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The Influence of Internal Drivers and Environmental Drivers towards Supply Chain Management (SCM) Strategy, SCM Practices, Responsiveness and Implication on the Operational Performance of Organic Fertilizer Manufacturers in East Java, Indonesia

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Abstract

The aim of this research is to formulate a theoretical model that explains causal links among supply chain drivers and operational performance by adding several SCM variables, namely strategy, practices and responsiveness into the links and empirically tests the model on organic fertilizer manufacturers in East Java, Indonesia. Provincial sample data that consist of 85 companies are analyzed using SEM by component-based approach, which is Generalized Structured Component Analysis (GSCA).

The result shows that internal drivers only have weak influence to the operational performance and environmental drivers do not influence it. Furthermore, SCM practice do not influence the operational performance. Nevertheless, the relationships between other variables hypothesized are found positively and significantly influence the operational performance. In order to compete in supply chain level, companies have to adopt the right SCM strategy and also build supply chain responsiveness. Both have important role as intervening variables to strengthen the weak or insignificant relationships. This research implication might limited for the types of industry in which the Government plays big role as one of the environmental drivers.

The organic fertilizer industry has to compete with chemical fertilizer products which have won the customer's loyalty; and therefore the organic fertilizer manufacturers have to change their SCM strategy to become more responsive to the customers' needs and requirements, also internally improving innovation aspect, particularly product innovation. The integration drivers are not directly related to performance, but rather have to be through SCM practices. Likewise, the SCM practices are not directly related to performance, but rather have to be through responsiveness. These research findings strengthen the strategic supply chain theory and the supply chain responsiveness theory.

Keywords: supply chain drivers, SCM strategy, SCM practices, responsiveness, operational performance, organic fertilizer manufacturers.

Introduction

Many researchers have found positive relationship between SCM and the improvement of organization's competitiveness and performance (Li et al., 2006). Moreover, SCM has been admitted as one of the key drivers for company's performance (Forker et al., 1997). Therefore, adoption and implementation of SCM have been widely admitted able to improve the performance of organization (Gimenez and Ventura, 2005).However, there are failures on supply chain management implementation, when companies involved could not achieve the integration level as expected (Fawcett and Bixby Cooper, 2001; Fawcett and Magnan, 2002). Various researches show that SCM implications to performance depend on various factors that are generally classified as demand uncertainty, supply uncertainty and technological uncertainty (Fynes et al., 2004; Liao and Tu, 2008). Therefore, it is important to develop responsiveness, which is the ability of supply chain to rapidly respond to market change and customers demand (Holweg, 2005).

Richey Jr. et al (2009) are one of few researchers who use 'SCM drivers' as one of the main variables. They divide SCM drivers into internal drivers and external drivers and suggest that the most important internal driver is the desire to improve the company performance by developing more effective and efficient commerce relationship. This is crucial because almost all managers realise the importance of supply chain integration, but only few companies adopt and disseminate a formal integration, and even fewer that map the supply chain in detail to determine their real suppliers and customers (Fawcett and Magnan, 2002). Environmental drivers consist of several elements. Firstly, the rapidly changed market demand requires company to integrate supply chain to become more responsive. The customers expect the product to be delivered faster and more reliable; therefore it needs better coordination within the company also with corresponding suppliers. Secondly, high intensity competition, where technology makes the spread of new ideas and practices become faster (Williams, 1994). Thirdly, the shift of power channel to downstream. Power is defined as the influence of one of the supply chain members to others, where at this point has shifted to downstream, which is the consumers.

This study attempts to expand Richey Jr., et al (2009) model by pulling the relationships among various SCM variables to generate a larger-scaled model. The model then empirically tested by taking samples from organic fertilizer manufacturers in East Java, Indonesia. The SCM model developed in this research is shown on Figure 1. The model shows causal links between internal drivers and environmental drivers to SCM strategy, from SCM strategy to SCM practices, and from SCM practices to responsiveness, before its final impact on the company's operational performance. The description of those causal links will be described more detail below. Based on literature review that has been done, the relationships between internal drivers, environmental drivers, SCM strategy, SCM practices, responsiveness and operational performance are presented on the following section, and hypotheses related with the variables used are developed.

Literature Review and Hypotheses

Internal Drivers and Environmental Drivers

SCM drivers are known as factors that initiate and encourage the changes on supply chain (Ayers, 2004), where generally can be distinguished as external drivers and internal drivers (Richey Jr., et al., 2009). For example, Handfield and Nichols (1999) describe three driver factors, which are: (1) Information revolution; (2) The increase of global competition level that creates customers' demands and demand-drived markets; and (3) The emergence of new types of inter-organisational relationships. This reflects the influence of external factors that drive the companies to integrate throughout the supply chain.

