

*Full Length Research Paper*

# **A partial least squares model for SCM strategy, willingness for external collaboration, competitive performance and relative performance: Effects of marketing and logistics performance in the palm oil industry**

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**This research investigation is concerned with whether in the palm oil business, marketing performance and logistics performance influence supply chain management (SCM) strategy, external collaboration willingness, competitive performance and relative performance. The analysis proceeds by means of the structural equation model (SEM) so as to determine causal relationships in regard to the factors just mentioned. Data were collected from palm oil establishments in the southern part of Thailand. Findings indicate that marketing performance and logistics performance are necessary for an organization to exhibit good SCM strategy, external collaboration willingness, relative performance and competitive performance in the palm oil business. It was also found that marketing performance exerted a high level of influence on these four factors while logistics performance influence only on SCM strategy and willingness for external collaboration.**

**Key words:** PLS, logistics performance, palm oil.

## **INTRODUCTION**

The roles of logistics performance and marketing performance greatly affect business organizations in both the service sector and the industry sector as a consequence of rapid expansion and growth in business. Inasmuch as this state of affairs leads to a high degree of competition, organizations accordingly attempt to find ways to manage their organizations in a fashion that would give them greater competitive edge in the face of competition with competitors.

Logistics plays an important role in fostering more efficient management systems. Efficiency in management that creates advantages in confronting competitors, allows for reductions in costs, and promotes high levels of responsiveness to the needs of customers (Green, Whitten and Inman, 2008). Also, it is important for the products or services of organizations to differ from those of competitors. Consequently, organizational success is rooted in an array of factors, including the use of SCM strategy and willingness to engage in external collaboration on the part

of management for the sake of success as indicated by greater firm performance (Cao, Zhang, Vonderembse and Ragu-Nathan, 2006).

In this study, therefore, the researchers are concerned to investigate, for palm oil industry in southern Thailand, whether marketing performance and logistics performance influence SCM strategy, external collaboration willingness, competitive performance, and relative performance.

## **THEORETICAL FOUNDATION**

This research is based on 3 different theories: Resource Based View of the Firm-RBV (Barney, 1991), Resource Advantage Theory (Hunt, 1997), and Network Theory (Shaw, 1993). Barney predicated that any firms having valuable, rare, inimitable and non-substitutable resources and capabilities would experience competitive advantage

status among their competitors, which leads to better performance. On RBV, the resources could be asset, finance, and human resource which are considered tangible and whereas the human capital, knowledge, know-how, reputation and technology, intangible. Capabilities are dynamic routine that the organizations acquired from being continuously improved through management effectiveness practices. Resources and capabilities are heterogeneous across the firms and can be categorized as internal SWOT which affects competitive advantage and performance of the firm (Porter, 1985). Hunt (1997) pointed out that resources might be compared among competitors within the same market segment. Financial performance would then be fulfilled if firm has resources advantage in that segment as stated in his Resource Advantage Theory (RAT). However, there are a limited number of firms which have all resources and capabilities of their own, so most firms have to collaborate in term of network connection with those who have the resources and capabilities as stated in Network Theory, or NT (Shaw, 1993). From this combination perspective, the marketing performance and logistics performance or the delivery and store of product, will be mediators of resources and other firm performance specifically financial performance (Hunt, 1997). In view of this, the competitive advantage or disadvantage of the firms resulted from the RBV, RAT and NT as mentioned would drive and connect different firm performance, SCM strategy and collaboration willingness, which are to be investigated in this study.

### **Marketing performance**

Marketing performance means the performance of the firm in retaining market and clients while introduce its business to new customers. The performance can be viewed in more markets, more market shares, more sales and more customers. So, in order to measure commercial success, an organization must examine the question from a long-term perspective in order to obtain satisfactory results. In this connection, an organization should look at those three aspects: increases in market share, increases in sales volume, and increases in trade (Tracy, Lim and Vonderembse, 2005). In general, successful organizations must consider these aspects for at least three years in order to obtain accurate results (Heskett et al., 1994; Gimenez and Ventura, 2005). These results can be factored into a SCM strategy exhibiting collaboration willingness, as well evincing concern for competitive performance and relative performance.

