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Green Supply Chain Management Performance in Timber Companies

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ABSTRACT

The aim of this study to determine the effect of waste treatment standards, the company's internal environment, and the company's external environment on Green Supply Chain Management at timber companies in Lumajang Regency. This type of research is quantitative by looking for causal relationships. The object of this research is a timber company in Lumajang Regency. The sampling technique used was Non Probability Sampling and the technique chosen was purposive sampling with a total of 70 respondents. As The independent variable consists of waste treatment standards, the company's internal environment and the company's external environment. The dependent variable is Green Supply Chain Management. The data analysis technique used is descriptive statistics with multiple linear regression analysis. The results of this study indicate that partially the waste treatment standards and the company's internal environment have a significant effect on Green Supply Chain Management, while the company's external environment partially has no significant effect on Green Supply Chain Management. Simultaneously, waste processing standards, company internal environment, company external environment have a significant effect on the Green Supply Chain Management of timber companies in the district.

Keywords: Green Supply Chain Management, Waste Management Standards, Company Internal Environment, Company External Environment.

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INTRODUCTION

Indonesia is a country that is very rich in natural resources. So it is not surprising that Indonesia is known as a commodity exporting country of various types of raw materials such as wood as raw material for making furniture, building materials and industrial complementary materials such as fruit boxes and other equipment. However, this can have a significant impact on the scope of the industry. The impact is quite felt around the manufacturing industry and home industry, namely the increase in the economy of the Indonesian people in general and the people of Lumajang Regency in particular.

The negative impact is the occurrence of environmental damage due to environmental pollution. Pollution in the environment will disrupt environmental sustainability which can endanger humans and other living things. With various types of damage that occur to the environment, real action is needed to respond to these various types of damage. Public awareness in responding to environmental changes is manifested in the selection and use of environmentally friendly products. The results of Waskito and Harsono's research (2011) found that the level of public awareness began to grow towards environmentally friendly products. For this reason, business actors need to apply the concept of caring for the environment in their business processes, including the supply chain.

The main waste produced by the wood factory is in the form of small pieces and chips from cutting and shrinkage. This waste is very difficult to reduce, it can only be used optimally into other goods that have economic value. Several other wastes from the wood industry actually have a big role in financing and environmental impact, so it would be very profitable if they could be reduced. In addition, there is also waste that is produced, such as the results of finishing other equipment, usually many wood companies do not realize the importance of protecting the surrounding environment so that a lot of waste is dumped into the river or around it. environment, giving off a very strong scent.

The existence of this waste creates obstacles in its handling, namely being allowed to rot, pile up and burn which has a negative impact on the environment so it is necessary to pay attention to prevention. One way you can What is taken is to use it into a product that has added value with applicable and popular technology so that the results are easy disseminated to the public and as an initial goal, namely to provide added value and safety for living environment.

Pieces of wood and sawdust as a basis for making wooden furniture. Sawdust and wood chips from the current production process are generally used by factories as additional materials for making plywood, MDF (medium density fiber board) and other sheets. Small-scale companies and locations far from chipboard manufacturing plants use this waste as an additive for boiler combustion at Kiln Dry. Some of it is also used by local people as fuel for small industries such as bricks, ceramics or household kitchens.

Green Supply Chain Management (Srivastava, 2007) is a concept that integrates environmental thinking into supply chain management, which includes product design, procurement and selection of raw materials, manufacturing processes, delivery of the final product to consumers and even setting the flow of products after use by consumers. All of these activities must be managed with due regard to environmental friendliness. The application of the Green Supply Chain Management concept in addition to reducing environmental pollution can also increase the efficiency of companies in the supply chain. Another advantage is that it can reduce the use of resources in the production process, especially in the procurement of raw materials.

Companies that have adopted Green Supply Chain Management believe that being aware and caring about environmental conditions is the most appropriate solution for business and the environment. According to Vachon and Klassen (2008), when a company strives to achieve sustainability in an environmental aspect, management must expand their business to improve environmental-related practices along the supply chain.

In its application, the Green Supply Chain Management concept must be continuously evaluated so that it can continue to be developed. The evaluation process of the application of this concept can be realized by measuring the output produced from the supply chain. Supply chain performance is all activities of fulfilling requests from customers or a percentage of the activities of fulfilling company requests to consumers. According to Pujawan (2005), a performance measurement system is needed to monitor and control, communicate organizational goals to functions in the supply chain, find out where the position of an organization is reactive to

competitors and to the goals to be achieved and determine the direction of improvement to create competitive advantage.