Ayers (2004) introduce six SCM drivers that influence and capable to drive changes in a supply chain, namely innovation, extended products, globalization, flexibility, process-centred management, and collaboration. The organization needs to identify SCM drivers as starting point to improve the supply chain performance. Each supply chain has different SCM drivers and hence it needs to be generated and used as reference in developing SCM practices.

The drivers behind cross-company collaboration are basically passion to gain more control and coordinate the whole supply process, and also exchange market integration and vertical as the way to manage the rundown of the process (Awad and Nassar, 2010). Some writers tend to emphasize on internal aspects, for example Ou et al (2010) who formulate several key drivers such as customer focus, management leadership, supply management, human resources management, data and quality report, and also process management. Others such as Mentzer et al. (2001) emphasize on "soft factors" such as understanding and trust or commitment as the integration drivers of supply and demand management. An issue that has to be put into account is the fact that high level of integration is not always profitable; and therefore the benefit and loss for the company need to be considered (McLaren et al., 2002). Langfield-Smith and Greenwood (1998) suggest several things that have to be considered due to its affect on the internal will and ability to accept changes from rivalry into more cooperative relationship with external parties, which are: (a) industrial and technological similarity among suppliers and company; (b) the employee's previous experience; (c) two way communication and information sharing (d) experimental learning.

Based on literature review above, integration drivers in this research is using Ayers (2004) suggestion after being distinguished into two groups of variable, namely internal drivers and environmental drivers. Internal drivers consist of innovation, extended products, flexibility, and process-centred management. The internal drivers' factors describe how far a company have the desire to improve (Richey Jr., et al. 2009) on internal performance and its implication toward supply chain performance.

These factors are hypothesised influencing the SCM strategy as well as operational performance. This leads into two hypotheses for internal drivers as follow:

H_1 = *Internal drivers positively and significantly influence the SCM strategy*

H_9 = *Internal drivers positively and significantly influence the operational performance*

Environmental drivers consist of partnership and the Government's role. Partnership or collaboration are related with the needs to eliminate organizational boundaries, also utilize intra-company and inter-company collaboration efforts to achieve joint outcome. The collaboration itself defined as a joint planning and execution of supply chain activities (Ayers, 2004: 292). Factors of competition pressure as well as encouragement from business partners become drivers for company to expand the activities crossing the organization's limits; or in other word, developing partnership. The need and urge to improve collaboration with the supply chain partners are environment drivers that encourage company to become more active in managing its supply chain.

The Government's role is an environmental driver that particularly adopt in this research to substitute the globalization factor mentioned by Ayers (2004) due to the important of government's role on the organic fertilizer industry as the object of this research. The Government of the Republic of Indonesia through the Ministry of Agriculture has launched "Go Organic 2025" vision as a reference for the future agricultural development. One of the programmes that have been developed is to increase the use of organic fertilizer among farmers, and also to convert the habit of using nitrogen fertilizer (urea) that tends cause soil damage. Hence, since 2009 several fertilizer state-owned companies were asked to develop partnership programmes with private sectors to develop organic fertilizer industry. The Government has also issued several supporting policies, such as organic fertilizer subsidy policy and set out organic fertilizer quality standard policy as requirement to get permit and brand registration.

Based on that consideration, the Government's role included in environmental driver which encourages the development of organic fertilizer supply chain. Within the supply chain exist raw material suppliers, suppliers, supporting materials and packaging suppliers, fuel suppliers (in this case, coal), organic fertilizer manufacturers, distribution channels, transportation services, also farmers as the end users of organic fertilizer.

These factors are hypothesised influencing the SCM strategy as well as operational performance. This leads into two hypotheses related with environmental drivers as follow:

H_2 = Environmental drivers positively and significantly influence the SCM strategy

H_{10} = Environmental drivers positively and significantly influence the operational performance

SCM Strategy

The SCM is used not only to explain the logistic activities and related planning and controlling material and information flows among supply chain partners, but also to describe strategic inter-organization issues (Harland et al., 1999). In general, the SCM strategy is distinguished into two types, namely: (1) lean, cost, efficiency-driven supply chain; and (2) agile, fast, service-driven supply chain. Both types are early response to dynamically competitive environment, so that companies need to use supply chain excellences as way to win the market competition.

Lean supply chain is the companies' first response when the market competition is getting tight, where their focus are on saving and eliminating waste in the supply chain, start from production until delivery (Womack et al., 1990; Womack and Jones, 1996). On the other hand, agile supply chain emphasizes more on flexibility and fast response to unpredictable changes, particularly market and customers demand changes (Christopher, 2000). Thereby, generally lean supply chain is advised for a relatively stable market and agile supply chain is advised for a dynamic and wide product differentiation market (Fisher, 1997; Lee, 2002; Vonderembse et al., 2006).

