

Article

Optimizing Logistics Operations: The Role of Total Quality Management in Service Performance at Jember Post Office

Shefiona Zahra Artamefia^{1*}, Bayu Wijyantini², Seno Sumowo³

1,2,3. Muhammadiyah University of Jember, Indonesia

* Correspondence: shefionazahra6@gmail.com

Abstract: This study explores the impact of Total Quality Management (TQM) on operational performance in the logistics sector, with a focus on the Jember Main Post Office. TQM principles, including customer focus, continuous improvement, teamwork, and employee empowerment, are examined for their role in enhancing service quality and operational efficiency. Using a quantitative descriptive approach, data were collected through employee surveys and analyzed using multiple linear regression. The findings reveal that all TQM dimensions positively and significantly affect operational performance, with customer focus being the most influential factor. These results highlight the importance of TQM practices in boosting process efficiency, minimizing service errors, and enhancing customer satisfaction. The study offers valuable insights for logistics companies aiming to strengthen their operational strategies and maintain a competitive edge.

Keywords: Total Quality Management, Competitive, Logistic

1. Introduction

The company is a place where production activities occur and all production factors gather. Companies currently need professional human resources to carry out everything related to the company. Human Resources have a very strategic position in the organization, meaning that the human element plays an important role in carrying out activities to achieve goals. That is why the existence of human resources in the organization is very strong. Humans always play an active and dominant role in every organizational activity because humans are planners, actors, and determinants of the realization of organizational goals. Goals cannot be realized without the active role of employees even though the tools owned by the Company are so sophisticated.

Therefore, the success of an agency does not only depend on the agency's technology but also on the aspects of the resources owned by the company. Human Resources is the science and art of regulating human elements (creativity, feeling, and will) as assets of an organization in order to realize organizational goals by obtaining, developing, and maintaining workers effectively and efficiently. (Hasibuan, 2010). According to (Saptono, A., Sutanto, A., & Hidayat, 2020) Human Resources (HR) is one of the assets of a company or business organization or non-business. The progress of the company is very dependent on the performance of its employees or HR.

Increasing competition in the logistics industry. The growth of globalization and the complexity of modern supply chains require logistics companies to have optimal operational performance. In this context, the implementation of TQM becomes a critical strategy because it provides a structured approach to improve efficiency, reduce errors, and ensure service quality. In the era of free trade, companies are required to be more

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competitive in various aspects. Including in terms of operational and managerial performance of the company in creating its products. If the company has good operational performance quality, the company has better competitiveness than its competitors. Most companies are required to have good quality for every product produced with better prices and services than their competitors' products. Therefore, efforts are needed to achieve this, one of which is by implementing Total Quality Management (TQM) in every aspect from the production section to the operational realm to realize the vision and mission that have been set.

In improving Total Quality Management (TQM), a company needs quality human resources for maximum results. Total Quality Management (TQM) aims to produce flawless results or reduce errors so that consumer needs and desires are in accordance with their expectations, to get these results, a company must place and adjust its employees based on their positions and the knowledge they have mastered. According to Cashmere (2019), performance is a consequence of the quality of work and the results achieved by employees in carrying out their duties in accordance with the obligations given. According to The Great War (2017), performance is the work results in terms of quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him.

In today's digital era, customer satisfaction levels are a key factor for the success of every company. Therefore, the role of logistics services is very important in improving customer service. Problems faced in the logistics services of the PB Sudirman Jember Post Office, such as slow delivery of goods and delivery of damaged goods due to unsafe packaging and also piled up with other heavy packages during the delivery process by the PB Sudirman Jember Post Office expedition, then less than optimal in serving customers because there are complaints from customers, can interfere with customer satisfaction. These problems are based on the author's observations through the Google platform by looking at the level of problems complained about by customers. Logistics management helps companies optimize the flow of goods, services, and information related to the logistics process. This plays an important role in the integration between work units in the project team, as well as ensuring the safety and speed of delivery.

Table 1. Data on Visitors to PB Sudirman Jember Post Office, January – April 2024

Month	Number of Visitors
January	4.488
February	4.305
March	6,645
April	6,562

data source: PB Sudirman Jember Post Office 2024

Based on table 1.1, it shows that the number of consumers coming to the PB Sudirman Jember Post Office fluctuated from January to April. This means that consumers use services at the post office. It can be seen that in January there were 4,488, in February there was a slight decrease with a number of 4,305 visitors and in March and April there was a significant increase because in those months consumers used post office services to make tax payments and also coincided with the holy month of Ramadan and Eid al-Fitr in 2024. In previous studies, several results were found, namely such as research (Antari, Luh Putu Rima Setiawan, 2022) concluded that customer focus, continuous improvement,

teamwork, obsession with quality and education and training have a positive and significant influence on company performance. Meanwhile, according to (Hibau et al., 2019) that TQM focuses on customer satisfaction, employee empowerment, employee education and training have a significant impact on operational performance.