The environmental management system was developed to provide basic guidance so that business activities are always familiar with the environment. Supply chain management emphasizes an integrated pattern regarding the process of product flow from suppliers, manufacturers, retailers to end consumers (Pujawan, 2005; Chopra and Meindl, 2004). In the concept of Supply Chain Management, the series of activities between suppliers and end consumers is one unit without a large partition so that the entire chain works together to become more competitive (Chopra and Meindl, 2004). All parties in one supply chain must cooperate with each other as much as possible to improve their services. Thus goods and services can be distributed in the right amount, time and location to minimize costs to meet consumer needs.

We need to know that Lumajang Regency is the largest timber producer in East Java, so there are many timber companies that are developing. Of the total there are 200 timber companies, only 150 have been licensed and of course have export quality. From the proliferation of timber companies, it turns out that there is an interesting problem to examine, namely the wood waste produced. The company also does not understand how to solve it and this has been happening for a long time.
An initial survey I conducted of approximately 75 companies using a questionnaire revealed surprising results regarding corporate waste. At the beginning of this survey, what I asked was a problem that needed to be resolved related to the number of timber companies in Lumajang Regency. The second question is what the impact of the problem. The results obtained are that the problem that needs to be addressed is related to waste from the company. And next, what are the stages that the company needs to do so that this can be resolved, especially in accordance with the references used, namely the PROPER standard from the Ministry of Environment.

PROPER is a Company Performance Rating Program in Environmental Management developed by the Ministry of Environment (KLH) since 1995, to encourage companies to improve their environmental management. From the proper assessment, the company will get an image / reputation according to how it manages its environment. The image is graded in gold, green, blue, red and black. Gold proper is the best proper, meaning that the company has implemented a comprehensive and continuous environmental management. If a company gets 2x black consecutively, the company can be sued and the business will be stopped.

The importance of concern from the internal environment turns out to be a supporting factor in resolving the problem. Factors that are very supportive in the internal environment include the company's finances or budget. Without the company consciously budgeting for waste management this will remain a problem. The second is the amount of production, the more production is produced, the more waste will be generated. This does not mean that the company cannot produce in large quantities, but needs to think about solutions that need to be done. Hasibuan (2011: 120) provides the following definition of organization, Organization is a formal, structured, and coordinated union system of a group of people who work together to achieve certain goals.

The need for this environmental action to be carried out to minimize the impact of pollution caused, but still have to maintain the continuity of the production of the timber company itself as an additional income for the community, the company itself and contribute to the Regional Original Income in Lumajang district. There are still few industries that use environmentally friendly technology, because entrepreneurs are more likely to focus on looking for profits rather than saving the environment which is costly. However, nowadays, with the innovation in environmentally friendly technology that is able to save costs, saving the environment can be done in line with the company's goal of seeking profit and towards a green industry. Based on the above background, the researcher wants to conduct a discussion through this final project by researching Green Supply Chain Management Performance in Timber Companies in Lumajang Regency.

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METHODS

This research was conducted at a timber company in Lumajang Regency. This type of research used in this research is quantitative researchby looking for causal relationships. This study analyzes and tests the value theory of the research variables using statistical methods to determine the relationship between these variables.The objects in this study are all large-scale and licensed timber companies in Lumajang district. The sampling technique used was Non Probability Sampling and the technique chosen was purposive sampling with a total of 70 respondents.

This independent variable consists of the waste treatment standard (X1), the company's internal environment (X2) and the company's external environment (X3). And for the dependent variable green supply chain management (Y1). The method used in this research is quantitative descriptive method, while the approach taken is to analyze whether all timber companies in Lumajang district comply with environmental standards in their waste management. Data collection techniques in this study were carried out using questionnaires, interviews, documentation, observation. Data analysis techniques include validity and reliability tests, classic assumption tests (normality test, multicollinearity test and heteroscedasticity test), multiple linear regression analysis, and hypothesis testing (t test, dominant test, and coefficient of determination).

RESULTS AND DISCUSSION

Based on the results of data collection in this study, it is part of a timber company in Lumajang Regency, which totals 70 respondents. Based on the research results obtained an overview of the identity of the respondents based on the name of the respondent, the name of the company and the position in the company.