The SCM strategy concept in this research is following Vonderembse et al. (2006) suggestion which consists of three types of supply chain, namely: lean supply chain, agile supply chain, and hybrid supply chain. These three types are developed according to the differences of product character, which are standard, innovative, and hybrid. Standard products use the lean supply chain and innovative products use the agile supply chain, while hybrid type consist of complex products, has many components and involve numbers of companies within the supply chain. Therefore, it needs particular strategy named hybrid supply chains (HSC).

The first relationship to be explored in this research is between SCM strategy and SCM practices. Yet not many empiric research that study the relationship between SCM strategy and SCM practices, where few extant research show positive influence of SCM strategy towards SCM practices (Roh, 2009). Researchers tend to directly link the SCM strategy with performance (Green Jr., et al., 2008; Sun et al., 2009; Bolo, 2011) and even more researchers link SCM practices with performance (Kim, 2006; Li et al., 2006; Petrovic-Lazarevic et al., 2007); Thatte, 2007; Sun et al., 2009; Sambasivan and Jacob, 2008; Roh, 2009; Sukati et al., 2010; Lau et al., 2010; Miguel and Brito, 2011; Chong et al., 2011).

Moreover, the relationship between SCM strategy and responsiveness and between SCM strategy and operational performance also need to be explored. Therefore, hypotheses related with SCM strategy are as follow:

H_3 = SCM strategy positively and significantly influence the SCM practices

H_4 = SCM strategy positively and significantly influence responsiveness

H_5 **=** SCM strategy positively and significantly influence the operational performance

SCM Practices

SCM practices defined as a set of activities undertaken by an organization to promote effective management of its supply chain (Li et al., 2006). There are various particular activities done by companies whenever they adopt SCM. Li et al. (2005, 2006) suggest that SCM practice is a multi-dimension construction that involves two sides: the upstream and downstream of the supply chain.

There are many variations on developing this concept, where between one researcher and another presents widely different indicators (Koh et al., 2007). Suggestion used in this research is of Tan et al. (2002) who has identified 25 frequently mentioned factors in literature, and by factor analysis, has grouped them into six categories, namely supply chain integration, supply chain characteristic, information sharing, strategic location, customer relationship management and ability of just-in-time (JIT) response. This suggestion is chosen due its ability to provide wide scope of SCM practices.

Empirically, several research have found the relationship between SCM practices and responsiveness (Catalan and Kotzab, 2003; Thatte, 2007; Roh, 2009; Squire et al., 2009; Sukati et al., 2010) and many researcher link SCM practices with performance (sometimes replace it with competitive advantage) such as Kim (2006); Li et al. (2006); Petrovic-Lazarevic et al. (2007); Thatte (2007); Sun et al. (2009); Sambasivan and Jacob (2008); Roh (2009); Sukati et al. (2010); Lau et al. (2010), Miguel and Brito (2011), Chong et al. (2011).

Therefore, research hypotheses related with SCM practices are as follow:

H_6 **=** SCM practices that positively and significantly influence responsiveness

H_7 **=** SCM practices that positively and significantly influence the operational performance

Responsiveness

Responsiveness concept enters SCM literature based on the needs to respond the rapid environment change and 21st century competition. Responsiveness in the beginning was more related with company's internal process; that every company need to have the ability to response to the changes of customers' needs and demands, particularly in industries that are highly affected by customers' preference such as fashion, PC, electronics, construction and vehicle industries (Reichhart and Holweg, 2007: 1144). Responsiveness concept then developed not only on individual company level but also as supply chain responsiveness. A supply chain with high responsiveness level will be able to respond the demand and customers' preference change compared with unresponsive supply chain. In other word, supply chain responsiveness will, in return, influence performance (Thatte, 2007; Roh, 2009). Responsiveness in general defined as ability to react purposefully and within an appropriate time-scale to customer demand or changes in the marketplace, to bring about or maintain competitive advantage (Kritchanchai and MacCarthy, 1999). In supply chain context, responsiveness defined as the capability of promptness and the degree to which the supply chain can address changes in customer demand (Thatte, 2007: 32). Responsiveness concept used in this research using Thatte (2007: 35) suggestion, which distinguish the supply chain responsiveness into three sub-constructs, namely: operation system responsiveness, logistic process responsiveness and suppliers network responsiveness.

Several researchers have found the relationship between responsiveness and performance or with competitive advantage such as Thatte (2007); Roh (2009); and Sukati et. al (2010); therefore, the research hypothesis related with responsiveness is as follow:

H_8 **=** Responsiveness that positively and significantly influence the operational performance

Operational Performance

In this research, modifications have been done toward operational performance concept suggested by Richey et al. (2009) that consist of 10 indicators: ability to handle the unexpected issues, customers satisfaction, lead-time product innovation, supply cost reduction, market penetration, production cost, product quality, productivity level, customers needs responsiveness, and on time delivery.

