EFFECT OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES ON SUPPLY CHAIN PERFORMANCE AND COMPETITIVE ADVANTAGE

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ABSTRACT

This study aims to analyze how Green supply chain management practices on the supply chain performance and competitive advantage . Green Supply chain management practies approach to performed with four independent variables namely Green purchasing , manufacturing Green , Green packaging and Reverse logistics.

The population in this study is the small and medium industries in the city of Semarang, central of Java are involved in the production of processed foods amounted to 736 SMEs. Respondents were 80 managers. , by collecting data through questionnaires . The sampling technique in this study uses probability sampling with simple random sampling method. The analysis method used in testing the hypothesis was Structural Equation Modeling (SEM) by using Partial Least Square (PLS)

This study was able to prove the existence of a significant relationship of Green Supply Chain Management to competitive advantage, Green Supply Chain Management to supply chain performance, and as well as Competitive Advantage to supply chain Performance

Keywords: *Green Supply Chain Management practices,competitive advantage, and supply chain performance*

1. Introduction

Competitiveness is an effort that must be done by the business / economics that still exist in carrying out its activities . This term is expressed and become a mainstay of the government's program , but the term is becoming a major issue for economic operators , especially the perpetrators of SMEs . They consider that competitiveness requires " fundamental change and a specific strategy " . Level of competitiveness requires qualified human resources , advanced technology , sufficient capital , and a conducive environment.

Today's business environment has changed radically , directing every industry must be efficient in order to be able to compete with domestic products. The experience of some countries such as Finland, Singapore, China, Japan, and United States suggests that the development of national competitiveness is complex and requires a long period of time. However, their experience in some things we can learn a valuable lesson. These countries capable of changing Herited-competitiveness be created-competitiveness. Competitiveness is no longer dependent on the availability and abundance of resources nature. Those countries are able to go out and change the lack of wealth Nature becomes the ability to innovate to produce valuable products and services height.

SME growth in Indonesia according to data of the Ministry of Cooperatives and SMEs cited by Firmanzah (2013) annual average of 7% of small and medium enterprises from the

amount of 6.2 million SMEs migrate into the small scale of micro, small and of becoming medium. But the majority of SMEs in Indonesia is not competitive (competitive advantage) at the global level. Even at national level, competitiveness (competitive advantage) IKM is still inferior to large-scale industry.

Decline of competitiveness of SMEs is a result of a variety of factor, which identified five (5) important factors that stand out. At the level of macro, there are three (3) factors, namely: (a) not conducive economic conditions macro; (b) the poor quality of public institutions in carrying out its functions as a facilitator and service centers; and (c) weak development policy technology in facilitating the need for increased productivity.

Meanwhile, at the micro level or business level, two (2) factors prominent are: (a) the low efficiency of efforts at the level of operationalization companies; and (b) weak competitive climate in order in order creating pressure in a healthy competition.

Competitive advantage is an important requirement for any company . Needed to create competitive advantage by planning the right strategy of the company. The essence of the strategy lies in the selection of the underlying activities of the strategy so as to provide a different value than the value offered by competitors . Suitability strategy with activity not only can provide a competitive advantage , but also guarantee the sustainability of the strategy [Porter , 1985] . Supply chain management is one form of competitive advantage that is applied in the company .

From previous studies, there is a research gap that is according to research conducted by Rao (2006) using a sample green environmentally company in Southeast Asia showed that it is green environmentally contributes to competitiveness. But after further analysis, there were no strong evidence that environmental concerns have a positive impact on the economic performance of companies. This empirical evidence to reinforce the results of previous research conducted by Green et al. (1998). The studies provide inconsistent results and varied, including performed by Klassen and McLaughlin (1996), Hart and Ahuja (1995).

