

Impact Of Supply Chain Strategy On Supply Chain Performance: A Structural Equation Modeling In The Context Of Small Scale Indian Automobile Industries

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Abstract : In order to enhance Supply Chain performance of a firm it is required to adopt systematic Supply Chain practices. Every organization in present era is trying to enhance strategic gain by implementing SCM practices so they can shift firm's performance to a new level. Top management is looking to enhance overall profit of the firm. SCM act as a key tool for Supply Chain practitioner to enhance performance of firm in totality. This research examines the relationship of supply chain strategy (SCS) and supply chain performance for automobile industry in India. In order to examine aforesaid statistical methods Pearson correlation coefficient and Structural Equation Modeling (SEM) are used in this paper. Outcome indicates that there is strong association of SCS with SCP. Particularly SCS constraints such as innovative strategy (INSTR), customer-oriented strategy (COSTR) and agile supply chain strategy (ASCSTR) has a strong association with SCP (i.e. Cost Performance (CPER), Logistic Performance(LPER) and Quality Performance(QPER)). The SEM outcome correspondingly demonstrates that SCS constraints seem to be key rank & demonstrate prominence of SCP. The outcome demonstrates the substantial position of SCP of the automotive industry in India.

Keywords: Supply Chain Management (SCM), Supply Chain Strategy (SCS), Structural Equation Modeling (SEM), Small & Medium Enterprise (SME).

1. INTRODUCTION

Due to changes in government taxes (GST) in India, companies are trying to change their SC design to gain more profit. Due to need of sustainability aspect companies are shifting their focus from traditional vehicle to E-vehicles. Therefore there is a huge demand in market in upcoming years and also lot of challenges too. By virtue of rapid advancement of technology in current market situation there is strong competition in market and this will increase more and more in upcoming years. So companies are required to looking in to advancement there SCM practices. Satisfaction of customer is key parameter in achieving SCM performance in recent market. Now a day's SCM becomes an important aspect. Therefore SCS plays a vital role in achieving SC performance. SC comprises all activities from extraction of raw material to final delivery of product and after that following performance of product to continuously taking feedback from customers. Once executing entirely let downs there are several lagoons which turn out to be zones of failure of SC. In present era due to lots of competition companies are shifting from adoption of traditional SCM practices to advance SCM practices. Companies are starting redesigning of their SC in order to gain more and more profit. By statistical results this paper overcome the gap and show influence of SCS on SCP on small scale Indian Automobile Industries. The key purpose of this research is to identify the prominence of SCS over SCP.

2. LITRETURE REVIEW

By implementing SCM practices and improved SCS firms can increase competitive age & for SME's there are adequately lots of these opportunities in global market. SCM in present era turn in to a power full tool for firms to enhance their overall performance and gain competitive advantages to compete in global world. But to achieve this goal and redesign SCM practice it is very challenges and difficult task for all firms. Every customer wants faster delivery and quality product at very attractive price. Therefore proper and systematic management of SC is very necessary to achieve strategic gain in present scenario. Therefore every firm is looking to adopt new technological tools in SC practices to achieve high strategic gain. Current market situation is very fluctuating and customer is highly demanding, therefore implementation of flexibility in SCM practices is very essential in present market condition and it will increase in accelerated way in upcoming years. Consequently firms are essential to implement different SCS and added flexibility in SC. Former exploration of previous literature shows there are strong connection amongst SCM dimensions with firm's enactment & supports incorporation of all stock holders of SC to realize flexibility (Frohlich et al., 2001). The contemporary exploration targets to paradigm & investigate a model which indicates managing SCS and SCF is inevitable in the current scenario to enhance the performance. In present era over all life of product is diminishing and due to customer demand there is requirement of product variety in order to satisfy customer and gain competitive advantage (Ho et al,2002).Performance dimension is to increase the effectiveness and success of a SC (Beamon 1999).

3. RESEARCH METHODOLOGY

Hypotheses

SCM measurements such as SCS strongly influence SCP and Performance of the firm. A SEM is used in this research to analyze the structural effect of SCM measurements on SCP results.

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Main Hypothesis

H1: INSTR has strong effect on SCP.

On the basis of key hypothesis subsequent supportive hypothesis are framed

H1a : INSTR has strong effect on CPER

H2b :INSTR has strong effect on LPER

H3c : INSTR has strong effect on QPER

H2: COSTR has strong effect on SCP

H2a : COSTR has strong effect on CPER

H2b :COSTR has strong effect on LPER

H2c : COSTR has strong effect on QPER

H3: ASCSTR has strong effect on SCP

H3a : ASCSTR has strong effect on CPER

H3b : ASCSTR has strong effect on LPER

H3c : ASCSTR has strong effect on QPER

Proposed Model

The suggested model shown in figure 1 is based on two main constructs-

(i) SCS ; (ii) SCP.

