THE RELATIONSHIP MANAGEMENT BETWEEN SUPPLY CHAIN MANAGEMENT AND BUSINESS PERFORMANCE: EMPIRICAL EVIDENCE FROM TRANSPORTATION INDUSTRY

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ABSTRACT

Logistics is a part of supply chain management that controls and streamlines the flow of activities, allowing customers' needs to be fulfilled. A significant portion of drives and supports to logistics management strategies came from policies implemented by executives. The transportation industry is an important part in supply chain management, being the link that connects the customers' needs to the providers. Important strategies in managing road transports every operator must consider are maximizing responsiveness and diversifying services. This study aims to study factors constituting relationship management and supply chain management that affect business performance of transport operators. This quantitative study collected data from 200 operators, using questionnaires. The relevance of the questionnaires was assessed using Cronbach's alpha coefficient before the questionnaires were distributed. The collected data were analyzed using the structural equation model. Results of the study revealed that factors constituting relationship management and supply chain management affected business performance of transport operators. Organizations that implemented relationship management strategies – such as supplier management, customer relation management, customer retention strategies, and customer complaint handling services – could create effective collaborations throughout their supply chains. Organizations must recognize that aiming to exceed customer expectations was a worthwhile endeavor which could profit the business in the long run.

Keywords: relationship management, Supply Chain Management, Business performance, Transportation industry

INTRODUCTION

Important strategies for transporting goods different operators must consider include increasing responsiveness and variety of services. Factors that influence customers' choice include quality of goods and of the accompanying services. That is, in the case where the goods are of sufficient quality, but the accompanying services (Maina & Mwangangi 2020), such as delivery, are poor, the customers may not be satisfied. Therefore, relationship management and supply chain management play important roles in increasing transport operators' effectiveness of analysis, planning, and execution of those plans. Software used to design, create, and store, for the benefits of trading with customer groups in different target markets, such as customer database, analytic software, shipment trackers, and customer contact and management software, are used to fulfill objectives of organizations. Moreover, supply chain management also encompasses management of procedures aimed to create customer satisfaction, starting

from procuring and purchasing, production, storage, public relations, sales, and delivery. These procedures do not include only intra-organizational processes, but encompass creation of inter-organization relations, forming a chain or a network that allow them to continuously collaborate (Langley et al., 2020). There is a lack of studies on causal relationships, in terms of value-adding, in the context of road transport operators (Truong 2020). Therefore, this study aims to fill this gap by adapting and implementing the concept of intra- and inter-organization relationship management, and of the important strategy in management of distribution and delivery that each operator must consider, namely, their responsiveness, where organizations share essential information and limited resources to fulfill their objectives, while minimizing costs and maximizing the fulfilment of customer demands. This study would benefit value adding processes or business operations, increase profit for businesses, develop them sustainably, as well as provide information for decision makings in different sectors of businesses, both in the service and manufacturing sectors in Thailand.

Objective

To study the influences of relationship management and supply chain management on business performance of transport operators in Thailand.

LITERATURE REVIEW

Relationship Management

Customer relation management is about learning to develop relationship with customers. Customer relation management is both a strategy and a tool an organization or service personnel of an organization could use in providing services to customers. This does not require cutting-edge technology if an organization already has technology that could be adapted for the purpose. An organization must make their service staff aware that technology is merely a tool to support customer relation management, and that customer relation management is part of everyone in the organization that creates an advantage for the organization. Customer relation management, in the concept proposed by Hanaysha & Al-Shaikh (2022), consists of i) customer prospecting: catalogues of goods or services a business offers must be ready for customers to request, ii) establishment of communication channels with customers, and iii) interaction management, consisting of communications, exchange of information, as well as development of an understanding of customer expectations. The understanding of customer expectations and needs can be used to prepare goods or services that best fit them. Familiarity with customers is important to customer relation management, because, for transport businesses, communications between the businesses and their customers are important. This is in accordance with the study by Truong (2020) on opportunities of truck operators to establish business collaboration that create competitive advantages. Results of the study showed that factors affecting business collaboration were, first, intra-organizational collaboration; second, establishment of credibility and trust between businesses, and low-cost management.