One of the most important issue is whether it is possible to apply an green environmentally management in a small business? Survey conducted by Murphy et al. (1996) showed that small firms are less interested in implementing the program sustainable than large companies. They have limited resources to implement these programs . Large companies find it more sensitive to undertake environmentally friendly activities since the publication of the activities of large companies more easily exposed to the public than a small - company (Ahmed et al. , 1998) . However , that does not mean smaller companies did not have the opportunity to apply green environmentally activities . Large companies that make the small company as a partner or supplier , are willing to provide mentoring , guidance , and consulting through partnership activities (Champion , 1998).

Given the difference in character between large companies and small companies, an investigation into the green supply chain management practices is an interesting topic to be studied in empirical research. Besides that, it also needs to be carried out an analysis of the factors driving and inhibiting factors that can facilitate small companies to be more involved in environmental awareness.

2. Lieterature

Green Supply Chain Management
Changes in the new industrial era that demands the industry's role in protecting the environment by reducing waste and pollution, causing the green supply chain. Green supply chain caused the

industry improve the balance between performance marketing with environmental issues that gave birth to new issues such as reducing energy use, and reduction of pollution is not just for the long-term survival but also long-term profitability. The company felt the need to improve networking or improving supply chain for waste reduction and efficiency of operations, including the delivery of products and services. Based on this, the goal of green supply chain is to consider the environmental impact of all products and processes, including environmental influences derived from the goods / products and processes ranging from raw materials to finished products, and final disposal of the product.

Green supply chain management is a concept generally known to promising efficiency and synergy between business partners and the corporate enterprise, helping to improve environmental performance, minimize waste and save costs that arise. These synergies are expected to enhance the company image, competitive advantage and market opening. Bowen (2001) in Rao and Holt (2005) suggest that the company will adopt a green supply chain management if they identify that green supply chain management will result in financial benefits and operational. It is therefore a clear need for research to create a potential link between green supply chain management initiatives and increased competitive levels as well as increased economic performance to encourage companies to adopt "green" in its supply chain.

Green supply chain management can be expressed as the purchase of environmentally friendly manufacturing processes that are environmentally friendly, materials management, distribution and marketing of environmentally friendly, and reverse logistics (Linton et al., 2007; Zhu and Sarkis 2006, Srivastava, 2007).

1. The design of environmentally friendly (green design)

Environmentally friendly product design is the design of a product or service that encourages environmental awareness. According to Srivastava (2008), The scope of the design of environmentally friendly (green design) covers many disciplines, including environmental risk management, product safety, health and safety related to employment, pencegahaan pollution, resource conservation, and waste management.

2. The manufacturing process is environmentally friendly (Green manufacture)

The manufacturing process is environmentally friendly manufacturing processes are planned and executed by reducing the risks and negative impacts on the environment. According to Srivastava (2006), manufacturing processes that are environmentally friendly can be divided reduction of resources (reducing), recycling (recycling), recovery of product and material (product and material recovery), reuse (reuse), inventory management (inventory management), and production planning and control (production planning and scheduling).

3. Reverse logistics

Concerns about environmental issues, sustainable development, and the valid legal regulations make the organization responsible for Reverse logistics (Srivastava and Srivastava, 2006). Reverse logistics is the opposite of traditional / forward logistics (Beamon, 1999). Extend supply chain with memasu-kan issues such as production returned (rema-nufacturing process), recycling (recycling), and refurbishing (refurbishing) Menam-even level of complexity to the design of the supply chain that has existed in addition to the new rules regarding operational and strategic issues that are important (Linton, et al., 2007).

4. Waste management (waste management)

Waste management is done to reduce hazardous waste so as not to cause adverse effects on the environment. According to Srivastava (2006), waste management encompasses resource reduction, pollution prevention, and disposal.

Green supply chain is crucial for successful implementation of industrial ecosystem and industrial ecology. All activities along the supply chain risk and negative impact on the environment. According to Beamon (2005), the purpose of managing the supply chain eco-conscious is to consider the final environmental impact and are now of all products and processes in order to protect the natural environment.

