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PREFACE: 6th International Conference of Education, Concept, and Application of Green Technology

The 6th International Conference on Education, Concept, and Application of Green Technology by Engineering International Committee (EIC 2017) was held in Grand Candi Hotel on 11th October 2017. This event was organized by Faculty of Engineering, Universitas Negeri Semarang (UNNES), Indonesia.

The conference was successfully carried out with more than 100 pre-registered authors submitted their works in the EIC 2017. The 85 presented papers preserved the high pledge recommended by the written abstracts and the program was chaired in a professional and efficient approach by the session chairmen who were selected for their international in the subject. The 56 selected papers were reviewed by reviewers from various countries and edited by reputable experts.

The committee has accepted full papers from USA, Australia, Thailand, Philippines, Malaysia, and Indonesia. This conference provides a platform for academicians, researchers, professionals, industries, and other stakeholders from all over the world to explore and share their experiences, information, research results, exchange state-of-art findings and views as well as discuss various cutting-edge issues that are related to the theme of this conference. Moreover, this conference provides a discussion forum to establish business or research relations and to find global partners for future collaboration.

Organizing an international conference involves great energy to finish complex and substantial detail therefore I would like to express my gratitude to all members of EIC 2017 organizing committee for their sincere cooperation to hold this event. EIC 2017 would not be possible without our keynote speakers, presenters, reviewers, all participants, and Universitas Negeri Semarang.

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Analysis of logistic distribution performance of good supply from PT. Mentari Trans Nusantara distribution center to branches using Smart PLS 3.0

Titin Endrawati and M. Tirtana Siregar

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ARTICLES YOU MAY BE INTERESTED IN

Analysis of Logistic Distribution Performance of Good Supply from PT. Mentari Trans Nusantara Distribution Center to Branches Using SMART PLS 3.0

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Abstract. PT Mentari Trans Nusantara is a company engaged in the distribution of goods from the manufacture of the product to the distributor branch of the customer so that the product distribution must be controlled directly from the PT Mentari Trans Nusantara Center for faster delivery process. Problems often occur on the expedition company which in charge in sending the goods although it has quite extensive networking. The company is less control over logistics management. Meanwhile, logistics distribution management control policy will affect the company's performance in distributing products to customer distributor branches and managing product inventory in distribution center. PT Mentari Trans Nusantara is an expedition company which engaged in good delivery, including in Jakarta. Logistics management performance is very important due to its related to the supply of goods from the central activities to the branches based oncustomer demand. Supply chain management performance is obviously depends on the location of both the distribution center and branches, the smoothness of transportation in the distribution and the availability of the product in the distribution center to meet the demand in order to avoid losing sales. This study concluded that the company could be more efficient and effective in minimizing the risks of loses by improve its logistic management.

INTRODUCTION

Goods and services have become human needs that cannot be separated from daily life. The process called distribution is needed to make sure that the goods and services are well received by the customers. The high cost of goods or logistic shipping especially in Indonesia still remains although the advance of new technology in communication and transportation has brought some positive impacts. In fact, in related to the distribution of good production, the transportation cost is still considered expensive. So far, the government supports business owners by giving some incentives in the form of cutting logistic costs so that the flow of goods shipment can run fast. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question[1].

Container process in the field of maritime has changed the strategy and fleet structures of traditional shipping. The progress in flight, railway and land road has also led to goods and passengers mobility from one country to another country around the world. Hence, PT Mentari Trans Nusantara has one specific transportation logistic division which served as a fleet in the transport of goods either export goods or imported goods[2].

Basically logistics are some processes ranging from obtaining goods from the real resources, then the process of goods in the factory, the storage of goods, and then distributing goods to the user's hand. Every company should find ways to shorten the lifecycle cycle of product distribution by redesigning the logistics distribution network because it is a necessary strategy to be developed[3].

Every production plant is connected to a storage warehouse whereas each warehouse is connected to a particular plant. It is assumed that the cost of transportation between each production plants is included in production costs. By analyzing the proper arrangement either the factory location or the warehouse to serve the targeting market and also

using the vehicle by the means of transportation, dynamic programming in the delivery of goods, so that traditional logistics can be optimized to maximize the efficiency of the distribution[4].

Some problems faced by the company include production time yet inventory and warehouse location. Some changes in distribution network may occur at any time which is not predictable from the initial planning.

From the previous description, it can be defined that logistics is an activity or in other words logistics will always exist in every business process. The existence has even started since an activity of good transformation and its distribution to final consumer begins[5].

PT Mentari Trans Nusantara in all its regions definitely needs a logistics distribution vehicle as a proper sending tool for the company to get to the delivery location quickly. It is observed that PT Mentari Trans Nusantara has delivered many goods to other companies. Some problems occur such as the delay in the delivery of products due to the number of goods sent by PT MTN, the distance of location, the condition of transportation circumstances like roads and the likes. Those are often the main problems of most companies in managing the good supply.