These ten indicators are grouped into two parts, namely production performance and product satisfaction performance. **Production performance** is a short-term indicator to company's operational capability, which includes measurements such as lead-time product innovation, supply cost reduction or can be measured by level of inventory turnover, market penetration, production cost, and productivity level. These measures show the company's capability to win a market advantage by better and more efficient producing compared with the competitors. Meanwhile, **product satisfaction performance** related more with long-term measurement that reflects consumers/customers response to company's operational capability, with measurements such as: (1) Capability to address the unexpected issues; (2) Customers satisfaction; (3) Responsiveness to customer needs;

and (4) On time delivery. The whole product satisfaction measurements describe the capability of companies within the supply chain to deliver their product/service according to the customers' requirement.

Research Method

Measurement of variables

All variables in this research are measured by statement items using semantic-differential scale 1-7. Semantic-differential scale is one of the scales that commonly used in social science research, which is bipolar attribute (two polar) which identified as a scale, and then respondents are asked to state their position to things or can be called as semantic space towards individual, object or certain events on each attribute (item) provided (Osgood, 1952; Osgood & Suci, 1955).

There are 79 items in this research, which are internal drivers (10 items), environmental drivers (8 items), SCM strategy (16 items), SCM practices (22 items), responsiveness (14 items) and operational performance (9 items). The items used to measure six variables can be seen at Attachment 1.

First of all, the questionnaire developed as research instrument have been through the pre-test stage to guarantee its validity and reliability also to ensure the precision of wording, format and the question's order. The implementation of questionnaire pre-test is in DKI Jakarta Province by taking 20 samples of organic fertilizer manufacturers. Through several sentence exchange and refinement, valid and reliable questions in research instrument are resulted for the research ($p < 0.050$; Cronbach's Alpha > 0.70).

Sample and Data Collection

Questionnaire is distributed to organic fertilizer manufacturers in several districts in East Java Province. The minimum sample number is determined based on Slovin formulation with $\alpha = 5\%$. The sample frame shows that there are 105 organic fertilizer manufacturers that have license and also registered in East Java, hence by using the formulation, it can be obtained minimum sample number is 84. Sampling is done by simple random sampling technique based on the sample frame. The questionnaire distribution is done by visiting each manufacturer, based on address list taken from Center for Plant Variety Protection and Agriculture Permit, Ministry of Agriculture, in Jakarta, assisted by several officers from PT Petro Kimia, Gresik, as state-owned company advisor for East Java region and local agricultural service. This is to ensure that the questionnaire is filled correctly by the representative. Comprehension regarding supply chain assumed to be hold by business owner or production senior manager; therefore the questionnaire must be filled by them. Moreover, by visiting one company to another, there is chance to conduct deeper interview and observation of production process in each companies. After about one month distributing the questionnaire, between May to June 2013, 85 complete and correct questionnaires were obtained and hence minimum sample is fulfilled.

Analysis and Findings

Organic fertilizer manufacturers' Profile

According to the Centre for Plant Variety Protection and Agricultural Permits, Ministry of Agriculture, in 2012 there are 664 organic and bio fertilizer companies and 427 companies already have official brand/trademark. East Java Province holds the second place after DKI Jakarta with 105 organic fertilizer manufacturers.

This research is conducted in East Java area by taking 85 companies as samples. From the company profile information, the production figure in 2012 was relatively high, 444,856 ton with production average in each company is 5,233.71 ton and the lowest production level is 800 ton/year. On the other hand, the highest production level is 25,000 ton/year. This figure is achieved by using machine with total capacity 3,241 ton/day, where the lowest capacity machine is 8 ton/day and the biggest is 90 ton/day. Hence, it can be seen that organic fertilizer manufacturers in East Java have not reach its maximum effective capacity by only using 42.35 per cent from total machine capacity if fully used 365 day/year.

The majority of organic fertilizer producers in East Java use three main raw materials namely: (1) chicken manure, (2) cow manure, and (3) '*blothong*' (residual or waste from sugarcane mills in several districts in East Java). These raw materials obtained from traditional supplier network, who act as raw material collector in a region. The raw material order is based on machine capacity and space available in the warehouse where producers store their raw material supply. From all the organic fertilizer manufacturers observed, 67 companies (78.8%) produce granule organic fertilizer, 5 companies (5.9%) produce liquid organic fertilizer, and 13 companies (15.3%), produce both.

As manufacturing company in a newly developed industry under the patron of the Government, the main focus of organic fertilizer manufacturers is the product quality. The quality standards that must be achieved in organic fertilizer production as required by the Government oblige the company to maintain their product quality based on the diversity of raw materials available locally. Therefore, the companies need to have their own laboratory or using the third party to test the raw material samples and final products which will be marketed. Several companies develop small laboratory near the factory to test moisture and C-organic contain in the raw materials sent by suppliers.