In addition, the marketing performance of an organization can be measured by how effectively it competes. There are three indicators for successful organizations in this connection: (1) growth in sales; (2) increased market share; and (3) growth in assets (Lekmat and Sevarajah, 2008). These indicators provide an overall picture of an organization's ability to compete. In measuring these

indicators, organizations must take into account over the last three years (Wallenburg and Weber, 2005). In measuring success, the organization must set goals on the basis of the past three years of work and also make forecasts for at least the next three years in order to successfully fulfill plans.

### **Logistics performance**

Logistics performance means the performance of management, transportation and warehousing of products or materials. In an overall picture, logistics performance is characterized in terms of product delivery and timely responsiveness to customers. The goal is for customers to receive deliveries quickly and dependably, as well as having delivery services that are flexible and completely fill all orders (Tracey, 1998; Tracy et al., 2005; Green et al., 2008). All of these factors are determinative in organizations striving to develop an appropriate SCM strategy and willingness for collaboration, or otherwise performance will be stultified. In addition, these factors are determining factors of competitive performance and relative performance in efforts to bring about high levels of organizational achievement (Kim, 2004; Gimenez and Ventura, 2005).

### **SCM Strategy**

SCM strategy means the strategies used to successfully link stakeholders in the chain from upstream through downstream. It is the building of close relationships between buyers and sellers is conducive to enhancing trade success in respect to all links in the supply chain. Effective relationships commence with mutual trust on the part of suppliers, thereby normally ushering in mutual trade benefits (Chen, Paulraj and Lado, 2004). Organizing activities for members of the same supply chain and building close relationships with constantly expanding radii will at the same time foster an efflorescence of trade eventually extending far beyond the original chain of buyers and sellers. Attention must be closely paid to maintaining close relationships with all parties concerned for the sake of forging continuous trade over the long haul (Green et al., 2008). Unfortunately, there is a tendency to forget suppliers of raw materials in view of the tacit belief that customers alone should be the focus of attention. In this case, organizations are hampered by virtue of not being able to benefit from mutual accommodation of the needs of both organizations and suppliers. Paying heed to suppliers will also be beneficial in the sense that organizations can better select major suppliers in view of the knowledge they have gained of this aspect of the supply chain.

Furthermore, long-term relationships lead to mutual planning and product improvement, as well as to mutual planning, all of which lead to cost reductions. Moreover,

when organizations pay close heed to suppliers, they are able to rank them appropriately (Giunipero et al., 2006; Paulraj and Chen, 2007).

In addition, it is necessary to construct effective communication networks which provide customers with information so that they can obtain an overall picture of an organization and can judge its trade potential. This strategy encourages continuous and widening trade beyond the immediate group of sellers and customers. Also, such a strategy facilitates the solving of problems and the development of new products. Furthermore, it encourages the development of higher quality products. Finally, this kind of strategy can continuously lead to cost reductions, production time reduction and product improvement. In fine, all of these outcomes are engendered by improved marketing and logistics performance (Paulraj and Chen, 2007).

### **External collaboration willingness**

External collaboration willingness means an intention to make a strong collaboration with clients and suppliers. Good logistics performance is constitutive of good trade relations and concomitantly leads to an enhancement of an organization's competitive edge. Successful businesses must firstly pay attention to good organizational performance. Good performance results from external collaboration while conducting trade together with an attendant commitment to success in operose endeavors (Quinn, 1998; Handfield and Nichols, 1999; Gimenez and Ventura, 2005). Using different methods with constant application, organizations must solve problems arising from work operations and display determination in solving these problems, especially insofar as they directly impinge upon organizational performance.

However, to be effective, organizational collaboration must fall under the rubric of "good collaboration." In this connection, the following requirements must be taken into consideration: (1) collaboration in creating ad hoc work committees; (2) improvements in communication; and (3) knowledge sharing at work leading to obviously mutual benefits (Handfield and Nichols, 1999).

In addition, good marketing performance will facilitate external collaboration between organizations in the same supply chain. Findings indicate that information sharing is very important. All intercalated organizations must collaborate in information sharing and must lend support to one another in exchanging information by means of information technology, thereby ensuring efficiency with which information is sent. Furthermore, systems must be continuously improved to the end of making systems more economical (Chae, Yen and Sheu, 2005). Effective external collaboration coupled with a determination to succeed will bring about improvements in intra-organizational collaboration while leading to reductions in costs and greater responsiveness to customers. Thus,

all of this can be brought about by the construction of networks allowing for collaborative extra-organizational work. It is noteworthy that enhanced collaboration leads to technological exchanges and exchanges of information (Rawwas et al., 2008). Finally, benefits accruing from such improved collaborations are shared by all organizations working together and left a large effect to competitive performance and organization operation performance (Fawcett, Osterhaus, Magnan, Brau and McCarter, 2007). Chien and Shih (2007) found that collaboration of people/organization in supply chain from upstream through downstream contributed desirable effect in both logistics performance and marketing performance.