2. Materials and Methods

The data collection methods that will be used in this study are Interviews, Questionnaires, and Observations. The data collection method in this study uses the non-probability sampling method. This method is a deliberate sampling by distributing questionnaires to all employees of the Jember Post Office. The data collection technique uses a questionnaire distributed via Google Form to respondents online. The questionnaire contains statements related to Total Quality Management with several characteristics including customer focus, obsession with quality, teamwork, continuous system improvement and Employee Involvement and Empowerment. The method used is a Likert scale because respondents are asked to give values to objects according to the specified scale.

The type of data produced in this study is interval data because the measurement scale used is the Likert scale. According to (Sugiyono, 2019), interval data is continuous quantitative data that is evenly spaced, but does not have an absolute zero value. With a Likert scale, the variables to be measured are described as variable indicators. Because in an ordinal scale using a Likert scale measure. Then these indicators are used as a reference for compiling instrument items that can be in the form of statements or questions. This Likert scale calculation confronts respondents with several questions and then is asked to provide answers. Data successfully collected from the questionnaire will then be measured with a weighting of 1 to 10.

3. Results and Discussion

Analysis of the results of the study "The Effect of the Implementation of Total Quality Management (TQM) on Operational Performance". Data analysis begins with data validity testing, data reliability testing, classical assumption test results, hypothesis test results and multiple linear regression test results. Research data collection is used to test the hypothesis, overall the number of samples obtained is 104 respondents. After the data is collected, the data is then analyzed using SPSS

Data Instrument Test Results

1. Validity Test Results

According to Ghazali (2018), the validity test is used to measure how accurate a statement in the questionnaire that will be asked to respondents is. The calculation of the validity test in this study uses the Correlation method. Pearson

Basis for taking validity test:

1. If the calculated R value > R Table = Valid
2. If the calculated R value < R table = Invalid

How to find the R table value With N = 104 at 5% significance, the R table value obtained is 0.191

Table 2. Validity test results table

No	Indicator	Criteria 1		Criteria 2		Information
		R count	R table	sig value	Alpha	
1	X1.1	0.660	0.191	0,000	0.05	Valid
2	X1.2	0.719	0.191	0,000	0.05	Valid
3	X1.3	0.605	0.191	0,000	0.05	Valid

4	X1.4	0.688	0.191	0,000	0.05	Valid
1	X2.1	0.809	0.191	0,000	0.05	Valid
2	X2.2	0.823	0.191	0,000	0.05	Valid
3	X2.3	0.882	0.191	0,000	0.05	Valid
4	X2.4	0.803	0.191	0,000	0.05	Valid
5	X2.5	0.821	0.191	0,000	0.05	Valid
1	X3.1	0.802	0.191	0,000	0.05	Valid
2	X3.2	0.831	0.191	0,000	0.05	Valid
3	X3.3	0.817	0.191	0,000	0.05	Valid
4	X3.4	0.832	0.191	0,000	0.05	Valid
5	X3.5	0.793	0.191	0,000	0.05	Valid
1	X4.1	0.826	0.191	0,000	0.05	Valid
2	X4.2	0.819	0.191	0,000	0.05	Valid
3	X4.3	0.892	0.191	0,000	0.05	Valid
4	X4.4	0.782	0.191	0,000	0.05	Valid
1	X5.1	0.556	0.191	0,000	0.05	Valid
2	X5.2	0.534	0.191	0,000	0.05	Valid
3	X5.3	0.591	0.191	0,000	0.05	Valid
4	X5.4	0.675	0.191	0,000	0.05	Valid
5	X5.5	0.622	0.191	0,000	0.05	Valid
6	X5.6	0.594	0.191	0,000	0.05	Valid
1	Y1.1	0.673	0.191	0,000	0.05	Valid
2	Y1.2	0.566	0.191	0,000	0.05	Valid
3	Y1.3	0.564	0.191	0,000	0.05	Valid

Based on the results of the validity test above, the correlation between each indicator and the total score of each variable shows valid results, because $R_{\text{Calculation}} > R_{\text{Table}}$ (0.191) and the significance value < 0.05 . It can be concluded that all statement items are declared valid.

2. Reliability Test Results

If the Cronbach's Alpha value for each variable is greater than 0.60, then the variable is declared reliable.

Table 3. Reliability Test Results Table

Variables	Cronbach's Alpha Value	Alpha Standard	Information
X1	0.631	0.60	Reliable
X2	0.885	0.60	Reliable
X3	0.872	0.60	Reliable
X4	0.849	0.60	Reliable
X5	0.932	0.60	Reliable
Y	0.863	0.60	Reliable

Based on the results of the reliability test, the Cronbach's Alpha figure was above 0.60, which means that all of the statements tested for reliability were declared reliable.

