Supply Chain Management Practices: A Study of Freight Forwarders in Nepal

Praman Khanal* and Govinda Tamang

Central Department of Management, Tribhuvan University, Kirtipur, Kathmandu, Nepal

ABSTRACT

The aim of this research aim was to study supply chain management practices among 25 selected freight forwarding companies in Nepal; the focus was on their competitive advantage Questionnaires were sent to the sample companies and the response rate was 76% though only 64% of the completed questionnaires was usable. Statistical analysis performed were reliability tests, descriptive statistics, correlation and multiple regression. All of the statements used in this paper had Cronbach alpha scores of >0.7, indicating their reliability. Among the 16 respondents, 25% were CEOs and Directors while the rest managers. In this study, three hypotheses were tested and all null hypothesis were rejected which implied supply chain management (SCM) practices had significant impact on supply chain responsiveness and they created competitive advantage to the firm. This study found that customer relationship as the most significant variable (36.5%) in determining supply chain responsiveness while trust and commitment were significant (34%) in determining competitive advantage. Operation system responsiveness and logistics process responsiveness were significant (86%) in determining competitive advantage. Effect of supply chain management practices were analysed and it was concluded that they were important in creating effective supply chain responsiveness and competitive advantage to the firm.

INTRODUCTION

Supply chain management has become the focus of companies to offer value added services to their customers. The principle of supply chain activity is based on: receiving input from suppliers, add

value, and deliver to customers (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006). The main objective of the supply chain activity is to maximise overall value of the firm by proper deployment and utilisation of its resources. Supply chain management is new source of competitive advantage, integrating all functional activities from purchasing, manufacturing, operations, distribution and transportation in a unified manner. The key is to link all the partners in the chain, integrate them and coordinates all of these activities into a seamless process. The partners are carriers, third-party companies, vendors, information systems providers in addition to the departments within the organisation.

Freight forwarding companies operate in a challenging business environment which has become more global, technology equipped and customer focused, whereby quick response, quality products and services (Yango & Burnus, 2003) is the name of the game. Firms consider cost and quality service as basic market entrant, while responsiveness and timely delivery are winners (Narasimhan & Das, 1999a). Sabath (1998) argues that supply chains need to be responsive to cope with volatile demand. In this unpredictable business environment and customer demand, the supply chain management need act and respond quickly when disruption occurs.

Earlier studies have focused on supply chain integration (Forhlich & Westbrook, 2001) to show to show the management's flexibility and speed in response. These

scholars have studied supply chain management practices in relation to supply chain responsiveness, the scope t as well as essential components of supply chain management in this increasingly competitive business world.

According to Nepal Freight Forwarders Association (NEFFA), a national association of freight forwarders of Nepal established in 1998, there are 118 freight companies listed as general members while 7 companies as associate members to date.

LITERATURE REVIEW

The main goal of this research is to study the effect of supply chain management practices. The following was the focus: (1) supply chain management practices that comprise trust and commitment among partners, relationship with customers, level of information sharing (2) supply chain responsiveness that include operations system responsiveness and logistics process responsiveness (3) competitive advantage of the firm.

Supply Chain Management

It is defined as the set of activities undertaken for the effective management of its supply chain. This study focuses on three components of supply chain management as discussed below.

Trust and commitment. Trust and commitment relate to support and cordial behaviour among the supply chain members. "Trust is a favourable attitude that exists

when one supply chain member has confidence in other supply chain members" (Anderson & Narus, 1990). Trust helps in proper coordination between the partners and for the flow of information. Bianchi and Saleh (2010) stated that trust and commitment are essential for enhancing performance of companies in developing countries. Conflicts of interest are likely to occur when one supply chain member gets more benefits compared with other members from an existing risk and reward sharing process (Cachon & Lariviere, 2005). Arshinder, Kanda, & Deshmukh (2006) state that conflicts in relation to vision and goals of supply chain members result in the individual profit maximisation.