### **Competitive performance**

Competitive performance is a competency of the firms to go in advance of their competitors specifically in sales, market share, return on sale (ROS) and return on capital employed (ROCE). Successful organizations must exhibit good logistics performance showing responsiveness in the shortest feasible time period at the lowest possible cost (Sheridan, 1993; Moskal, 1995). In supply chain management, speedy responsiveness is very important. It is necessary to have capacity to work with dispatch, especially in the production process. The production process must be flexible, starting with considering raw material conditions and seasonal availability. It is also necessary to be able to accommodate customers and to be adaptable in respect to customer needs and raw material conditions. Production requirements must be geared towards fulfilling the incessantly changing needs of customers (Willis, 1998, Moskal, 1995). Having capacities such as these will enable an organization to be efficient in the face of competition.

Complete advantage in industry is dependent upon being able to respond with alacrity to changes in customer needs. In general, attention must be paid to the need for great flexibility and adaptability in response to changing conditions. If one expedites operose activities, then necessary steps in work execution are correspondingly reduced, thereby ushering in greater intra-organizational efficiency and effectiveness. But these improvements are simultaneously functions of adherence to both intra- and extra-organizational collaboration, exchanges of information within the supply chain, using effective technology, and fostering the speedy execution of work tasks within the organization (Sheridan, 1993; Swafford, Ghosh and Murthy, 2006).

### **Relative performance**

Relative performance is performance of the firms from responding possible requirements of customers. In order to improve performance, an organization must direct

attentions towards being responsive to the needs of customers (Gimenez and Ventura, 2005). It is of paramount importance that organizations delivery products to customers in the time period and specific date specified in advance. In addition, the quantity of products delivered to customers must be correct. The organization must be able to respond to the normal needs of all customers, as well as to the special needs of some customers. In some organizations, ability to present new products to customers should also be considered. Attention must be paid to customers regarding delivery even if required delivery time has to take into account seasonal availability. Jeffer, Muhanna and Nault (2008) found that better information technology implementation and communication together with good business practice would affect relative performance and transfer better effect to firm performance.

**METHODOLOGY**

A set of 5 values Likert type questionnaires was used as a tool to collect data in this survey research investigation. Copies were sent to general managers or those knowledge-able about the palm oil industry in 104 randomly selected companies out of 120 companies in the southern part of Thailand. As adapted from Green et al. (2008), questionnaires pertained to SCM strategy, marketing performance, and logistics performance. A questionnaire pertaining to internal collaboration willingness and relative performance was adapted from Gimenez and Ventura (2005). Questionnaire concerning competitive performance was adapted from Fawcett et al. (2005). Data were analyzed using the structural equation model to analyze model causality by an application of the PLS-Graph 3.0 software (Chin, 2001).

The PLS path model consisted of a set of structural equation, which linked latent variables as

$$\eta = B\eta + \Gamma\xi + \zeta$$

where  $\eta$  is the endogenous variable and  $\xi$  is the exogenous variable.  $\zeta$  is the error term.

Our structural model consisted of four equations as follows:

- SCM Strategy = f (Marketing Performance, Logistics Performance) + $\epsilon$
- External Collaboration Willingness = f (Marketing Performance, Logistics Performance) + $\epsilon$
- Competitive Performance = f (Marketing Performance, Logistics Performance) + $\epsilon$
- Relative Performance = f (Marketing Performance, Logistics Performance) + $\epsilon$

The measurement model in each block is as follows:

$X = \Lambda_x\xi + \delta_x$  with  $E(X|\xi) = \Lambda_x\xi$ , which is the measurement equation for the exogenous variable with X being an indicator of  $\xi$  and  $\Lambda_x$  is a loading vector indicating the influence of the latent variable  $\xi$  on the indicator X and  $Y = \Lambda_y\eta + \epsilon_y$  with  $E(Y|\eta) = \Lambda_y\eta$ , which is the measurement equation for the endogenous variable with Y being an indicator of  $\eta$  and with  $\Lambda_y$  being the loading vector indicating the influence of the latent variable  $\eta$  on the indicator Y Since the model's structure contains abstract variables, it is necessary to measure how well latent variables could reflect their role on indicators. The model quality was analyzed through:

