Saburai-IJSSD :**INTERNATIONAL JOURNAL OF SOCIAL SCIENCES AND DEVELOPMENT**
Volume 1, No 2 (2017)
ISSN: 2579-3640 (ONLINE)
DOI: http://dx.doi.org/10.24967/saburai%20ijssd.v1i2.254
Page:180-185

THE EFFECT OF QUALITY COST ON THE RATTAN INDUSTRY PERFORMANCE

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Abstract:

The purpose of the study is to determine the quality of products in the industrial competitiveness of rattan industry in South Lampung. The technique data used mostly resulted from the interview. To improve the credibility of research findings, the other methods of data collection were used, such as questionnaires, direct observation and document analysis and records. This study is descriptive verificative with explanatory survey. The method of data analysis is path of analysis. The object of the study is the cost of quality which consists of prevention costs, appraisal costs, internal failure costs, and external failure costs. The results showed that the cost of quality activities consisting of prevention activities, control activities, internal failure activities, and external failure activities had a significant effect on the performance of the rattan industry in southern Lampung.

Keywords: *prevention costs, appraisal costs, internal failure costs, external failure costs. industry competitiveness*

Introduction

The industrial center of rattan in South Lampung is one of the industrial centers in Lampung Province that is able to survive amid the regulation in 2005 that is not in favor of the rattan industry. The decline in the performance of the rattan industry in Indonesia actually began to be felt in early 2007. Based on data from the Ministry of Industry, some rattan producers in Cirebon which are the production base of rattan furniture have decreased production, from which originally exported an average of 120 containers per month to only about 15-20 containers per month. The deficit in the rattan trade balance and Indonesian rattan-based products and the performance of Indonesian rattan-based products exports is one indication of the decline of the rattan processing industry in Indonesia Meanwhile, rattan furniture remains one of the world's fun trends, as indicated by the growing import of world rattan furniture during 2010-2014 with an average increase of 4.3% per annum (UN COMTRADE, 2015).

In 2017 based on import export report processing industry issued by kemenperin, wicker wicker processing industry sector has amounted to US $ 265.46 million which ranked sixth from other industry sectors.

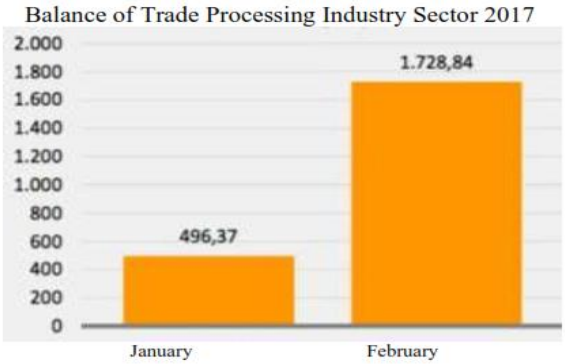

Figure 1. Trade Balance of Processing Industry

The growth of the export value of the processing industry itself, including the rattan processing industry in February 2017 in month to month decreased by 1.36%, but year on year

rose by 11.99%. The year-on-year performance is lower compared to the year-on-year performance in January 2017, which grew by 26.27%.

Figure 2. Export and Import Growth

The issues that must be in the rattan sector should be studied further. In the upstream sector, most businesses complain that the ban on the export of cheap rattan by low-cost government has become an agent in a business for upstream business actors because it puts considerable pressure on the price of raw rattan so that business actors are reluctant to cultivate or harvest rattan from the forest. So that the domestic industry is currently quite difficult to get a quality rattan. In addition, the rampant use of synthetic rattan that has a much cheaper price of 20-30% compared with natural rattan is also a threat to Indonesian rattan.

In improving the competitiveness of the rattan industry, rattan industry clusters should pay attention to the needs and wants of consumers not only limited to products or services produced but also on aspects of processes, human resources and environment that ultimately can control the market. In addition, the rattan industry cluster must be able to apply an appropriate competitive strategy for its products based on the competitive advantage of the business, where the competitive advantage is obtained when the position of the company is able to provide competitive power and can attract buyers. One of the competitive advantages that can be applied is through the emphasis on the quality of the resulting product. To have a long-term advantage then the company must be able to compete in three factors namely flexibility, quality and cost. Quality of goods is based on the measurement or valuation of certain characteristics such as durability, exclusivity, outward form of the product (color, shape, packaging) and the price determined by product cost. Quality can serve as a strategy in business because consumer concern for quality increases as business competition becomes more intensive (Montgomery, 1985).