Customer relationship. Customer relationship is defined as "the entire array of practices that are employed for the purposes of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction" (Li et al., 2006). Good customer relationship creates strong advantage for the firm (Day, 2000). The growing trend of mass customisation and personalised service attention is making customer relationship a very important factor for corporate survival (Wines, 1996). Good relationship with supply chain members, including customers, are of utmost importance for successful implementation of SCM programmes.

Information sharing. Information sharing refers to "the extent to which critical and proprietary information is communicated to one's supply chain partner" (Li et al., 2006). Information can vary from strategic to tactical in nature and could be relevant to logistics, demand forecast, market and proprietary information among others. Information sharing needs to be reliable and credible with response to adequacy, accuracy and timeliness. While information sharing is important, the significance of its impact on supply chain management depends on what, when and how the information is shared and with whom (Holmberg, 2000). To better respond to market change quicker and understand the final consumer needs, the supply chain partners together can work as a single entity as they exchange information regularly. (Stein & Sweat, 1998).

In recent times, uncertainties have become a concern in supply chain which leads in increasing inventory and inappropriate demand forecast.

Supply Chain Responsiveness (SCR)

Supply chain responsiveness is defined as the supply chain efficiency and effectiveness which can address volatile customer demand. In this present competitive world, organisation and the supply chains should be more flexible and responsive (Gould, 1997; Narasimhan & Das, 1999b). Responsiveness consists of both flexibility and speed. Prater, Biehl, and Smith, (2001) observe that speedy delivery and flexibility are directly related to supply chain responsiveness.

Operations system responsiveness (OSR). Operations system responsiveness is defined as the ability of a firm's operations system to

address volatile customer demand (Thatte, Rao, & Ragu-Nathan, 2013). Operations system consists of two parts: production operations and service operations. Service operations at each node should be reliable and timely to satisfy customer demand (Lummus, Duclos, & Vokurka, 2003). Operations system would be considered efficient if there is cost reduction and no resources are wasted on non-value added activities (Naylor, Naim, & Berry, 1999). Anderson and Narus (1990) identified responsive operation as the major component of successful supply chain strategy that create firm's value. Measures used to operationalise the OSR constructs are; responds swiftly in labelling, packaging and documentation, reconfigures process to address demand change, responds rapidly to changes in shipment, effectively expedites emergency orders, adjusts capacity and reallocation of employees.

Logistics process responsiveness (LPR). Logistics process responsiveness is the firm's ability in warehouse management, distribution, and transportation to address volatile customer demand. Logistics management deals with packaging, warehousing, transportation, shipping, order tracking and delivery. "The responsiveness in the logistic processes is a vital component in the success of a responsive supply chain strategy" (Fawcett, 1992). This study has focused on the distribution channel of the freight industries. Fuller, O'Conner, and Rawlinson (1993) suggest in creating customer value, firm's logistics system plays

an important role. Logistics flexibility and speed in supply chain creates value for firm's customers to serve distinct customer needs (Lummus et al., 2003). Responsiveness is to build flexibility and swift response which comprises the following : accommodate and respond to volatile demand, adjust warehouse capacity, handle a wide range of products, vary transportation carriers and the ability to customize products. All of these done swiftly create a competitive advantage for the firm.

Competitive Advantage

Competitive advantage is defined as the "capability of an organization to create a defensible position over its competitors" (Li et al., 2006). It is the ability of a firm to differentiate itself from its competitors and is an outcome of critical management decisions (Tracey, Vonderembse & Lim, 1999). According to Porter (1991), firms need to be either low cost or offer unique service/product that is valued by its customers (Porter, 1991). Wheelwright (1978) suggests price, quality, dependability and delivery as some of the competitive advantage of a firm. Koufteros, Vonderembse and Doll (1997) describe five dimensions of competitive capabilities: competitive pricing, premium pricing, value-to-customer, quality and dependable delivery. Based on literature review, the following eight competitive dimensions were explored in this study.

Price/cost. Price is quantity of payment or compensation given by one party to

another in return for goods or services. To be competitive, an organisation should have the ability to compete on price.

Delivery dependability. It means keeping speed, delivery promises and dependability which are two halves of delivery performance. In order to be competitive, an organisation should have to provide on time the type and volume of product required by customer(s).