The results of the validity test are said to be valid if r count is at least 0.3 or r count is greater than r table. The results of the validity test of the green supply chain management (Y) variable obtained r count for the first question (green supply chain management 1) of 0.616, for the second question (green supply chain management 2) of 0.550, for the third question (green supply chain management 3) amounting to 0.554, for the fourth question (green supply chain management 4) of 0.642, all of which have a significant level of 0.000 or below 10%. Reliability test results show the Cronbach's Alpha reliability coefficient for the Waste Treatment Standard (X1) variable of 0.661, the Company's Internal Environment variable (X2) of 0.848, the Company's External Environment variable (X3) of 0.736, the Green Supply Chain Management (Y) variable of 0.710. It can be concluded that the questionnaire used to measure the Waste Treatment Standard (X1) variable is realistic, for the Company's Internal Environment variable (X2) is Very Reliable, for the Company's External Environment variable (X3) is Reliable. Green Supply Chain Management (Y) is Reliable. So that the questionnaire used is a reliable questionnaire, because if it is used to measure back, it will give results that will not be different for the same subject at different times.Multicollinearity test results VIF $\leq$ 10 for all independent variables, also with a tolerance value $\leq$ 0.01. Thus it can be concluded that there is no multicollinearity between the independent variables in the regression model. The test results show that the tolerance value for the standard tolerance for waste treatment is 0.624, the tolerance for the company's internal environment is 0.676, and the tolerance value for the company's external environment is 0.941. The standard VIF value for waste treatment is 1.604, the VIF value for the company's internal environment is 1.479, and the VIF value for the company's external environment is 1.163. All variables used, including waste treatment standards, the company's internal environment, and the company's external environment, have a tolerance value $\geq$ 0. 1 and the VIF value $\leq$ (Variance Inflation Factor) $\leq$ 10 means that the three variables do not occur multicollinearity, which means that all of these variables can be used as mutually independent variables. The results of the heteroscedasticity test on the sample companies showed the results of the sig value. 0,000 or greater than 0.05 so it was

decided that there was no indication of heteroscedasticity or the data were said to have the same variants. So that the model is free from heteroscedasticity symptoms or the data is said to have the same variant (homoscedasticity).

Table 1. Results of Multiple Linear Regression Analysis

Coefficientsa

Model		Unstandardized Coefficients	
		B	**Std. Error**
1	(Constant)	3,457	4,496
	Waste Treatment Standards	.150	.74
	Internal Resources	.543	.198
	External Resources	.223	.224

a. Dependent Variable: GSCM

Source: Results of data processing, 2020

Multiple linear regression analysis is used in order to determine the formulation of the effect of the independent variable on the dependent variable. Based on the results of the analysis, the formulation of the multiple linear regression analysis model in this study is as follows: $Y = 3.457 + 0.150\ X_1 + 0.543\ X2 + 0.223X3$

The constant value is 3.457, indicating that if the standard variable value of waste treatment, the company's internal environment, and the company's external environment is zero or constant, the value of green supply chain management is 3.457. The waste treatment standard regression coefficient (X1) of 0.150 indicates that if the value of the standard waste treatment variable increases by 1% with the assumption that the other independent variables are constant, the green supply chain management variable decreases by 0.150. Assuming that the company's internal environment (X2) and the company's external environment (X3) are constant. The regression coefficient for the company's internal environment (X2) is 0, 543 shows that if the value of the company's internal environment variable increases by 1% with the assumption that the other independent variables are constant, the green supply chain management variable increases by 0.543. Assuming that the standard variable waste treatment (X1) and the company's external environment (X3) are constant. The regression coefficient for the company's external environment (X3) of 0.223 indicates that if the value of the company's external environment variable increases by 1% with the assumption that the other independent variables are constant, the green supply chain management variable increases by 0.223. Assuming that the standard variable waste treatment (X1) and the company's internal environment (X2) are constant. Assuming that the standard variable waste treatment (X1) and the company's external environment (X3) are constant. The regression coefficient for the company's external environment (X3) of 0.223 indicates that if the value of the company's external environment variable increases by 1% with the assumption that the other independent variables are constant, the green supply chain management variable increases by 0.223. Assuming that the standard variable waste treatment (X1) and the company's internal environment (X2) are constant. Assuming that the standard variable waste treatment (X1) and the company's external environment (X3) are constant. The regression coefficient for the company's external environment (X3) of 0.223 indicates that if the value of the company's external environment variable increases by 1% with the assumption that the other independent variables are constant, the green supply chain management variable increases by 0.223. Assuming that the standard variable waste treatment (X1) and the company's internal environment (X2) are constant.

Based on the results of the t test (partial test) variable X1, namely the standard of waste treatment, the value of t count = 2.015 with a significant 0.049. By using a significant limit of 10% or 0.10, the t table count is ± 1.668. This shows t arithmetic 2.015> t table 1.686, which means that Ho is rejected and Ha is accepted. With a significance level of 0.049 which is below the significance level of 0.10, it can be concluded that the waste treatment standard has a partially significant effect on green supply chain management.
The results of hypothesis testing show that the standard of waste treatment has a significant effect on green supply chain management. This research is in line with the theory of waste processing which says that waste treatment is a residual product from unused wood chips which can provide superior value by creating a product that is expected by consumers.
Several facts and results of interviews that have been conducted show that the Waste Treatment Standard variable is mostly in accordance with the standards set in Lumajang Regency, which is evident from the majority of respondents giving responses that the waste treatment standards in companies in Lumajang Regency are mostly already implementing standards in accordance with the legislation.