Supply Chain Management

Supply chain management is an overall process of the flow of materials, information, and transactions from suppliers to producers, distributors, and customers or consumers, in order. All the aforementioned are in business relationship. An organization could aim to manage its supply chain to give itself the ability to manage its growth, ensure its sustainability, and to

reduce its inventory costs (Khandelwal et al.,2021). The reduction of inventory costs could be done by eliminating activities that do not generate values and that increase the inventory. This will also increase the efficiency, both in terms of time and capital, i.e., it improves lead time and increases the ability to fulfill orders. Appropriate information usage, where data systems are adjusted and connected, and where there are improvements in quality of information aimed to improve competitiveness, establishment of partners, collaboration with suppliers, distributors, service providers, and customers would be benefited by the use of e-commerce and by action plans formulated collectively (Langley et al., 2020). This is in accordance with a study by Maina & Mwangangi (2020) on increasing competitive advantages of businesses in a palm oil industry using logistics strategies, consisting of reduction of costs, differentiation of products or services, creating superior services, and increasing responsiveness. Their analysis pointed that the logistics strategy that could significantly increase competitiveness of businesses in the palm oil industry was the establishment of relation between sellers and buyers, consisting of an establishment of a long-term relationship and trust.

Business performance

A good management system positively affects a business's competitiveness. A management system is important because it plans directions and controls the processes of turning raw materials into goods or services for customers. Good relationship management provides opportunities to improve business competitiveness. Supply chain management, fast decision makings, improvement of an organization's performance, increase in the orgainzation's efficiency, reduction of costs, and reduction of lead time will increase the organization's opportunities to compete. Management lays down a framework people in an organization must follow for its goals to be fulfilled, makes its members aware of their roles and responsibilities, work effectively, and able to make decision based on relevant information (Shah et al., 2020). This is emphasized by Saragih et al. (2020), who states that well-designed relationship management would help operators make decisions and analyze risks given the uncertainties in monetory and market structures, allowing them to set appropriate missions, goals, and management objectives, both in the short- and long run. This would improve the operators' competitiveness. Road transport operators in Thailand should improve their performance and effectiveness, especially in operational management, to reduce costs and lead time. Good relations with stakeholders could be established and used to improve transport operations to allow the operators to be more competitive when the market is open in the future. Operators should focus on establishing business partners to widen their operational areas. Therefore, effective management, aiming to deliver services in time, reduce costs, create customer satisfaction, and create harmony in different operations will lead to fulfillment of the organization's goals and a high level of competitiveness. On the other hand, indirect effect findings reveal that information sharing significantly moderates within the two antecedents of SCM capabilities namely technology capability, strategic sourcing and business performance. Whereas, is not significantly moderates in the relationship of logistics integration and business performance of food industry (Pintuma et al., 2020).

METHODOLOGIES

Population

All transport business operators in Thailand were the population of this study. We had specified the sample size of 200 in accordance with standardized criteria. The sample size was calculated as the product of the number of observed variables (10) and a factor of 20 (Schumacker & Lomax, 2012; Hair et al., 2010). Simple random sampling was used to select the samples.