Global model performance was analyzed using  $R^2$ , the significance of path coefficient, composite reliability (CR), average variance extracted (AVE), and goodness of fit (GoF). The investigation the significance of the path used bootstrap resampling or jackknife resampling because PLS did not need normality assumption since it employed OLS methodology partially in each block, hence named PLS. CR,  $R^2$ , Redundancy and GoF could be measured as follows:

$$CR = \frac{(\sum \lambda_{ij})^2}{(\sum \lambda_{ij})^2 + (\sum (1 - \lambda_{ij}))^2} \geq 0.60$$

$$AVE_i = \frac{1}{m_i} \sum_j loading_{ij}^2 \geq 0.50$$

$$Redundancy_j = R_j^2 * Communality_j$$

Redundancy<sub>j</sub> stands for average redundancy of the j th block indicate how well constructs in the path directed to construct j th forecast validity of indicators of that block. Communality<sub>j</sub> stands for average communality of j th block indicate how well the construct which is abstract in nature can reflect inherit nature to its indicators.

$$GoF = \sqrt{commun * R^2}$$

where  $\overline{R^2} = \frac{1}{J} \sum_j R^2(\hat{\xi}_j, \hat{\xi}_q(\xi_q \rightarrow \xi_j))$ , the higher GoF is the more

preferable. GoF, abbreviate from Goodness of Fit, uses to show overall prediction performance, like redundancy, of the whole model.

The measurement of the quality of scale used the threshold of loading  $\geq 0.707$  to measure convergent validity. The criteria  $\sqrt{AVE_i} \geq r_{ij}$ , the correlation between i th column construct and other constructs, was used to measure convergent validity.

**RESULTS**

The study was conducted by using the structural equation model (SEM) to find causal relationships through an application of PLS-Graph 3.0 (Chin, 2001), which allowed the investigation of the research model as shown in Figure 1. Number adjacent to arrows are path coefficients that show the degree of influence antecedent left to endogenous variable that follow and number under endogenous variables are  $R^2$  which were used to indicate proportion of explanation the antecedents of specific path can make on variation of dependent variable as shown in Figure 1.

Figure 1, Tables 1 and 2 displayed the statistically significant path results obtained through applying the method of bootstrap resampling. It was found that all paths exhibited statistical significance except H<sub>7</sub>: Logistics Performance contributes positive effect on Competitive Performance and H<sub>8</sub>: Logistics Performance contributes positive effect on Relative Performance. It was also found that Marketing Performance influenced four factors, viz., SCM Strategy; External Collaboration Willingness;