Flexibility. The ability of a system to adjust according to the need and time. In order to be competitive, an organisation should have ability to respond promptly and swiftly.

Safety. Safety is the control of recognised hazards in order to achieve an acceptance level of risk. Thus, the organization should have the ability to deliver shipment with no breakage and lost.

Insurance. It is a means of protection from financial loss. It is primarily used to hedge against uncertain loss, the risk of a contingent and provides a form of risk management. An organisation should have good insurance policies to be competitive in the market.

Packaging. It is the process and material used so the goods are packed safely and minimise shipping cost.

Labelling. It is the details of item in the shipping container, country of origin, correct weight, port of entry details and any details that are required in the language of the destination country.

Documentation. Necessary papers/ documents needed for the shipment consists of Bill of Lading (BoL), Commercial invoice, Certificate of Origin (CoD), Inspection certificate, Shipper Export Declaration (SED) and export packing list.

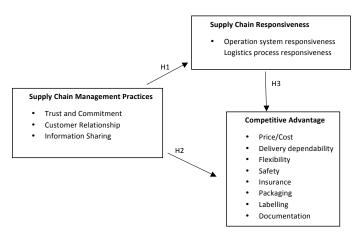The following is the research framework has been for this study.

Figure 1. Research framework for the study

The following hypotheses are tested:

H1: There is significant relationship between supply chain management practices and supply chain responsiveness.

H2: There is significant relationship between supply chain management practices and competitive advantage.

H3: There is significant relationship between supply chain responsiveness and competitive advantage.

METHODS

Questionnaire was used for data collection and it was administered to a total sample of 25 practitioners from different freight companies located in Kathmandu. Respondents are classified by their job title and job functions. For data collection, one of the non-probabilistic sampling technique, convenience sampling, was used.

Convenience sampling was appropriate for this research because this technique is the best way to reach the respondents and also due to resource constraints – time and money. Close end questionnaires were designed based on Five Point Likert Scale to indicate 1 (not at all), 2 (to a small extent), 3 (to a moderate extent), 4 (to a considerable extent) and 5 (to a great extent).

RESULTS AND DISCUSSION

Items measuring the factors have been explained in the questionnaire and Cronbach's Alpha was conducted for reliability test. All the items have over 0.7 scores which are considered reliable (Nunnally, 1978). Since 14 items in the questionnaire have Cronbach's Alpha > 0.7, the statement measuring the factors are considered reliable. Four items are identified for trust and commitment (Trus_com), five for customer relationship (Cus_rel) and again five for information sharing (Inf_sha).. These items explain the independent factors.

Table 1
Reliability test for independent factors

Factors	Items in the questionnaire explaining the factors	Cronbach's Alpha
Trus_com	*We develop trust among partners along with our business cooperation*	0.774
	We work out in cooperation with government regarding export policies	
	We have mutual understanding within our employees	
	We are fully committed in our service delivery	
Cus_rel	*We facilitate customer's ability to seek assistance from us*	0.747
	We frequently determine future customer expectations	
	We frequently measure and evaluate customer satisfaction	
	We frequently interact with customers to set reliability, responsiveness and other standards for us	

Table 1 *(continue)*

	We periodically evaluate the importance of our relationship with our customers	
Inf_sha	*We share information between trading partners in advance*	0.760
	We share information about the events which effect on other partners	
	We share proprietary information among us	
	For business planning we share proprietary information to each other	
	We trading partners keep us fully informed about issues that affect our business	
	We share information about the events which effect on other partners	
	We share proprietary information among us	
	For business planning we share proprietary information to each other	
	We trading partners keep us fully informed about issues that affect our business	

Similarly, reliability test was conducted for the items explaining dependent factors. Six items were identified for operations system responsiveness (OSR), five for logistics process responsiveness (LPR) and twelve for competitive advantage (CA). All the factors have Cronbach's alpha >0.7, and thus, items measuring the factors are considered reliable.