The organic fertilizer manufacturers profile described above shows that organic fertilizer has been developed as manufacturing product in which has their own supply chain like the other manufacturing companies in general. Below is the research result that describes the SCM implementation in organic fertilizer manufacturers observed.

Inferential Statistics Analysis

Data obtained from 85 questionnaires were analysed using SEM method, which is by Generalized Structured Component Analysis (GSCA) approach developed by Hwang and Takane (2004). GSCA is SEM component-based that have criteria global least square optimization, where can consistently minimize sum squares residual to get an estimation of parameter model. GSCA equipped with overall goodness-of fit measurement model. GSCA is a strong analysis method, due to not base on too many assumptions. In GSCA, variable does not have to normally distributed; can be multivariate (indicator with category, ordinal, interval and ratio scale can be used for the same model) and the number of data do not have to be large (recommended 30 to 100 cases minimum). Analysis result by GSCA on-line software explained as follow:

Validity and Reliability of Research Construct

Based on the result of parameter measurement on model measurement on Table 1 below, it can be seen that all latent variable indicator giving good convergent validity value (from loading estimation value) which is above 0.645 and statistically significant. Similar with Average Variance Explained (AVE) value, which is above 0.501, shows that more than 50% of the average of indicator variance could be explained by its latent variable.

The AVE latent variable square root figure that higher from the correlation between one latent variable with another means that the latent variable is valid and can be included in the model. Moreover, it can also use the provision that AVE value higher than 0.5 is considered valid (Chin, 1998). As shown on Table 1, the lowest AVE value is 0.501 and hence the model has good discriminant validity. The reliability value can be seen from Alpha value higher than 0.600. Thus, all indicator variables are is valid measurement and reliable for all its latent variable.

The Result of the *Structural Equation Modelling*

Fitness Test of the Model

In GSCA, the fitness test of the model structurally measured by using FIT and AFIT that equivalent with R-square total on path analysis or on PLS. FIT value shows total variance from all variable that can be explained by structural model. The FIT value ranges from zero to one. The higher the FIT value (closer to one), the higher the total variance can be explained by the model. AFIT value equivalent with R-square adjusted on regression analysis and it can be used for model comparison. If AFIT value in one model is higher than others, it shows that the model is the best to use. On Table 2, it can be seen that FIT and AFIT value are 0.578 and 0.566 respectively. This shows that the model could explain about 57.8% variance of the data.

Overall fit test is measured by involving integrated structural model and measurement model. The test is done by observing the GFI and SRMR value. GFI value higher than 0.900 and SRMR value smaller than 0.080 shows that the model used is good fit, whereas if it near to that value, it is said to be marginal fit. Table 2 shows that GFI value obtained is 0.981 and SRMR value 0.178. GFI value higher than 0.900 shows that the model used is good fit, whilst SRMR value close to 0.080 shows that the model used is marginal fit.

Hypotheses Testing

The result of hypotheses testing can be seen on Table 3. Seven hypotheses are gaining support by standardized estimate and t-value that fulfil the criteria. At 0.05 level, the influence of internal drivers toward SCM strategy (H_1) is significant with estimate value 0.547 and t-value 5.81, the influence of environmental drivers toward SCM strategy (H_2) is significant with estimate value 0.272 and t value 2.39, the influence of SCM strategy toward SCM practices (H_3) is significant with estimate 0.541 and t value 4.95, the influence of SCM strategy toward responsiveness (H_4) is significant with estimate 0.340 and t value 2.69, and the influence of SCM strategy toward performance (H_5) is significant with estimate 0.391 and t value 3.78 and the influence of SCM practices toward responsiveness (H_6) is significant with estimate 0.502 and t value 4.35. Nevertheless, relationship between SCM practices and operational performance (H_7) is insignificant with estimate 0.063 and t value 0.61. Furthermore, the influence of responsiveness toward operational performance (H_8) is significant with estimate 0.344 and t value 3.77, whereas the influence of internal driver toward operational performance (H_9) is insignificant at 0.05 level but significant at 0.1 level with estimate 0.166 and t value 1.59. Lastly, the influence of environmental drivers toward operational performance (H_{10}) is insignificant with estimate 0.022 and t value 0.28.

The result of the hypotheses tests are shown as structural model on Figure 2. The model shows two insignificant paths, which are between environmental drivers and operational performance also between SCM practices and operational performance.

Discussion and Implications

The relationship test among variables by using inferential statistics analysis has resulted in hypothesis test authentication as shown on Table 5 and final path diagram as shown on Figure 3. The comparison with the previous research findings explains that structural model obtained in this research is equivalent and strengthen the previous research except for:

(1) Does not support previous research findings regarding (direct) influence between Environmental Drivers and Operational Performance, also (direct) influence between SCM Practices and Operational Performance.