Competitive advantage

The competitive advantage is the company's ability for you to create a superior position than its competitors and is highly dependent on the match between the internal capabilities of the organization and changes in the external conditions of the organization (Andrews, 1971; Chandler, 1962; Hofer and Scheler, 1978; Penrose, 1959 cited in Hart, 1995) ,

Companies must take thorough measures to generate sustainable competitive advantage, that advantage over competitors. The company will have a competitive advantage if it fulfills the 3 conditions (Coyne, 1997, p.182-184), namely:
1. Differentiation in important attributes
2. Capability Gap
3. Differentiation in important attributes and capability gap.

This condition is expected to continue in the long term. In the early activities, all of these requirements integrated in a concept called KFS (Key Success Factor or the key to success), the level of freedom and a lower cost or higher value to the consumer. Furthermore, Coyne (1997, p.182-184) suggests competitive advantage is the result of differences between competitors' products, but not just a differentiation. The difference with the existing competitors in the product should be felt directly by consumers which is reflected in some of the Product / Delivery attribute which is key buying criteria for market. And the product must have enough difference to win or get a significant loyalty of buyers, for it must have a footprint in the market.

Based on existing literature then developed a research model that shows the relationship practices of supply chain management, competitive advantage, and supply chain performance. Previous studies indicate that the various dimensions of the practices of supply chain management as a strategic supplier partnerships have an influence on some aspects of competitive advantage as the price level. In Rahmasari study (2011) concluded that the practice of supply chain management and significant positive effect on competitive advantage . Similarly, the results of research Fitriansyah (2013) that supply chain management practices have a direct positive influence and significant competitive advantage . Based on the results of empirical hypotheses can be submitted as follows :
H1 : practices green supply chain management has a significant influence on competitive advantage .

Supply Chain Performance

Companies that have a meaningful competitive advantage companies have the capability and can compete in one or more of the following capabilities than its competitors, namely: lower prices, higher quality, faster delivery times. The capabilities that will enhance the company's overall performance (Mentzer et al., 2000). Competitive advantage will lead to the improvement of the overall performance of the company and the performance of the supply chain.

Results penilitian Fitriansyah (2013) concludes that the competitive advantage of having a direct positive influence and significant impact on the performance of the company. Based on the results of the empirical hypothesis can be formulated as follows:

H2: Competitive advantage a significant effect on the performance of the supply chain

Practices of supply chain management is expected to improve overall supply chain performance. For example strategic supplier partnerships have a direct impact on costs and the level of response to the needs of consumers (Carr & Person, 1999), practices relationships with consumers also have an influence on the company's responsiveness to customer needs (Toni & Nassimbeni, 2000). The increasingly high level of information sharing will lead to increasingly lower costs (Lin, Huang, & Lin, 2002). Based on the results of the empirical hypothesis can be formulated as follows:

H3: practices environmentally friendly supply chain management has a significant influence on competitive advantage

Environmental Observations

Environmental scanning is the acquisition and use of information regarding events, trends, and relationships in an organization's external environment, which is the knowledge that will be able to assist management in planning actions in the future (Choo, 1999, p. 21). The company toward the future environment of uncertainty, where the business environment becomes volatile and managers must be able to adapt. Companies that can adapt to its environment in order to survive and prosper.

Ahituv et.al in Xu (1999) suggests one of the main characteristics of strategic-oriented marketing is the interaction with the external environment by getting important signals. Beal (2000) suggested two measures in the observation of the environment that is how often the managers to monitor the environment (frequency) and how broad in scope (scope).

Information on the corporate environment is needed by decision-makers or strategic planners, because the preparation of strategic plans require different kinds of information (Sabeni, 1999, p.69). Therefore, by keeping the information between parts of the environment can make the company gain a competitive advantage or maintain its market position. The hypothesis proposed as follows:

H4: The better the environmental monitoring carried out, the higher the competitive advantage is achieved.