Table 2
Reliability test for dependent factors

Factors	Items in the questionnaire explaining the factors	Cronbach's Alpha
OSR	*responds swiftly in packaging, labelling and documentation as customers need*	0.897
	reconfigures process to address volatile demand	
	responds rapidly to shipment volume changes	
	effectively expedites emergency customer orders	
	adjusts capacity to address demand changes	
	reallocate people in customer need	
LPR	*Rapidly accommodates special and non-routine customer requests*	0.913
	Rapidly varies transportation carriers to volatile demand	
	Quickly adjusts warehouse capacity to volatile demand	
	Swift act to unexpected demand change	
	Effectively delivers expedited shipments	
CA	*We offer competitive prices*	0.919
	We are able to offer prices as low or lower than our competitors	
	We are able to delivery shipment on time	
	We offer short delivery time than our competitors	

Table 2 *(continue)*

	We can address the changes in shipment volume
	We deliver shipment safely
	We use online tracking for the safety and proper delivery
	Provide assistance to the customers on how to package theirs products for export
	We provide suggestions on packaging for goods safety and minimum shipping cost
	We assist customers in providing the correct labeling
	Documentation is important for the shipment of an item overseas
	Assist customers in preparing Bill of lading (BoL), commercial invoice, certificate of origin (CoD), inspection certificate, shipper's export declaration, export packing list.

Descriptive Analysis

Table 3 shows mean scale close to maximum value. This indicates that there is positive attitude of respondents towards the considered factors.

Table 3
Descriptive test for the factors

Variables	Factors	N of items	Min	Max	Mean	S.D
SCM	Trus_com	4	10	20	16.06	2.97
	Cus_rel	5	14	25	18.94	3.49
	Inf_sha	5	12	25	19.13	3.2
SCR	OSR	6	13	30	22.94	4.91
	LPR	5	10	25	19.69	4.35
CA	CA	12	31	60	51.06	7.11

Correlation Analysis

Table 4 shows the value of correlation between supply chain management (SCM) and supply chain responsiveness is (SCR) 0.594, which indicate moderate level of correlation. The significance p-value of correlation between these two variables is 0.015 (<0.05). Therefore, there is significant relationship between supply chain management practices and supply chain responsiveness. Likewise, the value of correlation between supply chain management (SCM) and competitive advantage (CA) is 0.554, which indicates moderate level of correlation. The significance p-value of correlation between these two variables is 0.026 (<0.05). Therefore, there is significant relationship between supply chain management practices and competitive advantage. Similarly, the value of correlation between supply chain responsiveness (SCR) and competitive

advantage (CA) is 0.936, which indicate high degree of correlation. The significance p-value of correlation between these two variables is 0 (<0.01). Therefore, there is significant relationship between supply chain responsiveness and competitive advantage.

Regression Analysis

Backward regression for SCR with SCM. A stepwise regression model was developed to find the best combination of predictors for supply chain responsiveness (SCR)

Table 4
Correlations between the variables

		SCM	SCR	CA
SCM	Pearson Correlation	1	.594*	.554*
	Sig. (2-tailed)		.015	.026
	N	16	16	16
SCR	Pearson Correlation	.594*	1	.936**
	Sig. (2-tailed)	.015		.000
	N	16	16	16
CA	Pearson Correlation	.554*	.936**	1
	Sig. (2-tailed)	.026	.000	
	N	16	16	16

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed).

Table 5
Model summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694[a]	.481	.351	7.12362
2	.673[b]	.453	.369	7.02500
3	.638[c]	.407	.365	7.05095

a. Predictors: (Constant), Inf_sha, Trus_com, Cus_rel
b. Predictors: (Constant), Trus_com, Cus_rel
c. Predictors: (Constant), Cus_rel
d. Dependent Variable: SCR

Table 6
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.512	12.149		1.030	.323
	Trus_com	1.117	.939	.376	1.189	.257
	Cus_rel	1.241	.828	.490	1.499	.160
	Inf_sha	-.592	.739	-.214	-.802	.438
2	(Constant)	8.085	10.671		.758	.462
	Trus_com	.948	.903	.319	1.051	.313
	Cus_rel	1.020	.769	.402	1.325	.208
3	(Constant)	12.022	10.028		1.199	.251
	Cus_rel	1.616	.521	.638	3.100	.008

a. Dependent Variable: SCR

among the three Independent Variables, namely trust and commitment, customer relationship and information sharing. Three step (model) showed with customer relationship (Cus_rel) in determining SCR

with adjusted R2=36.5% and a significant F=9.609, p<0.05. Information sharing and trust and commitment do not appear to be of any importance.