(2) Have found two new paths, which are Internal Drivers toward SCM Strategy and Environment Drivers toward SCM Strategy.

The diagram generally emphasize on two important variables, which are SCM Strategy (Y_1) and Responsiveness (Y_3). The important role of SCM Strategy variable is as intervening variable that strengthen the influence of Internal Drivers (X_1) and Environmental Drivers (X_2) toward Operational Performance (Y_4). In addition, Responsiveness have important role in strengthening the influence of SCM Practices (Y_3) towards Operational Performance (Y_4).

The importance of two variables in structural model that empirically found in this research shows that SCM strategy and responsiveness are main requirements for the success of a supply chain to achieve better performance. This model explains that if SCM strategy score and/or responsiveness are not being increased or still low, then it will be difficult for the company to obtain maximum result from internal drivers, environmental drivers, and SCM practices developed from a supply chain. Furthermore, there are several additional notes regarding structural model from the research result as follow:

The relationship between Internal Drivers and Operational Performance: there is weak significant influence (0.166) between internal drivers and operational performance; unlike the empiric findings of Richey Jr. et al. (2009) that claim there are significant positive relationships between SCM drivers and company performance. However, if it is observed from the indirect influence, the influence of internal drivers become significant if they pass the SCM strategy variables ($X_1 \rightarrow Y_1 \rightarrow Y_4$); where coefficient of influence (indirect) increase to 0.214. These finding supports the strategic supply chain theory, that supply chain management is not only the matter of securing the raw material supply issue, but also strategically manage by using the SCM strategy. This complies with the path found in this research that internal drivers' variables only have weak significant influence to the operational performance; and therefore needs to be strengthened by SCM strategy variables. This is a new finding that never occurs on previous research.

The relationship between Environmental Drivers and Operational Performance: The result of this study shows that there is no significant influence between environmental drivers and operational performance and hence does not support the finding of Richey Jr. et al. (2009) which claim there is significant positive relationship between SCM drivers and company performance. This significant influence found through indirect relationship in which by SCM strategy variables which have coefficient of indirect influence 1.06. This finding also strengthens the strategic supply chain theory, where SCM strategy is instrumental to develop company performance in the supply chain. This is a new finding that never occurs in previous research.

The Relationship between SCM Practices and Operational Performance: The result of this research suggest that there is no significant influence between SCM practices and operational performance, hence this finding is different with many previous findings which found direct influence between SCM Practices and performance (Kim, 2006; Li *et al.*, 2006; Petrovic-Lazarevic *et al.*, 2007; Thatte, 2007; Sun *et al.*, 2009, Sambasivan and Jacob, 2008; Roh, 2009; Sukati *et al.*, 2010; Lau *et al.*, 2010, Miguel and Brito, 2011; Chong et al., 2011). Nevertheless, it can be explained that it means that adoption and implementation of SCM are not a guarantee of the increasement of company's competitiveness and performance. This finding complies with the facts that there are failures in implementing supply chain management, where the companies involved could not achieve the integration level as desired (Fawcett and Bixby Cooper, 2001; Fawcett and Magnan, 2002). That the SCM practices significantly influence the operational performance only by responsiveness is a new finding that shows that responsiveness is an important factor that has to be considered in supply chain management. This complies with Fynes et al. (2004) and Liao and Tu, 2008 suggestion that SCM implication toward performance depends on various wide factor that generally grouped as: demand uncertainty, supply uncertainty and technology uncertainty and hence it needs supply chain responsiveness to fastly respond market change and customers demand (Holweg, 2005).

Conclusion

The influence of internal drivers and environmental drivers toward SCM strategy have been empirically test in this research, and it is theoretically support the theory of strategy development based on internal influence and external environment (Robbins, 1990; Hatch, 1997). Moreover, this finding improves the previous model developed by Richey Jr. et al. (2009) which directly relates the SCM drivers and operational performance. Furthermore, indirect influence of internal drivers and environmental drivers toward performance by using the SCM strategy theoretically support the strategic supply chain theory that supply chain management is not only the matter of securing the raw material supply issue (Harland et al., 1999; Lummus and Vokurka, 1999; Quayle, 2003; Kim, 2006; Mentzer et al., 2001; Miguel and Brito, 2011). The change of traditional logistic paradigm into SCM started from the view that supply chain activities is actually more than just company's external logistics (Lambert, 2004; Lambert et al., 1998) and hence it is understandable that internal drivers only have weak significant influence toward operational performance and environmental drivers do not have significant influence toward operational performance unless if it uses SCM strategy variable.