METHODELOGI

Population and Sample

The population in this study are small and medium enterprises (SMEs) in the city of Semarang engaged in the production of processed food amounted to 350 SMEs. The study was conducted by sampling because the number of SMEs that produce food very much. The sampling technique in this study uses probability sampling method used was simple random sampling, which is taking a sample members who conducted randomly without regard to strata (Sugiyono, 2012). Samples in this study are mostly SMEs that produce or manufacture processed foods Semarang.

Determination of the number of samples using a formula 15 or 20 times the independent variable (Joseph F. Hair, 1988 in Mulyanto, 2011). In this study there were four independent variables, 4 x 20 = 80. Based on the calculations have been carried out, the number of samples used in this study were 80 respondents. However, to facilitate research, the samples

taken to 100 respondents. Determination of the number of samples is also done through ²minimum desired level. In the following table the relationship described samples, the significance level chosen and the number of independent variables in detecting R^2.

Method of collecting data

Distribution of questionnaires conducted on May 1, 2015 until June 1, 2015. Questionnaires were distributed measured with Likert scale. Likert scale used to measure attitudes, opinions, and perceptions of a person or a group of social phenomenon. Measured variables are translated into indicator variables, then used as a starting point for preparing the items that can be a statement or a question (Sugiyono, 2012).

Data Analysis Methods

Analysis of the data in this study using Structural Equational Model-Partial Least Square (PLS-SEM). As an alternative Covariance based SEM, variance approach based or component-based with PLS orientation shift analysis of causality test models / theories into component-based predictive models with PLS is a predictive purposes. Equation Modeling Structural equation modeling (SEM) is a multivariate analysis technique that combines factor analysis and path analysis thus allows researchers to simultaneously test and estimate the relationship between the variables of multiple endogenous eksogendan by many factors.

RESULTS AND DISCUSSION

Based on the analysis of data using PLS, found that all empirical indicators used have fulfilled the outer test models that include convergent validity, discriminant validity, and composite reliability

a. Convergent Validity

In this study to be variebel four latent variables (constructs) and proxy based on several indicators. To determine the validity of the indicators used to measure the latent variables tested the validity. The test results of the indicators of attitudinal variables are as follows:

Tabel 1
Loading Factor

Indikator	original sample estimate	mean of subsamples	Standard deviation	T-Statistic
Green SCM				
GSC1	0.739	0.714	0.126	5.876
GSC2	0.706	0.681	0.124	5.690
GSC3	0.849	0.856	0.038	22.255
GSC4	0.682	0.690	0.116	5.864
Enviromental Observ				
PL1	0.811	0.785	0.101	8.048
PL2	0.796	0.779	0.142	5.610
PL3	0.773	0.784	0.134	5.745
Competitive Advantage				
KK1	0.742	0.723	0.106	7.016
KK2	0.842	0.836	0.078	10.752
KK3	0.848	0.831	0.100	8.463
Performance SCM				

KSC1	0.751	0.776	0.091	8.265
KSC2	0.661	0.648	0.110	5.994
KSC3	0.789	0.775	0.086	9.118
KSC4	0.658	0.654	0.141	4.668
KSC5	0.627	0.572	0.204	3.067

Table 1 shows all the indicators studied variables declared invalid or it can be to measure each of the variables . It can be seen from the loading factor of all the indicators of greater than 0.5 . In addition , scores of t -statistics should also be greater than 1.96 . When two of these parameters have been met , it can dimpulkan that the indicators used are valid .