Classical Assumption Test Results

1. Normality Test

According to Ghazali (2016) the normality test is conducted to test whether in a regression model, an independent variable and a dependent variable or both have a normal or abnormal distribution. If a variable is not normally distributed, the results of the statistical test will decrease. In the data normality test, it can be done using the One Sample Kolmogorov Smirnov test, namely with the provision that if the significance value is above 5% or 0.05, the data has a normal distribution. Meanwhile, if the results of the One Sample Kolmogorov Smirnov test produce a significant value below 5% or 0.05, the data does not have a normal distribution.

2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		103
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	1.05581735
	Most Extreme Absolute Differences	,077
	Positive	,077
	Negative	-,058
Test Statistics		,077
Asymp. Sig. (2-tailed)		,148 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on the results of the normality test in table 4.27, the significance value is $0.148 > 0.05$, so it can be concluded that the residual value is normally distributed.

3. Multicollinearity Test

To find out whether or not there is multicollinearity in the regression model, it can be seen from the tolerance value and the variance inflation factor (VIF) value. The Tolerance value measures the variability of the selected independent variables that cannot be explained by other independent variables. So if the Tolerance value > 0.10 and VIF < 10 then there is no multicollinearity.

Table 4. Multicollinearity Test Results

Variables	Tolerance	VIF	Information
X1	,440	2,271	There is no multicollinearity
X2	,403	2,484	There is no multicollinearity
X3	,326	3,071	There is no multicollinearity
X4	,356	2,794	There is no multicollinearity
X5	,700	1,429	There is no multicollinearity

Based on the table above, it shows that the results of the multicollinearity test on the workload variable instruments (X1), work stress (X2), work environment (X3) do not experience multicollinearity because they have a tolerance value of more than 0.1 and a VIF value of less than 10 or equal to a VIF value of more than 0.1.

4. Heteroscedasticity Test

One way to find out whether or not there is heteroscedasticity in a multiple linear regression model is by looking at the scatterplot graph or from the predicted value of the dependent variable, namely SRESID with residual error, namely ZPRED. If there is no particular pattern and it does not spread above or below zero on the y-axis, then it can be concluded that there is no heteroscedasticity.

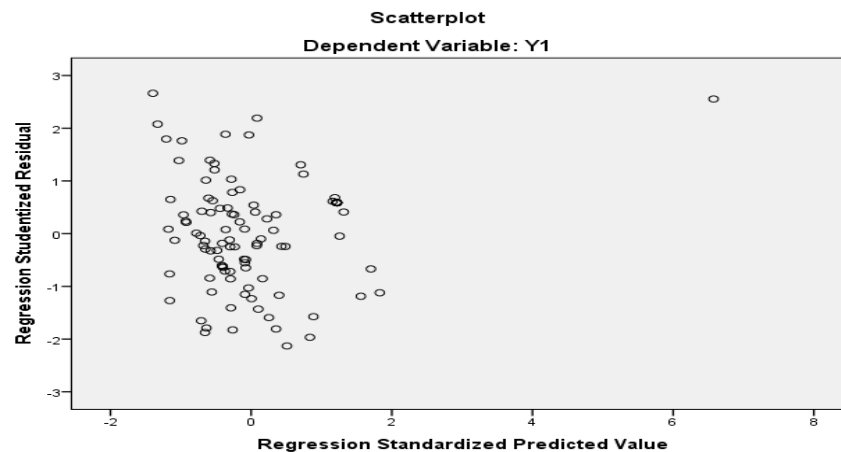


Figure 1. Scatter plot graphic

Based on the scatter plot graphic above, it shows that the data distribution is... does not form a particular pattern or spread randomly. Therefore it can be concluded that there are no symptoms of heteroscedasticity in the residuals (assumption fulfilled).

5. Multiple Linear Regression

The stages carried out in analyzing data are Multiple linear regression analysis. This analysis technique is used to determine changes in the value of the dependent variable with the presence of the value of the independent variable, the formula for the multiple linear regression equation is:

Information:

Y = Operational Performance

X1 = Focus on customers

X2 = Obsession with quality

X3 = teamwork

X4 = continuous system improvement

X5 = Community involvement and empowerment

b0 = Constant value

b1 = Customer-focused regression coefficient

b2 = Regression coefficient of obsession with quality

b3 = Teamwork regression coefficient

b4 = Continuous system improvement regression coefficient

Table 5. Multiple Linear Regression Results

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7,282	1,309		5,562	,000
X11	-,086	,054	-,090	-1,593	,114
X12	,007	,036	,012	,196	,845
X13	,230	,043	,353	5,382	,000
X14	-,224	,053	-,262	-4,189	,000
X15	,377	,018	,911	20,375	,000

a. Dependent Variable: Y1

1. The constant is 7.282, which means that if there is no change in the value of the independent variables (X1), (X2), (X3), (X4), and (X5), then the value of the dependent variable (Y) is 7.282.