Materials

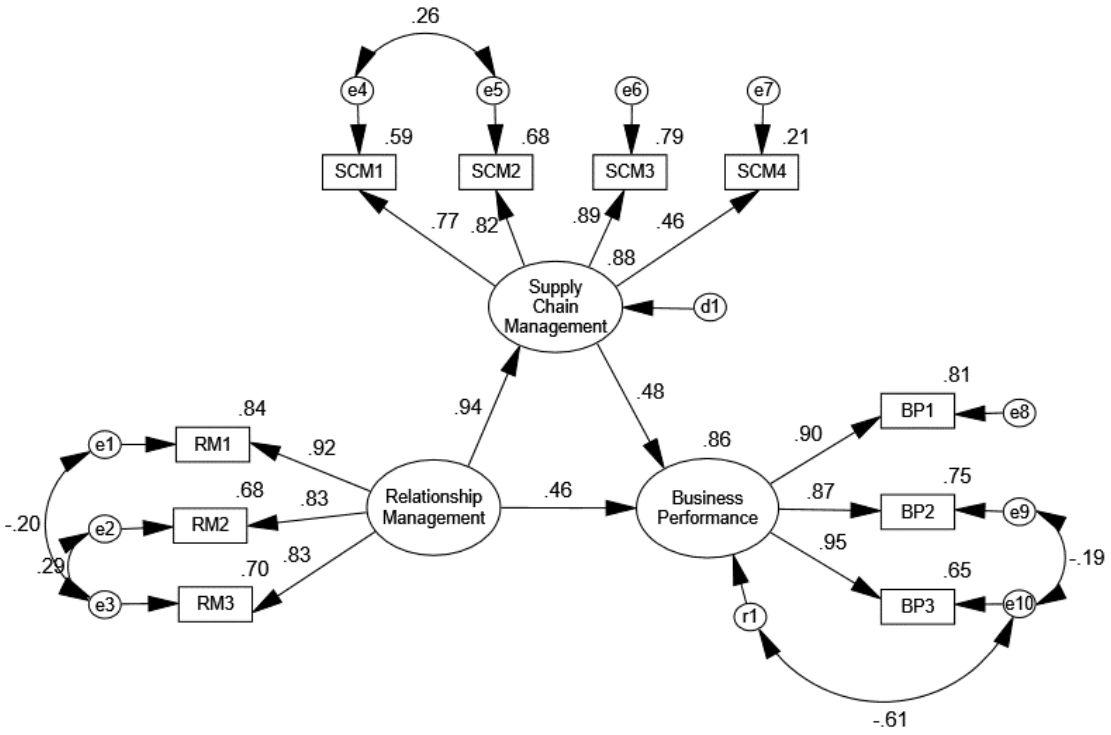
This quantitative study used questionnaires, consisting of 5-level rating scale (Likert, 1972), to collect data. Cronbach's alpha coefficient was used to determine reliability in the questionnaires. A coefficient of 0.7 or higher would indicate that a questionnaire was reliable (Cronbach, 1990). Data from 30 samples were collected and the alpha coefficient was calculated. A value of 0.945 was observed, indicating a high level of reliability.

Data Processing

Standard regression weights were calculated using a software. Statistical significance was set as $| t | \geq 1.96$ or a critical ratio (CR) and an R^2 value of at least 0.2 (Lauro & Vinzi, 2004). Structural equation modelling (SEM) was conducted using maximum likelihood (ML) parameters. Goodness of fit measures were calculated according to an established standard (Hair et al., 2010).

Structural Equation Modelling Results

Relationships between variables are shown in Figure 1 and Table 1. The calculation of the goodness of fit of the model to the empirical data revealed a Chi-square (χ^2) value of 32.269, df = 27, CMIN/DF (χ^2/df)= 1.195, p=.222, GFI=.976, CFI=.998, AGFI=.952, RMSEA= .027. All standard regression weights were statistically significant ($| t | \geq 1.96$ or CR and R^2 values were at least 0.2; Lauro & Vinzi, 2004). The goodness of fit measure between the model and the empirical data are shown in Table 2. The results were in accordance with established criteria (Hair et al. 2010; Lomax & Schumacker, 2012; Kline, 2015).



Chi-square (χ^2) = 32.269, df = 27, CMIN/DF (χ^2 /df)= 1.195, p=.222, GFI=.976, CFI=.998, AGFI=.952, RMSEA= .027