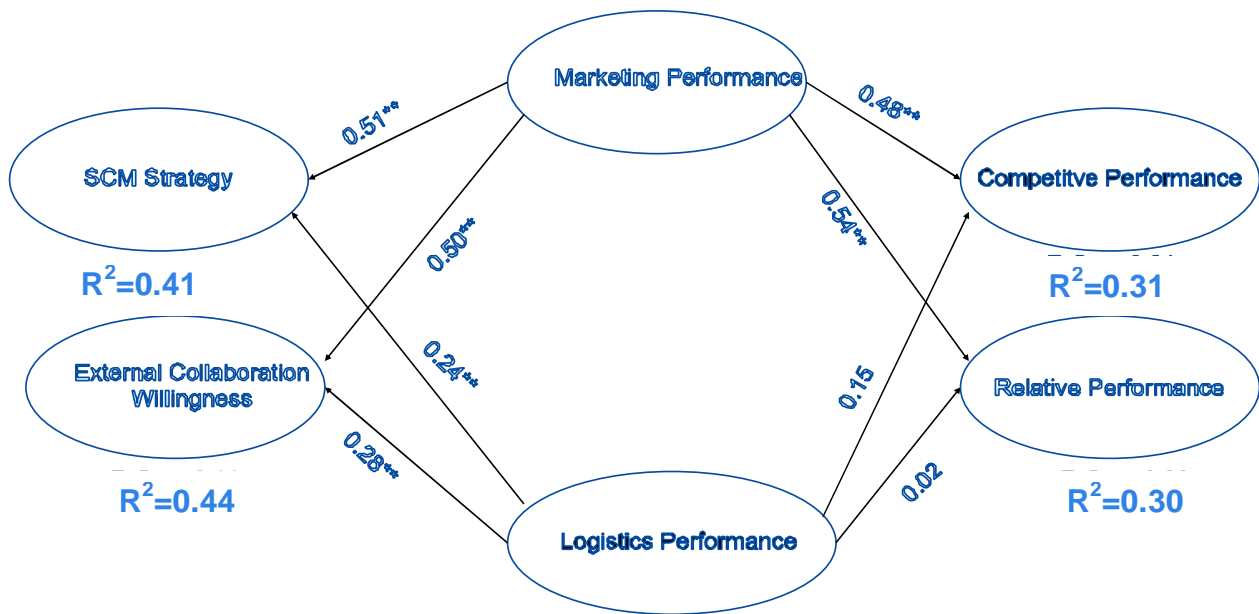


Figure 1. Final PLS Path Model.

Table 1. Effects of antecedents on dependent variables.

Dependent variable	R <sup>2</sup>	Effect	Antecedents	
			Marketing performance	Logistics performance
Competitive Performance	0.31	DE	0.48**	0.15
		IE	0.00	0.00
Relative Performance	0.30	DE	0.54**	0.02
		IE	0.00	0.00
SCM Strategy	0.41	DE	0.51**	0.24**
		IE	0.00	0.00
External Collaboration Willingness	0.44	DE	0.50**	0.28**
		IE	0.00	0.00

\*\* P ≤ 0.01; DE = direct effect of the antecedent, IE = indirect effect of antecedents within paths connected, R2= proportion explained by antecedents within each specific path.

Competitive Performance; and Relative Performance. This means that the capacity for responsiveness to customers manifests an apparent performance outcome. Such an organization is considerate with suppliers and customers. If so, this will ensure that individuals and organizations in the supply chain will have good relationships.

Individuals and organizations in the supply chain consist of suppliers who are providers of raw materials or ready-made materials, product distributors, and customers. Marketing performance that is good and efficient will stimulate good collaboration with external organizations. Usually, organizations, suppliers and customers together

ensure that an organization has increased sales and more assets with a higher market share. This in turn will affect the capacity to provide good levels of responsiveness to customers, thereby satisfying customers, as well as inducing an enhanced relative performance.

Logistics Performance involves operations in which products are optimally delivered to customers in a fast and efficient manner. This eventuates in suppliers and customers trusting an organization. Good communication results in mutual understanding on the part of all parties in the supply chain. These results lead to an intention to build collaboration which may involve exchanges of ideas, sharing of information, sharing of knowledge and expertise with

**Table 2.** Results of hypothesis testing.

Hypothesis	Path coefficient	t-stat. <sup>a</sup>	Result
H <sub>1</sub> : Marketing Performance left positive effect on SCM Strategy	0.51	4.62	Support
H <sub>2</sub> : Marketing Performance left positive effect on External Collaboration Willingness	0.50	3.91	Support
H <sub>3</sub> : Marketing Performance left positive effect on Competitive Performance	0.48	3.71	Support
H <sub>4</sub> : Marketing Performance left positive effect on Relative Performance	0.54	4.89	Support
H <sub>5</sub> : Logistics Performance left positive effect on SCM Strategy	0.24	2.12	Support
H <sub>6</sub> : Logistics Performance left positive effect on External Collaboration Willingness	0.28	2.02	Support
H <sub>7</sub> : Logistics Performance left positive effect on Competitive Performance	0.15	1.18	Not support
H <sub>8</sub> : Logistics Performance left positive effect on Relative Performance	0.02	0.17	Not support

<sup>a</sup>t-stat  $\geq 1.96$  means significant at  $p \leq 0.05$ .

suppliers and customers. When considered in each variable, the following was found:

Competitive Performance was directly and strongly affected by Marketing Performance and Relative Performance, but it was not affected statistically by Logistics Performance.

SCM Strategy was directly influenced by Marketing Performance and Logistics Performance. Marketing Performance had a higher influence than Logistics Performance in at least two times ( $DE = 0.51$  compare to  $0.24$ ) and mutually controlled the behavior of SCM Strategy. This means that organizations need to communicate and create good understanding with individuals and organizations who are customers and suppliers if they are to have effective marketing performance generating sufficient sales revenues and market share. This last is, therefore, seen as a favorable consequence of having highly valued suppliers and customers. It was also found that fast and highly efficient product distribution flows from a good supply chain strategy.