This study empirically support the theory of supply chain responsiveness (Holweg, 2005) by suggesting the indirect influence of SCM practices towards operational performance through responsiveness. This finding shows the importance of responsiveness, in line with Anderson and Lee (1999) suggestion that collaboration and ability to responsively operate are success components of supply chain strategy that give added value for companies. Fawcett (1992) also suggests that logistic process responsiveness is an important component for the success of SCM strategy. In addition, this supports Fynes et al. (2004) and Liao and Tu (2008) opinion that SCM implication toward performance is indirect and support Fawcett and Bixby Cooper, (2001) and Fawcett and Magnan (2002) argumentation regarding the adoption and SCM implementation failures. Without developing responsiveness in a supply chain, it is more likely that SCM implementation through suggested practices will only have slight opportunity to achieve success, particularly when facing high customers demand and also demand, supply and technology uncertainty (Holweg, 2005).

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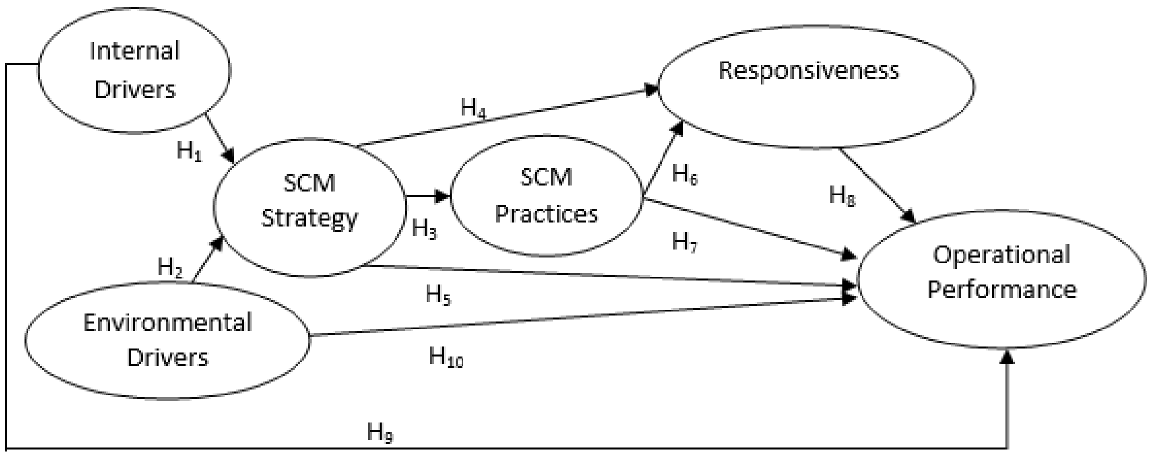
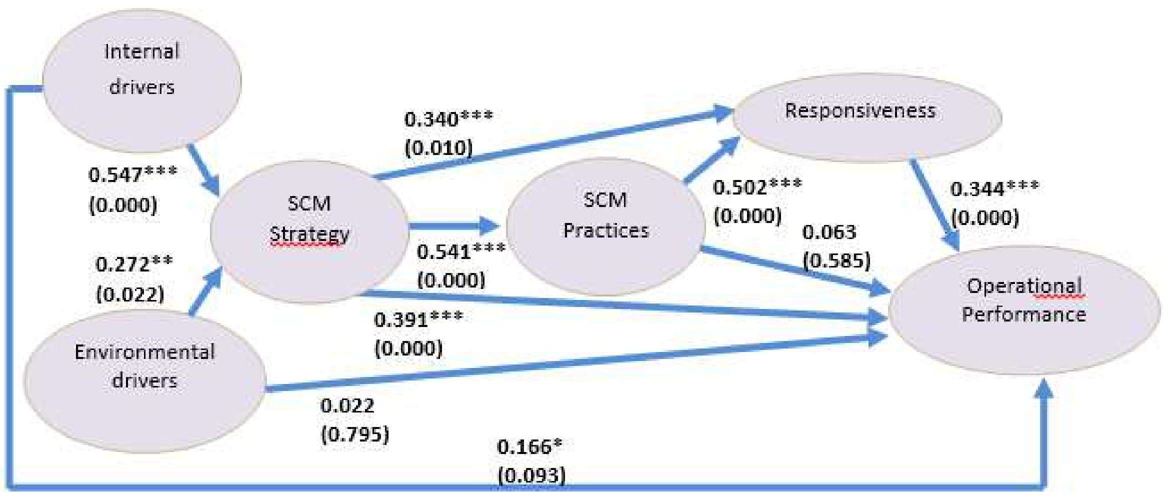
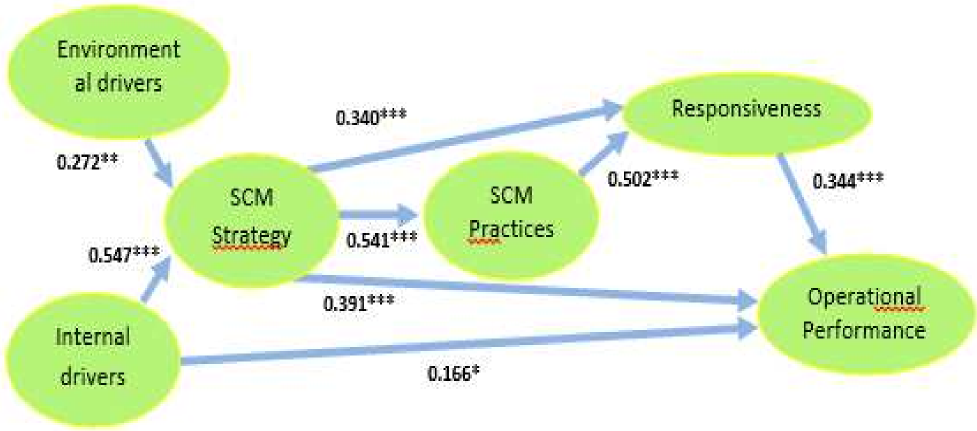