Figure 1 Final Model

Table 1 ANALYSIS RESULTS OF STRUCTURAL EQUATION MODEL

RELATIONSHIPS AMONG VARIABLES			Estimate	S.E.	R^2	C.R.	P
Supply Chain Management	<---	Relationship Management	.941	.047	.885	18.137	***
Business Performance	<---	Relationship Management	.463	.156	.865	2.885	.004
Business Performance	<---	Supply Chain Management	.481	.174		2.992	.003
BP1	<---	Business Performance	.901	.049	.812	18.493	***
BP2	<---	Business Performance	.867	.053	.752	15.748	***
BP3	<---	Business Performance	.950		.652		
RM1	<---	Relationship Management	.918		.843		
RM2	<---	Relationship Management	.826	.041	.682	18.696	***
RM3	<---	Relationship Management	.834	.047	.696	17.612	***
SCM1	<---	Supply Chain Management	.769	.054	.591	15.584	***
SCM2	<---	Supply Chain Management	.822	.050	.675	17.580	***
SCM3	<---	Supply Chain Management	.887		.787		
SCM4	<---	Supply Chain Management	.463	.067	.214	7.822	***

Remark: The level of statistical significance *** p < .001

TABLE 2 DETERMINATION OF SAMPLE SIZE PROPORTIONS

Fit index	Symbols	Criteria	result	Fit index
Chi-square	χ^2	Ns. (p > .05)	32.269(p=.222)	Pass
Relative Chi-square	χ^2/df	χ^2/df < 3.00	1.195	Pass
Goodness of Fit Index	GFI	>.90	.976	Pass
Comparative Fit Index	CFI	>.95	.998	Pass
Adjusted Goodness of Fit Index	AGFI	>.90	.952	Pass
Root Mean Square Error of Approximation	RMSEA	<.08	.027	Pass

Remark: Hair et al. (2010); Lomax & Schumacker, 2012; Kline, 2015)

Hypothesis Testing

T-tests were used to test a set of hypotheses. The critical p-value was set at 0.05, and the relationship between every pair of independent and dependent variables were determined using ML parameter estimation. Results showed regression coefficients of every path model according to the hypotheses. T-tests showed statistically significant results for all hypotheses (Table 3).

Table 3 RESULTS OF HYPOTHESIS TESTING

Hypothesis	**coef.**	**t-test**	**TE**	**DE**	**IE**	**Test Results**
Supply Chain Management<--- Relationship Management	.941	18.137***	.941	.941	000	Supported
Business Performance<--- Relationship Management	.463	2.885*	.916	.463	.453	Supported
Business Performance<---Supply Chain Management	.481	2.992*	.481	.481	000	Supported

Remark: The level of statistical significance *** p < .001, * p < .05

Hypothesis 1: Relationship management affected supply chain management. Results showed that the regression coefficient was 0.941. The hypothesis was accepted with statistical significance (p< 0.001).

Hypothesis 2: Relationship management affected business performance. Results showed that the regression coefficient was 0.463. The hypothesis was accepted with statistical significance (p< 0.05).

Hypothesis 3: Supply chain management affected business performance. Results showed that the regression coefficient was 0.481. The hypothesis was accepted with statistical significance (p< 0.05).

RESULT AND DISCUSSION

Results showed that relationship management and supply chain management affected business performance of transport operators**.** Organizations that managed their relationships – ones that managed suppliers, customer relations, customer retention, and customer complaints

– could create effective collaboration throughout their supply chains. Operators should realize that exceeding expectations of customers was worthwhile aim and could profit their businesses in the long run. This was in accordance with Saragih et al. (2020), who stated that well-designed relationship management could help operators make decisions related to the analyses of risks and of uncertainties in monetary and market structures, as well as define appropriate missions, aims, and management objectives in both short- and long term, making them more competitive. This was in accordance with Maina & Mwangangi (2020), who studied the roles of logistics strategies in increasing competitive advantage. They pointed that the logistics strategy that was crucial in increasing competitiveness of businesses in a palm oil industry was the long-term relationship-building strategy between the sellers and the buyers, where both parties valued each other.

Recommendations

Transport operators should use technology to provide their services. Employing a suite of technology for their operations would benefit their organizations and their customers by allowing fast communications between the customers and the businesses. Database technology could lead to good relationship between the businesses and customers, because the latter's details could be recorded, creating a competitive advantage. Transport operators should adapt and use new technology to improve their business performance, both in providing transport services and in intra-organization management, to reduce costs to a degree that provides them an advantage over their competitors.

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