At the previous research, stated that research which is related for the working analysis give the output such as analyzing for strong, weaknesses, opportunity, threat (SWOT) and Balance score card as well as only for based in formulating company strateg[2].

Based on the background and above explanation, this research is examined and interested to observe the phenomena of good distribution delivery. Therefore, this research selected title is "Analysis of Logistic Distribution Performance of Good Supply from PT MTN Distribution Center to Branches of PT MentariTrans Nusantara."

PROBLEMS AND PROBLEM LIMITATION

As one of the role, logistic distribution in trading companies still has some limitations both in the application and also in the system. Most of the company faced several forms of threat neither internal nor external. Specifically in terms of network logistics distribution, there are some sub main problems that must be solved by the company so that logistics considered as an appropriate technology. Therefore, it is necessary to implement a well planned and well organized logistic management.

Among few cases faced by PT MTN, one of the problem is the delay of product entry into the company. The waiting time can be ranged from one to three days. It certainly affect the good supply in related to meet the need of customers due to its empty inventory (inventory).

The logistic problem that usually occur and will be discussed in this research is the presence of delay from the distribution center in supplying products. The number of branches of transportation is the problem that commonly exist. Since the problem factors are so dynamic, in order to minimize the problem, the flexibility of logistics distribution for effective and efficient treatment is obviously needed.

Problem Questions
1. What is the influence of distribution center location onlogistic distribution performance to where PT MTN is shipping?
2. What is the effect of transportation on the logistics distribution performance to where PT MTN is shipping?

RESEARCH METHOD

This research is a descriptive and explanative research. It is due to analyzethe relationship between the application of logistics distribution to the performance of logistics through the questionnaire given or aimed at the object of research that is the distribution center of PT MTN that has applied the logistics distribution as the system used in the delivery of logistics to Distributor customers who are in the branch of PT Mentari Trans Nusantara.PT MTN has a specific management that manages warehouse inventory and management that takes care of product distribution to PT MTN.

The sample taken is the part of the population which still has the same characteristics and can represent the population. As an estimate, if the subject is less than 100, it is better to take all population as a sample so that the research using saturated samples. On the other hand, if the subject is more than 100, it can be taken 20-30% or more. This depends on the ability of the researchers, the width of the observation area, and the size of the risk borne.

ANALYSIS AND DISCUSSION

Data collection technique is done through the spread of a number of questionnaires given to the respondent. It has been determined that there are 87 Employees of PT.MTN Jakarta as the respondents. The formulation of questions contained in the questionnaire refers to the research variables, namely the Locations of Distribution Center (X1), and Transportation (X2) as the independent variables, and Logistic Performance (Y) in PT.MTN Jakarta as the dependent variable. In order to obtain the data in accordance with the required, the questionnaire proposed is designed to meet the following criteria:

1. The question substance is based on theoretical reference, adapted to the dimensions and indicators of the variable as described in the operational definition of the variable, to provide an objective and accurate answer.
2. Each question in the questionnaire is numbered with five alternative answers available to each respondent.
3. Each respondent's answers is transferred into an answer score format containing the questions and score of the respondent's answer, then the sum of scores for each variable.
4. To ease the scoring system, the number of scores in each variable of all incoming questionnaires is compiled into the format of recapitulation score answers through the process of data tabulation.
5. There are 15 questions in the questionnaire given to the respondent, it can be assumed that the range of the score obtained isbetween 15 to 75 for the highest value.
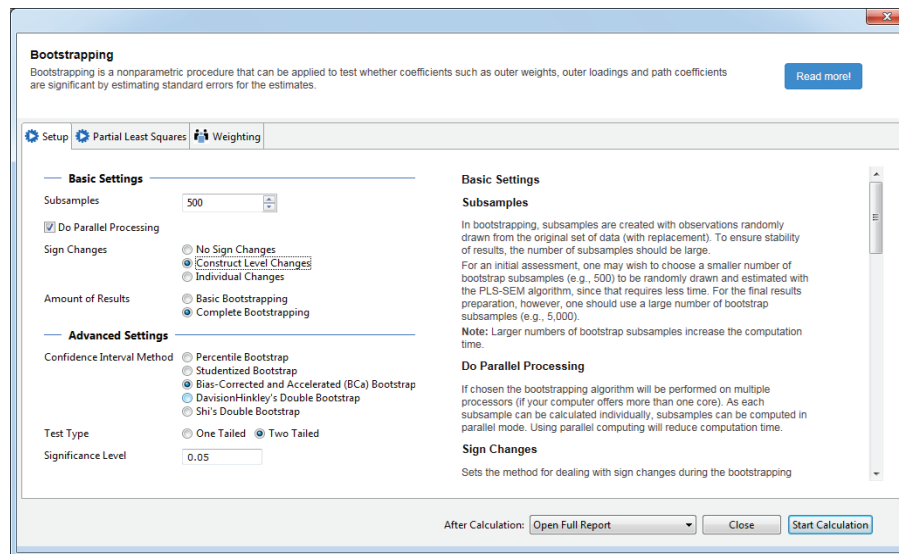