Based on the results of the t test (partial test) variable X2, namely the price obtained by the value of t count = 2.749 with a significant 0.008 By using a significant limit of 10% or 0.10, the t count table is ± 1.668 This shows t count 2.749> t table 1.668, which means Ho was rejected and Ha accepted. With a significance level of 0.008 which is below the significance level of 0.10, it can be concluded that the company's internal environment has a partially significant effect on green supply chain management.

The results of hypothesis testing show that the company's internal environment has a significant effect on green supply chain management. This research is in line with the company's internal environmental theory which states that the company's internal environment is a strategic planning process that examines the fields of marketing and distribution of companies, research and development, production and operations, company resources and employees, as well as financial and accounting factors to analyze strengths. and the weaknesses of each of these divisions so that the company can take advantage of opportunities in the most effective way and can deal with threats.

Some facts from interviews that have been conducted show that most of the company's internal environmental variables have carried out the process of processing waste according to legal standards that have been adjusted in Lumajang Regency, which is evident from the majority of respondents giving responses that the company's internal environment has provided a reflection regarding the processing process. which is in accordance with existing provisions.

The results of the t test on variable X_3 that is, the internal environment of the company obtained the value t count =0.994 with a significance of 0.324. By using a significant limit of 10% or 0.10, the t table count is ± 1.668. This shows t count 0.994 <t table 1.668, which means that Ho is accepted and Ha is rejected. With a significance level of 0.324 which is above the significance level of 0.10, it can be concluded that external resources have no partially significant effect on green supply chain management.

The results of hypothesis testing indicate that the external environment of the company does not have a significant effect on green supply chain management. This study is in line with the company's external environment theory which states that the company's external environment is a factor beyond its control that affects the company's choice of direction and action, which in turn also affects its organizational structure and internal processes.

From the results of interviews that have been conducted, most of the company's external environmental variables are still not supportive and agree with the current waste processing process, which is evident from the majority of respondents giving a response that the external

environment of the company has not provided support and facilities related to the process. processing that is in accordance with existing provisions.

The F test is used to determine the effect of the independent variables, namely waste treatment standards, the company's internal environment, and the company's external environment, which are significant together or simultaneously on the dependent variable, namely green supply chain management. To carry out f testing of the research variable, the results of the f table will be required. the results of f table at a significant level of 10% or 0.10 with degrees of freedom (n - k - 1) = 70 - 3 - 1 = 66. from the test results, it can be seen that the calculated f value of 11.128 is greater than 2.17 with a significant level 0,000 <0.10. So that it can be seen simultaneously that the variables of waste treatment standards, the company's internal environment, and the company's external environment have a significant influence on green supply chain management.

The coefficient of determination test aims to determine how much the ability of the model to explain independent variation to dependent variation. Test the efficiency of determination using the value of R square (R2). The coefficient of determination test results at the R square (R2) value of 0.336 or 33.6%. This value shows that the green supply chain management is influenced by the level of managerial ownership, company size, and the quality of the waste treatment standard audit, the company's internal environment, and the company's external environment 33.6%, while the rest is indicated by a value of € 66.4%. that green supply chaint management is influenced by other variables not examined in this study.

CONCLUSION

This research was conducted at timber companies in Lumajang Regency about the effect of waste treatment standards, the company's internal environment, and the company's external environment on green supply chain management. Based on the results of the research and discussion that has been carried out in the previous chapter, the following conclusions can be drawn: a. The results of hypothesis testing on the standard variable waste treatment show that the standard of waste treatment has a partially significant effect on green supply chain management. b. The results of hypothesis testing on the company's internal environmental variables show that the company's internal environment has a partially significant effect on green supply chain management. c. The results of hypothesis testing on the company's external environment variables indicate that the company's external environment does not partially have a significant effect on green supply chain management.

Based on the results of the discussion analysis and some of the conclusions above, the researchers provide the following suggestions: a. The company should continue to maintain the internal and external environment in the company's waste treatment process in accordance with the waste management legislation issued by the Ministry of Environment. b. For other researchers. Based on the research, this topic can be reviewed by using a different population, sample, so as to get other better findings and useful for developing knowledge. This research can be used as a similar reference and can be used as a reference for studies in other objects with different research models.

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