

THE INFLUENCE OF SUPPLY CHAIN MANAGEMENT TO PRODUCT QUALITY AT PT XYZ IN JAKARTA

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ABSTRACT

This research is the development from previously research about supply chain and differentiation product. The research aims to find out whether supply chain management influences product quality at PT. XYZ in Jakarta. This research uses all staff from warehouse (30 staffs) so that this research using population. Data was collect by distributing questionnaires to 30 staffs. Then, the data analysed using simple regression analysis, combined with t-test. The result of the hypothesis testing supported the current hypothesis, that is, there is a significant effect of supply chain management on product quality at PT XYZ in Jakarta.

Key words: Supply Chain Management, Product Quality

1. INTRODUCTION

Globalization made many countries fought tightly to win the market. This condition is also happening in Indonesia. However for most of the company that exist out there, the business strategies had always been essential to survive. A good business strategy will change frequently to adapt with the market. The change itself, lead the company to have a new competitive advantage for the upcoming market competition.

Changes, in positive ways, are the main factors for fix the quality. A bad quality product will direct the company to a loss condition. There are many way to solve the quality problems and one of them is Supply Chain Management. By practicing a good Supply Chain Management in the company, a product can be right on time and at the right place to create an optimum level of inventory.

A smart change can direct a product to have a good quality. Stundza (2009) said that if a company did not try to reduce their quality costs in the supply chain management, it could reduce the revenue as well. When this all happens, then the company will shrink into deep and after that, the company will

face a tougher trouble in the upcoming period.

Linear with the previous statement, Batson and McGough (2006) stated that quality planning in supply chain is important especially to provide the customer needs. Moreover, the key in this area is the production department. At the end of their research, they agree that supply chain management had significant effect to product quality.

The research above strengthen by Agus (2011) who discover the influenced of Supply Chain to product quality and business performance. Furthermore, the result in her research indicates that manufacturing companies should emphasize greater attention to the waste elimination program through lean production as well as the technological aspects of Supply Chain Management and a greater degree of management support for Supply Chain Management enhancement initiatives

This research itself has a goal to find the empirical proofs that Supply Chain Management is affecting the Product Quality at a manufacturing company in Indonesia. Based on all of those things, researchers set "The Influence of Supply Chain Management

to Product Quality at PT XYZ in Jakarta” as the title for this research.

2. THEORETICAL BACKGROUND

There are two variables in this research, Supply Chain Management and product quality. The first variable in this research is Supply Chain Management. According to Heizer and Render (2006), Supply Chain Management is the integration of the activities that procure materials, transform them into intermediate goods and final products, and deliver them to customers. Similar with the previous definition, David, Kaminsky and Edith (2003) said that Supply Chain Management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses and stores, so that merchandise is produced and distributed at the right quantities, to the right locations and at the right time. These all utilized in order to minimize system wide costs while satisfying service level requirements.

The second and the last variable of this research is product quality. Feigenbaum (1986) stated a product with quality is the product that delivered a full customer satisfaction. Hunt (1993) told that product quality is the fitness for use to fulfill customers need and satisfaction. Therefore, researchers conclude that product quality is the fitness for use that delivered to customers for their needs and satisfaction.

To determine those variables, researcher needs to prepare the indicators for each variable. According to Indrajit and Djokopranata (2003), Supply Chain Management based on the good relationship with the suppliers, the optimal work in operation facility, the wise selection of the marketing channels and the perfect delivery to improve the customer satisfaction.

There are plenty different indicator for quality. One of them is the 8 indicators to detect the product quality that stated by Garvin in Gasperz (1997) as product performances, product features, product reliability, product level of conformance, product durability, service ability of the

product, product aesthetics and perceived quality about the product.

As explained above by Stundza (2009) and also Batson and McGough (2006), Supply Chain Management is the independent variable while product quality is the dependent variable in this research. Therefore, by using both variables researchers develop hypothesizes as:

Ha: Supply Chain Management has a significant influenced to product quality.

3. RESEARCH METHOD

Aritonang (2002) stated that population is all of the elements in research subject. This research is using the population data because researchers spread the questionnaire to collect all of the data by collecting it to all employees at PT XYZ in Jakarta that responsible in company supply chains.

Researches, as usual, have the analyze method or technique to interpret and make a conclusion from the variables. The analysis itself is using simple regression method to find the equation: $Y = \alpha + \beta X + e$. In the model, Y refers to dependent variable, α refers to intercept coefficient, β refers to regression coefficient, X refers to independent variable and e refers to errors.