Figure 1. Proposed Model



*** = significant at 1% level , ** = significant at 5% level, * = significant at 10% level

Figure 2. Resulting Path Model



*** = significant at 1% level , ** = significant at 5% level, * = significant at 10% level

Figure 3. Final Path Model

Tabel 1 Organic Fertilizer Company Profile

	Total	Mean	Minimum Score	Maximum Score	Std. Deviation
Production year 2012 (ton)	444,865	5233.71	800	25,000	3,425.690
Machine Capacity (ton/day)	3, 241	38.13	8	90	20.050
Number of Worker (people)	4,624	54.40	9	153	26.056
- Permanent Worker	984	11.58	3	35	6.982
- Contractual Worker	3,640	42.82	6	120	22.747

Tabel 2. Estimate Value of Measurement Model

Variabel	**Loading**	**Weight**	**SMC**	**Mean**
1	*2*	*3*	*4*	*5*
Internal drivers	*AVE = 0.501*		*Alpha = 0.645*	**4.98**
$X_{1.1}$	0.858	0.443	0.736	4.64
$X_{1.2}$	0.653	0.324	0.426	4.80
$X_{1.3}$	0.649	0.317	0.422	4.01
$X_{1.4}$	0.648	0.312	0.420	5.98
Environ. drivers	*AVE = 0.829*		*Alpha = 0.779*	**4.93**
$X_{2.1}$	0.905	0.534	0.820	5.21
$X_{2.2}$	0.916	0.564	0.838	4.64
SCM strategy	*AVE = 0.658*		*Alpha = 0.742*	**5.13**
$Y_{1.1}$	0.882	0.510	0.780	5.43
$Y_{1.2}$	0.879	0.432	0.772	5.32
$Y_{1.3}$	0.651	0.262	0.422	4.64
SCM Practices	*AVE = 0.673*		*Alpha = 0.900*	**5.27**
$Y_{2.1}$	0.838	0.175	0.700	5.36
$Y_{2.2}$	0.847	0.166	0.712	5.28
$Y_{2.3}$	0.854	0.243	0.732	5.27
$Y_{2.4}$	0.830	0.208	0.687	5.00
$Y_{2.5}$	0.751	0.245	0.568	5.74
$Y_{2.6}$	0.798	0.186	0.637	4.99
Responsiveness	*AVE = 0.00*		*Alpha = 0.749*	**5.28**
$Y_{3.1}$	0	0.522	0	5.54
$Y_{3.2}$	0	0.472	0	5.39
$Y_{3.3}$	0	0.130	0	4.90
Op. Performance	*AVE = 0.755*		*Alpha =0.681*	**5.31**
$Y_{4.1}$	0.913	0.665	0.834	5.40
$Y_{4.2}$	0.823	0.477	0.677	5.00

* Significant at 0.05 level

Tabel 3. Criteria of Model Fitness

Model Fit	
FIT	0.578
AFIT	0.566
GFI	0.981
SMSR	0.178

Table 5. Hypotheses Tests Result

Hypothesis	**Path Coefficients**				**Interpretation**
		Estimate	**CR**	**P-value**	
H_1	**X1->Y1**	0.547	5.81	0.000	supported
H_2	**X1->Y4**	0.272	2.39	0.022	supported
H_3	**X2->Y1**	0.541	4.95	0.000	supported
H_4	**X2->Y4**	0.340	2.69	0.010	supported
H_5	**Y1->Y2**	0.391	3.78	0.000	supported
H_6	**Y1->Y3**	0.502	4.35	0.000	supported
H_7	**Y1->Y4**	0.063	0.61	0.585	not supported
H_8	**Y2->Y3**	0.344	3.77	0.000	supported
H_9	**Y2->Y4**	0.166	1.59	0.093	not supported
H_{10}	**Y3->Y4**	0.022	0.28	0.795	not supported