Continuous quality improvement will be followed by a decrease in costs. This decrease in cost occurs, among others, due to the decrease in scrap, rework, and consumer confidence in the quality of products that generate loyalty to the product. The problems that are often encountered is the limitations of technology to make the production process becomes often experienced failure and cause scarp. Yuniarti, Kusuma, & Lihan (2013) identified various support activities consisting of Technology Development (knowledge and technology development of equipment), Infrastructure (public affairs, government relation), and Human resource Management (promotion and employee salary arrangement) at industrial clusters of rattan in Southern Lampung. Rattan cluster's producers have some such weaknesses as small factory size, representative workplace, and shortage of quality control personnel in either steam, weaving, or finishing divisions, no business trademark (patent), and poor performance of the workers (Yuniarti, 2014). Then Yuniarti et.all (2016) found that the development of rattan industry cluster in South Lampung was determined by three determinants of success: (1) resource and capability factors, (2) external cluster network factors, and (3) internal cluster network factors and partnerships.

Literature Review

Cost of Quality Concept

Goetsch dan stanley (2000: 49) cite Deming's opinion about the notion of quality:

"*Quality can be de ned only in terms of the agent, who is the judge of quality?In the mind of the production worker, he produces quality if he can take pride in his work. Poor quality, to him, means loss of business, and perchaps of his job. Good quality, he thinks, will keep the company in business. Quality to the plant manager means to get the numbers out and to meet speci cations. His job is also. Whether he knows it or not, continual improvement of leadership*".
Supriyono (2002: 379) divides quality costs into four categories: 1) Prevention Costs, 2) Appraisal Costs, 3) Internal Failure Costs, 4) External Failure Costs. According to Feigenbaum (1991: 130-131) the benefits of quality cost analysis are as a tool of man programming, measurement, process quality analysis tools, budgeting, and forecasting.

The Effect of Quality Cost on Company Performance

Quality is one of the determinants of the company's survival. The entity has made substantial investments in improvement programs and quality control in an effort to improve the quality of products and services produced. Implementation of these programs will create a cost called cost of quality. Quality costs will increase in number if the management does not give special attention to quality issues.

The results of Evans and Lindsay (1996), PIMS Associate, Inc., have tested more than 1,200 companies to determine the impact of product quality on company performance, and the results show that: (1) product quality and protability are closely linked, (2) business / firms offering high quality products and services have greater market share, and (3) quality is positively associated with higher return on investment. Similarly, the results of the research of Usaman (2011) showed that the cost of quality activities consisting of preventive activities, control activities, internal failure activities, and external failure activities significantly influenced the performance of manufacturing companies in Palu City. Based on the above explanation, the hypothesis formed in this study are:

H_1: Implementation of quality costs consisting of preventive costs, assessment costs, internal failure costs and external failure costs affect simultaneously on the performance of companies in industrial companies.

Methodology

Data collection techniques used mostly obtained from the interview. To improve the credibility of research findings then used other methods of data collection is the spread of questionnaires, direct observation and document analysis and records. Type of qualitative research with case study approach. The object of the study is the cost of quality which consists of prevention activities, control activities, internal failure activities, and external failure activities

The method used to analyze the data is path analysis (Path Analysis). Path Analysis is used to analyze the relationship patterns between variables with the aim to determine the direct or indirect effect of a set of independent variables (exogenous) to the dependent variable (endogenous). The magnitude of the (relative) effect of an exogenous variable to an endogenous variable is defined by the path coefficient.
The path analysis formula is:

$$Y = \rho YX_1(X_1) + \rho YX_2(X_2) + + \rho YX_3(X_3)\ \varepsilon$$

.....(structural equations)

Note:

Y	:	Endogenous variable (rattan industry performance)
X_1	:	Exogenous variable (preventive costs)
X_2	:	Exogenous variable (assessment costs)
X_3	:	Exogenous variable (internal failure costs and external failure costs)
ρ	:	Path coefficient

ε : Residual variable

Results

The test results of the influence of each exogenous variable (X) on the endogenous variable (Y), pathway coefficient (X1, X2, X3), the multiple determination, the external variable determinant to Y, and the external variable path to Y, the direct effect, indirect effect, sub total effect, or the effect of the total variable (Xi) on (Y), as a whole in the following table.

Table 1. Statistical Estimation

Model	Variable	Coefficient of Path	t	Prob. (sig. t)	F	Prob. (sig. F)	R^2
1	X_1	0,267	1,592	0,120	24,980	0,000	0,664
	X_2	0,168	0,912	0,368			
	X_3	0,430	2,119	0,041			
2	X_1	0,306	1,892	0,066	37,216	0,000	0,656
	X_3	0,541	3,343	0,002			

Source: Author, 2017

The first model in the table above shows the coefficient of the X1 and X2 variable paths not significant with probability greater than 0.05. Therefore, the model needs to be improved through the trimming method, ie dropping or removing variables X1 and X2 from the next analysis. The trimming result is explained by second model, so the relationship of variables X1, X3, and Y in second model can be illustrated as in Figure 3.