Santoso (2000) stated that before the model used, there are several tests, which include validity test, reliability test, heteroscedasticity test, normality test and autocorrelation test. The last three test above, are part of classic assumption that taken from a simple regression equation. After all of these tests passed, the equation will be tested with test of significance (using both t and f test) to detect the correlation and influences. Finally, researchers also look in to the determinant coefficients to figure how this equation explains the product quality.

4. RESULT AND DISCUSSION

The first test is validity and reliability test using the number of Corrected Item Total Correlation (The question will become valid

when the coefficient > 0.2) and Cronbach's alpha (The questionnaire will become reliable when the coefficient > 0.5) using the SPSS computer programs. All of the questions in the questionnaire are valid and reliable.

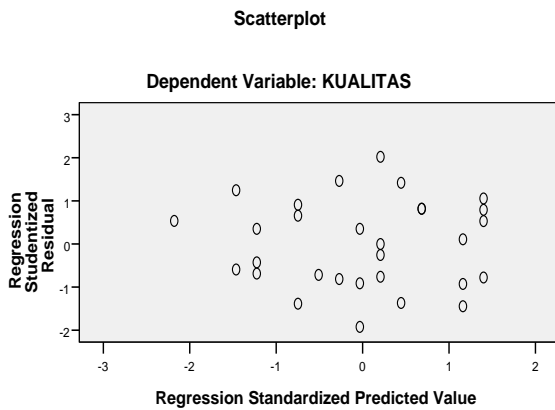


Figure 1. SPSS Output of Scatterplot

According to Andren (2007), it is very important to investigate the heteroscedasticity because it might invalidate the test results by the inefficient estimators. However, after the test, the result proved that there are no heteroscedasticity on the equation because the scatterplot in Figure 1 had no significant pattern.

Normal P-P Plot of Regression Standardized Residual

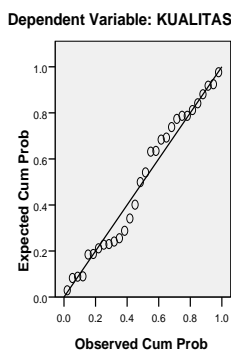


Figure 2. SPSS Output of Normal P-P Plot

Based on Figure 2, there are dots around the linear line. When it happens, the data that been used in this model are normally distributed.

Table 1. SPSS Output of Model Summary

Model	R	R Square	Durbin-Watson
1	.385(a)	.148	1.628

Gujarati (2004) stated that autocorrelation made the t-test, F-test and Chi-Square test may not be valid. On the Table 1, it shows that the Durbin-Watson coefficient is close to 2 where a model stated with perfectly no autocorrelation (1.628). These mean, as a result, there are no autocorrelation in this model at 95% confidence level. The table also shows that Supply Chain Management can explain 14.8% of the product quality and the rest 85.2% explain by the other variables.

Table 2. SPSS Output of Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	51.312	7.907		6.490	.000
Manajemen rantai pasokan	.393	.178	.385	2.204	.036

All of those fulfillments above lead to the usage of the equation that gathered from Table 2. The equation itself noted as $QUALITY = 51.312 + 0.393 SCM$. In that equation, QUALITY refers to product quality while SCM refers to Supply Chain Management. The table also found out that the intercept coefficient (Sig = 0.000) and regression coefficient (Sig = 0.036) in the equation is significant at 95% confidence level.

Table 3. SPSS Output of Correlation

		Manajemen rantai pasokan	Kualitas
Manajemen rantai pasokan	Pearson Correlation	1	.385(*)
	Sig. (2-tailed)		.036
	N	30	30
Kualitas	Pearson Correlation	.385(*)	1
	Sig. (2-tailed)	.036	
	N	30	30

Pratisto (2003) said that Pearson Correlation is the relation test in parametric statistic. Table 3 figured that the relation between Supply Chain Management and product quality is positive but relatively weak. However, the test of significance shows that there are relationships between Supply

Chain Management and product quality at 95% confidence level.

Finally, the model empirical proves to strengthen the previous research from Stundza (2009) and also Batson and McGough (2006). However, low coefficient determinant in this research mean there are plenty variables out there that also influences the product quality.

5. CONCLUSION

This research concludes that empirically Supply Chain Management as independent variables are influencing product quality at 95% confidence level. This result shows the company that they must be careful with bad supply chains and must keep the perfect flow in supply chains. As written before, researchers suggest to add another variables for strengthen the results to increase the low determinant coefficient.

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