Table 7
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	564.798	3	188.266	3.710	.043[b]
	Residual	608.952	12	50.746		
	Total	1173.750	15			
2	Regression	532.193	2	266.096	5.392	.020[c]
	Residual	641.557	13	49.351		
	Total	1173.750	15			
3	Regression	477.727	1	477.727	9.609	.008[d]
	Residual	696.023	14	49.716		
	Total	1173.750	15			

a. Dependent Variable: SCR
b. Predictors: (Constant), Inf_sha, Trus_com, Cus_rel
c. Predictors: (Constant), Trus_com, Cus_rel
d. Predictors: (Constant), Cus_rel

Backward regression for CA with SCM. A stepwise regression model was developed to find the best combination of predictors for competitive advantage (CA) among the three Independent variables, namely trust and commitment, customer relationship and information sharing. Three step (model) showed trust and commitment (Trus_com) in determining competitive advantage with adjusted R^2=34% and a significant F=8.743, p<0.05. Information sharing and Customer relationship do not appear to be of any importance.

Table 8
Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691[a]	.478	.347	5.74621
2	.653[b]	.427	.338	5.78616
3	.620[c]	.384	.340	5.77673

a. Predictors: (Constant), Inf_sha, Trus_com, Cus_rel
b. Predictors: (Constant), Trus_com, Cus_rel
c. Predictors: (Constant), Trus_com
d. Dependent Variable: CA

Table 9
Coefficients[a]

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.991	9.800		2.958	.012
	Trus_com	1.130	.758	.473	1.492	.162
	Cus_rel	.861	.668	.423	1.290	.221
	Inf_sha	-.648	.596	-.292	-1.087	.298
2	(Constant)	24.150	8.789		2.748	.017
	Trus_com	.946	.743	.396	1.272	.226
	Cus_rel	.619	.634	.304	.977	.346
3	(Constant)	27.267	8.176		3.335	.005
	Trus_com	1.481	.501	.620	2.957	.010

a. Dependent Variable: CA

Table 10
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	362.710	3	120.903	3.662	.044[b]
	Residual	396.227	12	33.019		
	Total	758.938	15			
2	Regression	323.702	2	161.851	4.834	.027[c]
	Residual	435.236	13	33.480		
	Total	758.938	15			
3	Regression	291.749	1	291.749	8.743	.010[d]
	Residual	467.189	14	33.371		
	Total	758.938	15			

a. Dependent Variable: CA
b. Predictors: (Constant), Inf_sha, Trus_com, Cus_rel
c. Predictors: (Constant), Trus_com, Cus_rel
d. Predictors: (Constant), Trus_com

Backward regression for CA with SCR. A stepwise regression model was developed to find the best combination of predictors for competitive advantage (CA) among the two variables, namely, operations system responsiveness (OSR) and logistics process responsiveness (LPR). One step (model) showed with operations system responsiveness (OSR) and logistics process responsiveness (LPR) in determining competitive advantage with adjusted R^2=86% and a significant F=47.183, p<0.01.

Table 11
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938[a]	.879	.860	2.65870

a. Predictors: (Constant), LPR, OSR
b. Dependent Variable: CA

Table 12
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.044	3.376		5.641	.000
	OSR	.620	.249	.428	2.488	.027
	LPR	.904	.281	.552	3.213	.007

a. Dependent Variable: CA

Table 13
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	667.044	2	333.522	47.183	.000[b]
	Residual	91.893	13	7.069		
	Total	758.938	15			

a. Dependent Variable: CA
b. Predictors: (Constant), LPR, OSR

Model Adequacy Test

Each model is developed under the fulfilment of assumptions. In this paper, three regression models as mention above under heading 7.1, 7.2 and 7.3 have been tested.