In regard to External Collaboration Willingness, it was found that behaviors were similar to those found in connection with SCM Strategy. External Collaboration Willingness was influenced by Marketing Performance at a higher level than by Logistics Performance in approximately two times ( $DE = 0.50$  compare to  $0.28$ ). Collaboration with suppliers and customers will be efficient when the organization experiences a good marketing performance and with having sufficient operational assets that can be used to foster favorable relationships with individuals and organizations in the supply chain, as well as having an awareness of the value of maintaining such relationships. In fine, good relationships are a function of fast and highly efficient processes of product distribution (Logistics Performance).

## Quality of model

### Global prediction

In Table 3 and Figure 1, it is shown that structural equations had an  $R^2$  value between 0.301 and 0.437.

This means that the levels of relationship of variables in the structure are mutually influenced one another in accordance with the structural equations at a moderate to a good level. In Table 4, it is seen that the value of Average Communitality in each block ranged from 0.601 to 0.795, which were very high. This means that latent variables could reflect their influence in the form of indicators very well. Hidden variables in the structural equation could affect the predictive capacity of indicators in blocks at a moderate level, a state of affairs which can be observed on the basis of the value of Average Redundancy, a variable having the value range from 0.181 to 0.285. Overall quality of the model was shown by the fact that GOF (Goodness of Fit) was equal to  $\sqrt{.363 * .679} = 0.496$ . This means that the model exhibited a prediction performance in an overall picture at a good level.

### Convergent validity

On the basis of Table 3, it can be seen that all loading values had significance at the level of 0.01. All loadings had values higher than 0.707. Each block had a composite reliability (CR) higher than 0.90. Only Logistics Performance had a CR equal to 0.887, but higher than the threshold, which was 0.60. It was also found that all blocks had Average Variance Extracted (AVE) higher than 0.50, which was between 0.664 and 0.795. The CR value was the indicator of reliability of scale in each block. This indicates consistency of respondents when answering the same questions as seen in the fact that more or less the same scores were obtained over the range of 100 responses. Inasmuch as a denominator of 100 shows a high value, it means that the scale for that block was clear and what was measured was solely what the researcher had intended to be measured. The value of AVE refers to the index indicated in each block, and, thus, how well the scale reflected the behaviors of latent variables that are hidden. Findings indicate that all items in each block could measure variables in their own blocks very well.

**Table 3.** Descriptive statistics, convergent validity and composite reliability.

<b>Indicator</b>	<b>Mean</b>	<b>loading</b>	<b>t-stat.</b>	<b>CR</b>	<b>AVE</b>
Scm1: finding new ways in the integration of SCM activities	3.42	0.71	8.56	0.92	0.66
Scm2:building trust	3.43	0.80	17.20		
Scm3:arranging for contact with SCM member more frequently	3.34	0.79	12.98		
Scm4:communicating future needs for customers and suppliers	3.44	0.86	21.81		
Scm5:expanding the supply chain beyond the groups of customers and suppliers	3.48	0.86	21.61		
Scm6:communicating to allow customers to know an overall picture of the future of the organization	3.45	0.83	22.76		
<b>SCM Strategy</b>	3.43				
WI1: communicating with members in the supply chain frequently as usual	3.52	0.80	14.54	0.93	0.65
WI2: intending to share information with members in the supply chain	3.46	0.87	31.42		
WI3: teamwork from various units	3.45	0.77	13.84		
WI4: sharing knowledge, technical expertise with suppliers	3.40	0.77	14.46		
WI5: high-ranking administrators contact and interact with members in the supply chain	3.48	0.83	15.90		
WI6: sharing knowledge and technical expertise with customers	3.42	0.86	20.28		
WI7: using teamwork in the supply chain that come from various companies	3.39	0.76	13.64		
<b>External Collaboration Willingness</b>	3.45				
Mp1:increased market share on average in the past three years	3.23	0.86	19.67	0.92	0.80
Mp2:increased sale volume on average in the past three years	3.28	0.89	26.76		
Mp3:increased sale value on average in the past three years	3.31	0.93	40.98		
<b>Marketing Performance</b>	3.27				
lp1: delivery speed	4.27	0.81	15.24	0.92	0.71
lp2:delivery dependability	4.25	0.87	27.31		
lp3:responsiveness	4.28	0.83	21.07		
lp4:delivery flexibility	4.30	0.85	26.48		
lp5:order filling capacity	4.28	0.85	25.60		
<b>Logistics Performance</b>	4.28				
Cp1:sales growth in the past three years	3.32	0.80	12.26	0.89	0.66
Cp2:growth of market share in the past three years	3.25	0.87	20.55		
Cp3:growth of assets in the past three years	3.31	0.82	17.99		
Cp4:overall competitive ability	3.30	0.77	14.13		
<b>Competitive Performance</b>	3.29				
Rp1:company responding to normal needs of all customers	3.38	0.80	15.38	0.90	0.60