Discriminant Validity

The next evaluation is to see and compare between discriminant validity and the square root of average variance extracted (AVE) . Measurement model with a reflexive indicators assessed by cross loading measurements with the construct . Construct correlation value with each indicator (item measurement) must be greater than the size of the other constructs . From the test results showed that in this study , the value of AVE and Communality in each construct is more than 0.5 as shown in Table 2

Tabel 2
Discriminant Validity

Construct	*Average variance extracted (AVE)*
Green SCM	0.550
Environmental Observation	0.629
Competitive Advantage	0.703
Performance SCM	0.619

Testing Structural Model (Inner Model)

Testing the model is evaluated using the value of R2 and test siginifikansi through path coefficient values or t-values for each path. Path coefficient values indicate the level of significance in hypothesis testing. Structural model test results of this study are presented in Table 3 below:

Tabel 3
Inner Model

	original sample estimate	mean of subsamples	Standard deviation	T-Statistic
GSCM -> KK	0.243	0.257	0.143	1.701
KK -> KSCM	0.162	0.154	0.094	1.729
GSCM -> KSCM	0.589	0.624	0.097	6.072
PL -> KK	0.221	0.272	0.152	1.459

Hypothesis Testing unity conducted to prove the existence of significant influence of green SCM with a competitive advantage. Results of this study was supported by research

Rahmasari (2011) which concluded that Green supply chain management practices significantly influence the competitive advantage. Research Li, S., Ragu-Nathan, B., Ragu-Nathan, TS & Subba Rao, S. (2006) states that effective supply chain management has the potential to be a strategy to maintain competitive advantage and improve organizational performance because competition is currently in competition between supply chain management that are used by the company. And the results of this study, the use of Green supply chain management intensive, it can produce a good competitive edge and improve organizational performance.

Tests conducted two hpotesis to prove there is significant competitive advantage on the performance of the supply chain. This is supported by research Fitriansyah (2012) which states that competitive advantage has a direct positive influence and significant impact on the performance of the company. Therefore the Company a competitive advantage that increases will be able to improve the performance of supply chain as well.

Tests conducted three hpotesis to prove the existence of significant influence management practices environmentally friendly supply chain against supply chain performance. This is supported by the opinion Timisella.dkk (2014) which states that the company must do a collaboration with interest groups such as other supply chain actors that traders, suppliers and consumers, in accordance with the opinion of Bonifant et al. (1995) that collaboration in the supply chain helps management to identify and evaluate the differences of the options that may be intended to challenge certain environments, it is supported by Porter and van der Linde (1995) which states that the choice is often associated with improvements in performance such as productivity and quality.

The fourth hypothesis testing done to prove there is no influence of environmental observation with a competitive advantage. It does not support the idea of Jackson and Dutton (in Beal 2000, p.27) where opportunities and threats can arise from a variety of sources and to obtain information about some of the different sectors or sections that can provide relevant information in an effort to align competitive strategy companies with environmental conditions.
Further Jennings and Lumpkins (in Hagen and Amin, 1995, p.41) suggests that managers make observations on the environment and using the information obtained to gain competitive advantage. Therefore, by keeping the information between parts of the environment can make the company gain a competitive advantage or maintain its market position

Conclusion

The first hypothesis testing results support the hypothesis is that the practices of supply chain management has a significant influence on the achievement of competitive advantage organasisasi show. Results of this study support the prevailing theory and the results of previous studies that the implementation of the various practices of supply chain management and environmentally friendly green purchasing, green manufacturing, green distrubution and reserfe logistic affect the achievement of competitive advantage in durability against counterfeit products, customer loyalty, and quality and technological advances. Practices of supply chain management is also a proven effect in improving supply chain performance as indicated by the results of hypothesis 3 is supported in this study. While the second hypothesis stating the existence of a direct influence on the performance of the organization a competitive advantage is not supported. This can be explained related to the role of competitive advantage in the research supply chain management. In the development of research on supply chain management, has been recognized that the practice of supply chain management has a direct impact on the performance of the supply chain, but the study conducted by Li et al. 2006 provides empirical

evidence that the practices of supply chain management has no direct influence on the performance of the supply chain but is mediated by a competitive advantage in cost, quality, flexibility, and response capabilities.

SUGGESTION

The model proposed would provide benefits in accordance with the expectations of decision makers if well implemented and supported by the best business practices (best practices). As for suggestions for future research is to test the model design practices Green supply chain management that integrates all units of the company so that information can be accessed in real time.

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