Adequacy test for SCR with SCM. Looking at the normal probability plot and histogram of the "backward regression for SCR with SCM" as shown in Figure 2, the assumptions of normality was found to be satisfactory. Similarly, in analysing the scatter plot "backward regression for SCR with SCM" of regression standardised residual and regression standardised predicted value, there has been uniform distribution of scatters around 0, which indicated linearity and homoscedasticity and independence of the residual have been satisfied.

(a) (b) (c)

Figure 2. Results of Model Adequacy Test for SCR with SCM (a) Histogram of backward regression for SCR with SCM (b) Normal Probability plot of backward regression for SCR with SCM (c) Scatter Plot of backward regression for SCR with SCM

Adequacy test for CA with SCM. Looking at the normal probability plot and histogram of the "backward regression for CA with SCM" as shown in Figure 3, the assumptions of normality is found to be satisfied. Similarly in analysing the scatter plot "backward regression for CA with SCM" regression standardized residual and regression standardized predicted value there has been uniform distribution of scatters around 0, which indicated linearity and homoscedasticity and independence of the residual has been satisfied.
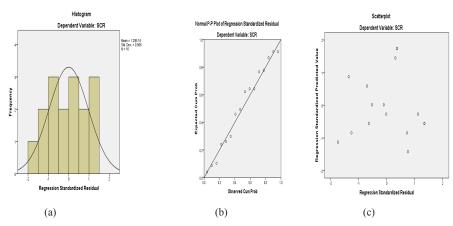

(a) (b) (c)

Figure 3. Results of Model Adequacy Test for CA with SCM (a) Histogram of backward regression for CA with SCM (b) Normal Probability plot of backward regression for CA with SCM (c) Scatter Plot of backward regression for CA with SCM

Adequacy test for CA with SCR. Looking at the normal probability plot and histogram of the "backward regression for CA with SCR" as shown in Figure 4, the assumptions of normality was found to be satisfied. Similarly, in analysing the scatter plot "backward regression for CA with SCR" of regression standardised residual and regression standardized predicted value there has been uniform distribution of scatters around 0, which indicated linearity and homoscedasticity and independence of the residual have been satisfied.
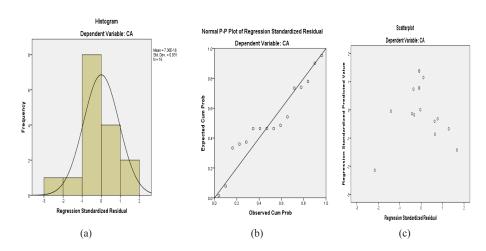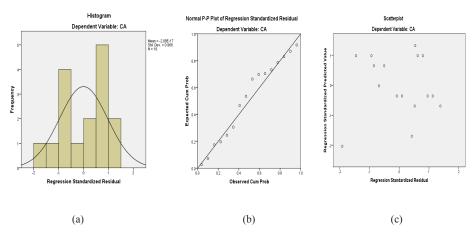

(a)   (b)   (c)

Figure 4. Results of Model Adequacy Test for CA with SCR (a) Histogram of backward regression for CA with SCM (b) Normal Probability plot of backward regression for CA with SCR (c) Scatter Plot of backward regression for CA with SCR

CONCLUSION

In Nepal, supply chain management is an emerging concept, therefore, studies on this are limited. Literature review has shown number of factors affect SCM such as trust and commitment, customer relationship and information sharing. Effect of supply chain management practices were analysed and it was concluded that they were important in creating effective supply chain responsiveness and competitive advantage to the firm.

REFERENCES

Anderson, J. C., & Narus, J. A. (1990). A model of distributor firm and manufacturer firm working partnership. *Journal of Marketing, 54*(1), 42-58.

Arshinder, K., Kanda, A., & Deshmukh, S. G. (2006). A graph theoretic approach to evaluate supply chain coordination. *International Journal of Logistics and Systems Management, 2*(4), 329-341.

