R Square value* is 0.356 or 35.6%, meaning that the independent variables, namely Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5) contribute together by 38.6% to the HR Performance variable. The remaining 64.4% is influenced by other variables outside this study.

## Multiple Linear Regression Analysis

This analysis aims to understand the extent to which the independent variable impacts the dependent variable. The following is a multiple linear regression equation obtained using SPSS software :

Table 16. Results of Multiple Linear Regression Calculations

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Colinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.428	.364		1.178	.244		
	X1	.040	.063	.078	.634	.529	.820	1.219

	X2	.099	.053	.243	1.884	.065	.751	1.331
	X3	-.110	.044	-.356	-2.484	.016	.607	1.648
	X4	.078	.047	.227	1.659	.103	.665	1.503
	X5	.122	.042	.447	2.916	.005	.529	1.889

Based on the image above, a regression equation can be made as follows:

$$Y = 0.428 + 0.040X1 + 0.099X2 - 0.110X3 + 0.078X4 + 0.122X5 + e$$

Where:

Y = HR Performance

X1 = Organizational Context

X2 = Leadership

X3 = Operation

X4 = Performance Evaluation

X5 = Improvement

The analysis can be broken down as follows: a) The constant value obtained is 0.428, which means that if the variables Organizational Context (X1), Leadership (X2), Operations (X3), Performance Evaluation (X4), and Improvement (X5) have constant values assumed to be 0, then the HR Performance value is 0.428; b) The coefficient value of Organizational Context (X1) is positive at 0.040, which means that if there is a 1% increase in the Organizational Context variable, it will cause an increase in HR Performance of 0.040; c) The Leadership coefficient value (X2) is positive at 0.099, which means that if there is a 1% increase in the Leadership variable, it will cause an increase in HR Performance of 0.099; d) The value of the Operation coefficient (X3) is negative at 0.110, which means that if there is a 1% increase in the Operation variable, it will cause a decrease in HR Performance of 0.110; e) The Performance Evaluation coefficient value (X4) is positive at 0.078, which means that if there is a 1% increase in the Performance Evaluation variable, it will cause a decrease in HR Performance of 0.078; f) The coefficient value of Improvement (X5) is positive at 0.122, which means that if there is a 1% increase in the Organizational Context variable, it will cause an increase in HR Performance of 0.122.

### **The Influence of Organizational Context (X1) on HR Performance**

Based on the results of multiple linear regression analysis, it can be seen that the Organizational Context variable has a regression coefficient of 0.040. This indicates that the variable is positive towards the HR Performance variable. This means that if the Organizational Context increases by 1%, then HR Performance will increase by 0.040. This value of 0.040 indicates a weak relationship with HR Performance, meaning that this variable contributes almost insignificantly to improving HR performance. This weak relationship indicates that the implementation of the Organizational Context has little direct influence on HR performance. This may be due to other factors, such as other variables/clauses having a greater influence in determining HR performance.

### **The Influence of Leadership (X2) on HR Performance**

Based on the results of multiple linear regression analysis, it can be seen that the Leadership variable has a regression coefficient of 0.099. This indicates that the variable is positive towards the HR Performance variable. So it means, if Leadership increases by 1%, then HR Performance will increase by 0.099. This value of 0.099 indicates a weak relationship with HR performance, meaning that when the implementation of the variable in the organization

and HR performance increases but the effect is not significant. A weak effect can indicate that the agency has done planning, but has not fully involved HR in the process.

### **The Influence of Operations (X3) on HR Performance**

Based on the results of multiple linear regression analysis, it can be seen that the Operation variable has a regression coefficient of -0.110. This indicates that the variable is negative towards the HR Performance variable. This means that if Operation increases by 1%, HR Performance will decrease by 0.110. This value of -0.110 indicates a weak relationship with HR performance.

### **The Influence of Performance Evaluation (X4) on HR Performance**

Based on the results of multiple linear regression analysis, it can be seen that the Performance Evaluation variable has a regression coefficient of 0.078. This shows that the variable is positive towards the HR Performance variable. So it means, if Performance Evaluation increases by 1%, then HR Performance will increase by 0.078. This value of 0.078 indicates a weak relationship with HR performance, meaning that when the implementation of the variable in the organization and HR performance increases but the effect is not significant.

### **The Influence of Improvement (X5) on HR Performance**

Based on the results of multiple linear regression analysis, it can be seen that the Improvement variable has a regression coefficient of 0.122. This shows that the variable is positive towards the HR Performance variable. So it means, if the Improvement increases by 1%, then HR Performance will increase by 0.122. This value of 0.122 indicates a weak relationship with HR performance, meaning that when the implementation of the variable in the organization and HR performance increases but the effect is not significant. This variable is the variable with the highest multiple linear regression coefficient value, so this variable has the most significant influence on HR performance.

## **Conclusion**

Based on the research above, it is known that the results of the multiple linear regression equation, namely Organizational Context (X1), Leadership (X2), Performance Evaluation (X4), and Improvement (X5) have a positive effect on HR performance, while the Operation variable (X3) has a negative effect on HR performance. It can be seen that the multiple linear regression values from the largest to the smallest influence are Improvement (X5) with a value of 0.122; Leadership (X2) with a value of 0.099; Performance Evaluation (X4) with a value of 0.078; Organizational Context (X1) with a value of 0.040; and Operation (X3) with a value of -0.110. The negative value obtained in the Operation variable (X3) can be caused by factors in the staff, such as staff who do not understand the established SOP, are less careful in making accurate operational results reports, and are less anticipatory or comprehensive in finding effective solutions when encountering obstacles in operations. For other variables, there are several that have a significant but non-linear effect or have no significant effect at all on HR performance variables. This can be caused by other factors/clauses that have a greater influence in determining HR performance. Suggestions for agencies are to pay more attention/strengthen the Improvement variable (X5) and ignore/reduce the Operation variable (X3) in order to direct focus on variables that have a positive impact on HR performance and reduce waste due to inefficient operational processes.

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