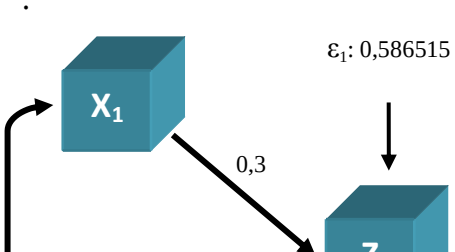

Figure 1. Stuctural Empirical Causal Relation

The structural equation X1, X3 to Y in the rattan industry can be formulated as follows: Y= 0,306 X_1 + 0,541 X_3 + 0,586515e_2 ; $R^2_{YX_3X_1}$ = 0,656

The application of quality costs contributes or positively influences the performance of rattan industry enterprises in southern Lampung. The amount of path coefficient of the application of quality cost to company performance is equal to 0,656 or 65,6%. The rest of 34.4% is an influence that comes from other factors not explained through this research. Path coefficient obtained will be tested both simultaneously and partially, as follows: Hypothesis testing is done through F test statistic. Based on the results of empirical test shown in Table 1 obtained value of F for model one of 24.980 with probability value (sig): 0,000. Because the sig value <0.05, then Ho is rejected. This means that the cost of prevention, Appraisal Costs, and Failure costs have a positive effect on the success of SMEs rattan. The amount of influence of Prevention Costs (X1), and Appraisal Costs (X3) on the performance of Rattan industry (Y) can be seen in the following table.

Table 2. The Influence of Prevention Costs (X1) and Appraisal Costs (X3) on the performance of Rattan industry (Y)

No	Influence	The number of influence

A	Direct influence:	
	X_1 to Y	9,36%
	Indirect influence	
	Through X_3	13,48%
	Total influence	**22,84%**
B	Direct influence:	
	X_3 to Y	29,27%
	Indirect influence	
	Through X_1	13,48%
	Total influence	**42,74%**
	The total effect of X1, X3 on Y	**65,59%**

Source: Author, 2017

Individual tests were conducted to examine the effect of each endogenous variable on exogenous variables. Based on the result of empirical test shown in Table 1, the coefficient value of X1 to Z is equal to ρ_ (〖ZX〗 _1) = 0,267 (t = 1,592; P = 0,120). The result shows the coefficient of path X1 to Z is not statistically significant (Ho can not be rejected). Because there is no significant coefficient path, it is necessary to trimming, ie removing exogenous variables that are not significant from the model. The results are shown by the two models in Table 1. From the two models, the coefficient of X1 pathway that was originally not significant was significant with α less than 10%. The path from X1 to Z is ρ_ (〖ZX〗 _1) = 0,306 (t = 1,892; P = 0,066).

Implementation of preventive costs contributes or positively influences the performance of rattan industry enterprises. The magnitude of the cost prevention path coefficient on the performance of the rattan industry is 0.306 or 30.6%. The amount of influence of the total cost of prevention on the performance of the rattan industry is 22.84%. The effect consists of a direct influence of 0.0936 or 9.36% and indirect influence through the failure cost of 0.1348 or 13.48%.

The results are supported by several opinions, among others: (1) Kaplan and Norton (1996) if the design engineers receive quality training, they can redesign the product to decrease the number of defective units, if the number of defective units goes down, customers will increase, if customer satisfaction increases, then the market share will increase; if market share increases, then sales will increase; if sales increase, then profit will increase; (2) Ahire, et.al., (1996), a successful organization is an organization that relies on development programs on empowerment and employee engagement. But empowerment itself is not a guarantee of full participation of employees.

Implementation of internal failure costs contributed or positively influenced the performance of rattan industry in South Lampung. The amount of coefficient of failure cost path to company performance is equal to 0,541 or 54,1%. The magnitude of the effect of total internal failure cost of 0.4274 or 42.74%. The effect consists of a direct influence of 0.2927 or 29.27%. The results of these calculations are supported by several opinions, such as Goetsch and Stanley (2000), which states that the customer must be the top priority of the company, because the company that prioritizes customer satisfaction will make the customer become loyal to the product, also will bring new payment, will eventually increase earnings. Evans and Lindsay, (1996), states that firms should recognize that customer satisfaction guarantees pro tability and survival and furthermore becomes a superior enterprise in competition.

Discussion and Conclusion

Based on the result and discussion, Cost activity costs consisting of the cost of preventive activities, the cost of control activities, the cost of internal failure activities, and the cost of external failure affect the performance of the rattan industry in southern Lampung. This indicates that the rattan industry in southern Lampung is generally committed to the quality of both process quality and product quality. Failure cost activity has a dominant contribution to the performance of the rattan

industry by 42.74%, when compared to other quality cost activities.

Acknowledgments

We thank many people who gave up their time to provide information, principally through interviews, for this study. In addition, we are grateful to the support of the ministry of research, technology and higher education (Research, Tecnology, and Higher Education Ministry) for providing fund for this research. We are especially grateful to State Polytechnic of Lampung for providing facilities and infrastructure in research data processing. We also thank the editors for substantial suggestion to improve this article.

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