2. The regression coefficient on variable X1 is -0.086 and is negative, meaning that if variable x1 increases by 1 point significantly, and other independent variables remain constant. Then variable x1 is the opposite of variable Y. This means that if x1 increases, Y will decrease and vice versa.

3. The regression coefficient on the variable x2 is 0.007 and is positive, meaning that if the variable x2 increases by 1 point significantly, and the other independent variables remain constant. Then the variable x2 will be interrelated, meaning that if x2 increases, the value of y will also increase, and vice versa.

4. The regression coefficient on variable x3 is 0.230 and is positive, meaning that if variable x3 increases by 1 point significantly, and other independent variables remain constant. Then the variable x3 will be interrelated, meaning that if x3 increases, the value of y will also increase, and vice versa.

5. The regression coefficient on variable X4 is -0.224 and is negative, meaning that if variable X4 increases by 1 point significantly, and other independent variables remain constant. Then variable X4 is in contrast to variable y. This means that if X4 increases, Y will decrease and vice versa.

6. The regression coefficient on the variable x5 is 0.377 and is positive, meaning that if the variable x5 increases by 1 point significantly, and the other independent variables remain constant. Then the variable x5 will be interrelated, meaning that if x5 increases, the value of y will also increase, and vice versa.

6..Hypothesis Testing

T-test

The t-test is conducted to determine whether there is a relationship between variables individually. Decision making in this case is:

- If the significant value < 0.05 or $t \text{ count} > t \text{ table}$ then there is an influence of variable X on Y.
- If the significance value > 0.05 or $t \text{ count} < t \text{ table}$ then there is no influence of variable X on Y.

Table 6. T-Test Results Table

Variables	T-count	t-table	Sig
X1	-1,593	1,659	0.114
X2	0.196	1,659	0.845
X3	5,382	1,659	0,000
X4	-4,189	1,659	0,000
X5	20,375	1,659	0,000

Based on the table above

1. X1 According to the analysis data, namely the results of the t-test (partial) shows that the effect of (X1) on (Y) is the calculated t value $-1.539 > t\text{-table value } 1.659$. This means that there is a significant negative effect of X1 on Y.

2. X2 according to the t-test analysis data shows a calculated t value $< T$ table, namely $0.196 < 1.659$, which means the hypothesis is accepted, this means that the independent variable does not affect the dependent variable.

3. According to the analysis data, namely the results of the t-test (partial) show that the influence of (X3) on (Y) is the calculated t value of $5.382 > t\text{-table value of } 1.659$. This means that there is a significant influence of X3 on Y.

4. X4 According to the analysis data, namely the results of the t-test (partial) shows that the effect of (X4) on (Y) is the calculated t value $-4.189 > t\text{-table value } 1.659$. This means that there is a significant negative effect of X4 on Y.

5. According to the analysis data, namely the results of the t-test (partial) show that the influence of (X5) on (Y) is the calculated t value of $20.375 > t\text{-table value of } 1.659$. This means that there is a significant influence of X5 on Y.

R Test

The R2 test is a test that measures the ability of independent variables to apply dependent variables. The determination coefficient value (R2) shows the percentage of the extent to which all independent variables contribute to the dependent variable, both partially and simultaneously.

Table 7. R Test Results

Model Summary^b

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	,930a	,864	,857		1,083

a. Predictors: (Constant), X5, X2, X4, X1, X3

b. Dependent Variable: Y

Based on the results of the analysis above, the coefficient of determination was obtained as 0.884, which means that 88.4% are variables x1, x2, x3, x4, x5 and 11.6% are other variables.

4. Conclusion

The findings of this study reveal a nuanced relationship between various factors of Total Quality Management (TQM) and operational performance. Customer focus and continuous system improvement were found to have a negative and significant impact on operational performance, suggesting that excessive prioritization of these factors may inadvertently hinder operational efficiency. Conversely, teamwork and employee involvement and empowerment demonstrated a positive and significant effect,

underscoring their critical role in enhancing performance outcomes. Interestingly, obsession with quality showed no measurable impact, indicating that its influence may be context-dependent or moderated by other variables. These findings imply that while certain TQM practices are essential for operational success, an overemphasis or misalignment of priorities can have adverse effects. Organizations should therefore adopt a balanced and strategic approach to implementing TQM practices. Future research should explore the contextual factors and industry-specific dynamics that may mediate these relationships and investigate the long-term effects of these practices on operational sustainability and organizational performance.

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