Bianchi, C., & Saleh, A. (2010). On importer trust and commitment: a comparative study of two developing countries. *International Marketing Review, 27*(1), 55-86.

Cachon, G. P., & Lariviere, M. A. (2005). Supply chain coordination with revenue sharing contracts: strengths and limitations. *Management Science, 51*(1), 30-44.

Day, G. S. (2000). Managing market relationship. *Journal of the Academy of Marketing Science, 28*(1), 24-30.

Fawcett, S. E. (1992). Strategic logistics in coordinated global manufacturing success. *International Journal of Production Research, 30*(5), 1081-2000.

Forhlich, M. T., & Westbrook, R. (2001). Arcs of integration: An international study of supply chain strategies. *Journal of Operations Management, 19*(2), 185-200.

Fuller, J. B., O'Conner, J., & Rawlinson, R. (1993). Tailored logistics: the next advantage. *Harvard Business Review, 71*(3), 87-89.

Gould, P. (1997). What is agility. *Manufacturing Engineer, 76*(1), 28-31.

Holmberg, S. A. (2000). A systems perspective on supply chain measurements. International *Journal of Physical Distribution and Logistics Management, 30*(10), 847-868.

Imhan, R., & Das, A. (1999). Manufacturing agility and supply chain management practices. *Production and Inventory Management Journal, 40*(1), 4-10.

Koufteros, X. A., Vonderembse, M. A., & Doll, W. J. (1997, November). Competitive capabilities: measurement and relationships. In *Proceedings Decision Science Institute* (Vol. 3, pp. 1067-1068).

Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S., & Rao, S. S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *OMEGA, 34*(2), 107-124.

Lummus, R. R., Duclos, L. K., & Vokurka, R. J. (2003). Supply chain flexibility: building a new model. *Global Journal of Flexible Systems Management, 4*(4), 1-13.

Narasimhan, R., & Das, A. (1999a). An empirical investigation of the contribution of strategic sourcing to manufacturing flexibilities and performance. *Decision Sciences, 30*(3), 683-718.

Narasimhan, R., & Das, A. (1999b). Manufacturing agility and supply chain management practices. *Production and Inventory Management Journal, 40*(1), 4-10.

Naylor, J. B., Naim, M. M., & Berry, D. (1999). Leagility: Integrating the lean and agile manufacturing paradigms in the total supply chain. International *Journal of Production Economics, 62*(1), 107-118.

Nunnally, J. C. (1978). *Psychometric Theory.* New York NY: McGraw-Hill.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal, 12*(8), 95-117.

Prater, E., Biehl, M., & Smith, M. A. (2001). International supply chain agility. International *Journal of Operations and Production Management, 21*(5/6), 823-840.

Sabath, R. (1998). Volatile demand calls for quick response. *International Journal of Physical Distribution and Logistics Management, 28*(9/10), 698-704.

Stein, T., & Sweat, J. (1998). Killer supply chains. *Informationweek, 708*(9), 36-46.

Thatte, A. A., Rao, S. S., & Ragu-Nathan, T. S. (2013). Impact of SCM practices of a firm on supply chain responsiveness and competitive advantage of a firm. *The Journal of Applied Business Research, 29*(2), 499-530.

Tracey, M., Vonderembse, M. A., & Lim, J. S. (1999). Manufacturing technology and strategy formulation: keys to enhancing competitiveness and improving performance. *Journal of Operations Management, 17*(4), 411-428.

Wheelwright, S. C. (1978). Reflecting corporate strategy in manufacturing decisions. *Business Horizons, 21*(1), 57-66.

Wines, L. (1996). High order strategy for manufacturing. *The Journal of Business Strategy, 17*(4), 32-33.

Yango, B., & Burnus, N. (2003). Implications of postponments for the supply chain. *International Journal of Production Research, 41*(9), 2075-2090.

Yango, B., & Burnus, N. (2003). Implications of postponments for the supply chain. *International Journal of Production Research, 41*(9), 2075-2090.