**Table 3.** Cont'd

Rp2:company responding to special needs of all customers	3.28	0.83	19.66
Rp3:company delivering products on the date and time desired by customers	3.41	0.84	18.57
Rp4:company providing products in accordance with the quantity ordered	3.43	0.79	13.75
Rp5:company presenting new products	3.01	0.67	7.89
Rp6:informing customers in advance regarding delayed delivery or insufficient products	3.32	0.72	9.96
Relative Performance	3.31		

**Table 4.** Discriminant validity and model quality indices.

	LV1	LV2	LV3	LV4	LV5	LV6	R <sup>2</sup>	Average communality	Average redundancy
LV1	0.81						0.41	0.66	0.267
LV2	0.72	0.81					0.44	0.65	0.285
LV3	0.60	0.61	0.89				0	0.80	0
LV4	0.44	0.47	0.37	0.84			0	0.71	0
LV5	0.57	0.57	0.53	0.33	0.82		0.31	0.66	0.202
LV6	0.48	0.60	0.55	0.23	0.57	0.78	0.30	0.60	0.181
			Average				0.36	0.68	0.234

LV1 = SCM Strategy LV 2 = External Collaboration Willingness LV3 = Marketing Performance. LV4 = Logistics Performance LV5 = Competitive Performance LV6 = Relative Performance.



### Discriminant validity

In Table 4, it is seen that  $\sqrt{\lambda_{AVE}}$  was the number in the diagonal line which had a higher value than all other values for Cross Construct Correlation in the same column. This means that the scale in the block which was the Column Variable could measure variables in each block very well without crossing over to measure things in other blocks.

### DISCUSSION AND IMPLICATION

Findings indicate that the determination of SCM Strategy and External Collaboration Willingness are necessary for considerations of Marketing Performance and Logistics Performance. This is because if Palm Oil Company has a good marketing performance, it follows that it has an increased volume of sales concomitant with increased value of sales and increased market share. Therefore, such a Marketing Performance engenders efforts to retain individuals and organizations in the supply chain as in Green et al. (2008). Commitment, trust, and communications are heightened in order to retain customers and suppliers. There will also be new customers and suppliers. This finding is congruent with the study of organizational needs, and so should be taken into consideration when efforts are exerted to retain customers and suppliers and to find new customers. If this state of affairs is to be sustained, then, it is necessary for an organization to be efficient in taking orders and product delivery. Speedy and efficient delivery while respecting agreements with and requests by customers are essential factors in Marketing Performance. This finding agrees with Tracy, Lim and Vonderembse (2005) and Green et al. (2008).

Palm Oil Company will not show good competitive performance as measured by increased volume of sales or market share if organizations ignore Marketing Performance. Marketing Performance is best measured by increases in the volume of sales, the value of sales, and market expansion. If Marketing Performance is effective, this will in turn engender an enhanced Competitive Performance and an improved Relative Performance as was disclosed by Gimenez and Ventura (2005) of strong relationship between them. Palm Oil Companies which are eager to have increased returns must pay close heed to its customers (that is, Relative Performance). If so, Competitive Performance itself will be improved.

However, empirical finding indicates that Logistics Performance did not significantly influence Competitive Performance and Relative Performance. This finding should be once again investigated in the light of a new set of empirical data.

Lastly, RVB, RAT and NT, in combination, help well perform in linking firm performance, SCM practice and collaboration. In next study, Entrepreneurship Theory should be introduced as another theory that explain the

interconnection of constructs from exercising the superior attributes of entrepreneur so that the framework might be somewhat changed

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