FIGURE 1. Processed data 1

RELIABILITY TEST

Reliability test is a test to show how far a measurement result is relatively consistent if the measurement is repeated twice or more. Reliability testing is used to determine the internal consistency between items of statement in a research instrument. Given the measuring tool used to measure the variables in this study is a questionnaire consisting of several questions, it is necessary to test the reliability of each variable used by using the technique "Chronbach's Coefficient Alpha" to see the coefficient of reliability per group[5].

Based on Chronbach's alpha decision making, if Chronbach's coefficient alpha less than 0.60 means poor acceptable, between 0.60 - 0.70 means quite acceptable, whereas if chronbach's coefficient alpha greater 0.80 means good acceptable (now, 2000). In conclusion, the basis of decision reliability of a variable is:

Chronbach's Alpha $>$ 0.70, Chronbach's coefficient alpha is acceptable

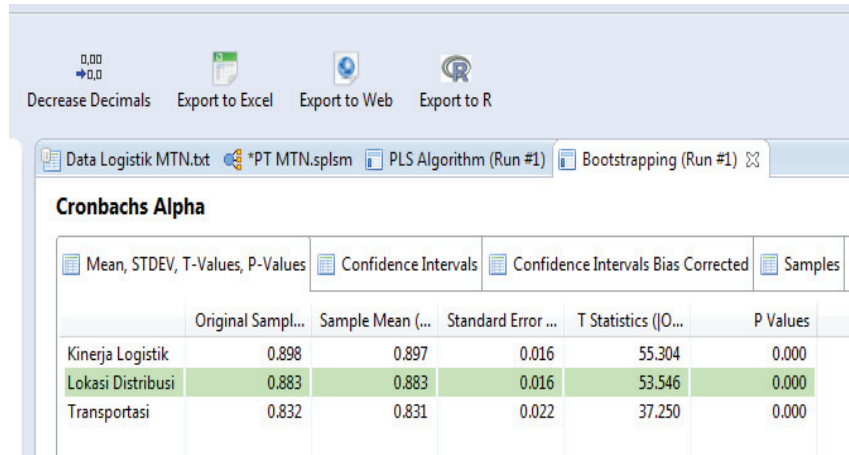Chronbach'sAlpha $<$ 0.70, Chronbach's coefficient alpha is poor acceptable

FIGURE 2. Processed data 2

Please see the Fig. 3 for analyze data of comparing Chronbach's Alpha in shown by graphic.
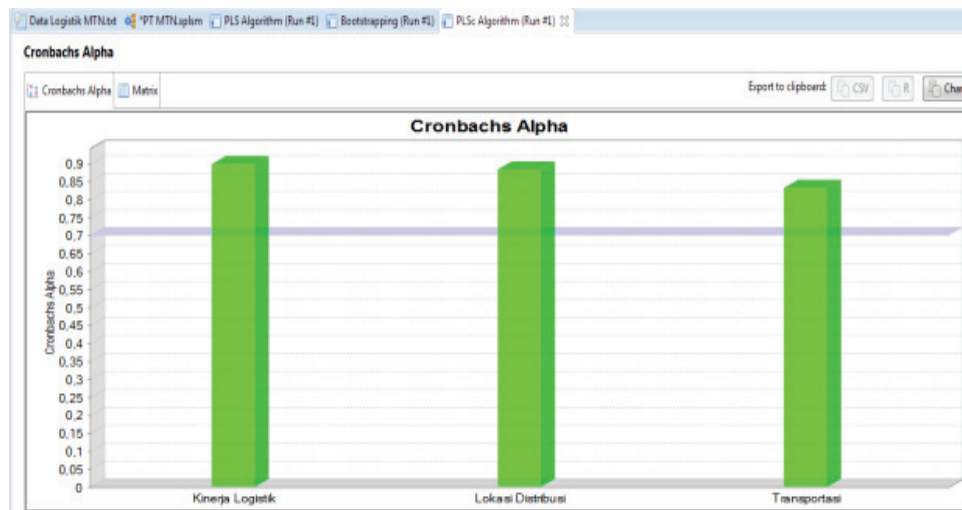

FIGURE 3. Processed data 3

HYPOTHESIS TEST

The Influence of Distribution Location (X1) to Logistic Performance (Y). In order to examine whether there are some influence of the Center Distribution Location (X1) to the Logistic Performance (Y), it is used a simple regression analysis. The data analysis used Smart PLS for Windows Version 3.00 software. Based on data analysis, obtained value 58,4% presented at:
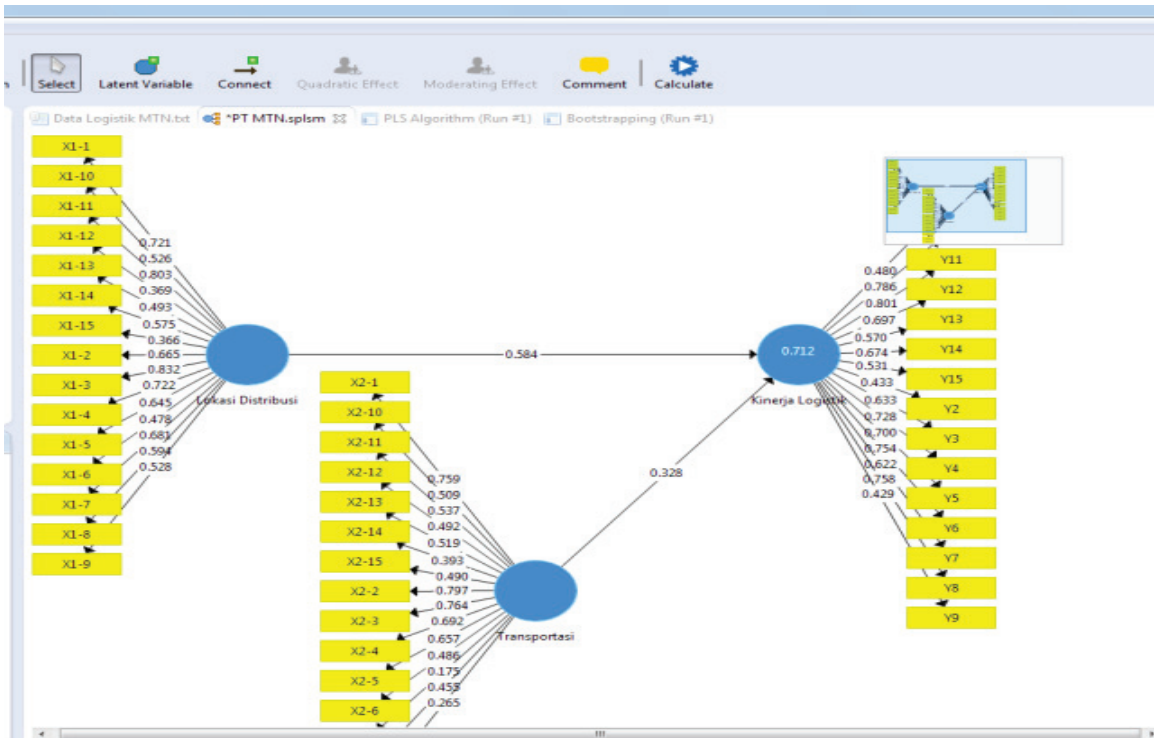
FIGURE 4. Processed data 4

To find out whether there is influence between Transportation (X2) on Logistics Performance (Y), it can be seen from the results Data analysis is done using Smart PLS software support for Windows Version 3.00. From the results of data analysis, obtained a value of 32.8% as in the picture above.

The advantages of smart PLS software is the ability to process data both for formative or reflective models, additionally it able test the relationship between variables, both fellow variable latent or with variable indicators, or manifest. However weaknesses of this software is have to create many picture for descriptive the problem, that will make it bored, meanwhile those works can do with quite simple if using software of programmer. The works just copy the syntax and replace some variables, then running, and then finished. It will be easier with any model that would be made.

CONCLUSION

Based on the problem analysis and discussion in the previous discussion, it can be concluded as follows:
1. Influence of Distribution Location (X1) on Logistic Performance (Y)
2. To find out if there is influence of Location of Distribution Center (X1) to Logistic Performance (Y) equal to 58,4%.
3. While the influence of Transportation (X2) on Logistic Performance (Y) is 32.8% apparently the influence of Distribution Location is bigger. It means that it can be drawn that the closer the distance of Distribution Location, the faster goods will be distributed to the branches of PT MTN.

SUGGESTION

After observing matters relating to the problems in the process of good delivery, it is suggested that:
1. It is necessary to create delivery schedule of goods according to priority date. By socializing the schedule long before, the delivery task can adjust operational implementation of field so that there is no decline in delivery time of goods and there will be no excuses of lateness.
2. Standard Operating Procedures are well written in order to make clear for everyone for the delivery process

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