To determine the effect of SCS on SCP the following dimensions of SCS are examined:

- Firms implement INSTR & attempt to cultivate innovative product.
- Firms essentially implement COSTR & try to get faith of end users.
- ASCSTR helps to overcome demand fluctuation in case of market volatility.
- Profitability and transactions key aspect of CPER.
- LPER helps in reducing the lead-time and shortens SC response time to gain more customer satisfaction.
- QPER is related to value for money for loyal customers of the firm (Tracey, 1996).

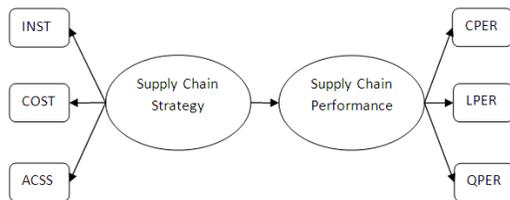


Figure 1: Proposed Model

Standard methods are adopted to collect data for research. To test proposed hypothesis statistically large data are accumulated from systematic data collection methods. A questionnaire is prepared and data is collected from small scale automobile industries through e-mail, Google form and personnel contact.

4. RESULT ANALYSIS

4.1 Reliability Analysis

To assess reliability amongst item of construct Cronbach's alpha is calculated and its value is within the threshold limit (greater than 0.7). All the construct of SCS and SCP have Cronbach's alpha greater than 0.7 indicate that all items are reliable. For INSTR value of alpha is 0.85 for 4 items, for COSTR, value of alpha is 0.87 for 4 items, for ASCSTR value of alpha is 0.78 for 6 items. Similarly for CPER value of alpha is 0.87 for 5 items, for LPER value of alpha is 0.77

for 3 items and for QPRE value of alpha is 0.88 for 5 items. On careful observation it is clear that all items are reliable and valid for research.

4.2 Correlation Analysis

Pearson's Correlations between SCS and SCP is shown in Table 1. The outcome shows that SCS dimension INSTR had weak correlations with SCP measurements especially with CPER and INSTR has negative correlation with LPER & QPER. The COSTR has very weak correlation with all dimensions of SCP. Similarly, ASCSTR has a moderate correlation with all dimensions of SCP.

	INSTR	COSTR	ASCSTR	CPER	LPER	QPER
INSTR	1.000					
COSTR	0.521**	1.000				
ASCSTR	0.033	0.244*	1.000			
CPER	0.117	0.162	0.462**	1.000		
LPER	-0.133	0.081	0.564**	0.567**	1.000	
QPER	-0.166	0.218	0.518**	0.292*	0.499**	1.000

*p value <0.05, **p value <0.01

Table 1: Correlation between SCS& SCP

4.3 SEM Path Modeling

An SEM model was employed to explore relationships which permit to establish a comparative power of associations amongst SCS &SCP variables through SEM path analysis done in Smart-PLS software. The association's amongst SCS & SCP model shown in Figure 2.

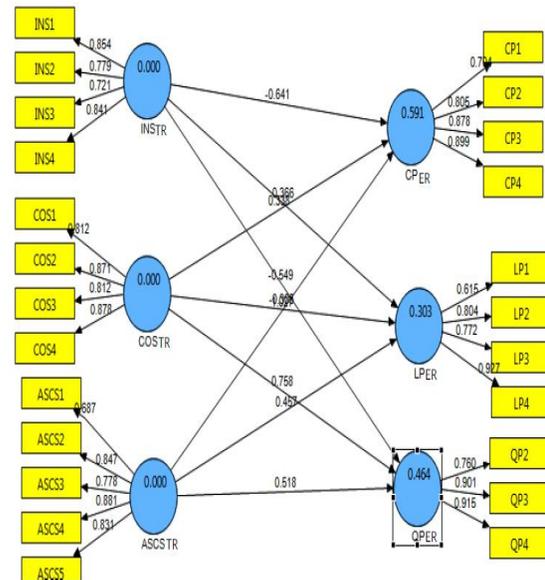


Figure 2: The SEM between SCS and SCP

The SEM is investigated through Smart-PLS. The coefficient of determination (R²) for CPER show that 51% variation is explain by SCS constructs, for LPER it is 30% and for QPER it is 46% as shown along with the total effect and hypothesis analysis in Table 2, 3 and 4.

To assess the effect of SCS on SCP constraints of CPER & the outcomes of current research shows in table 2. The INSTR has a negative effect on CPER while COSTR has a

weak effect on CPER while ASCSTR has a strong effect on CPER.

	Total Effect	Conclusion	Coefficient of Determination
INSTR => CPER	-0.66	H1a Not Supported	51%
COSTR => CPER	0.32	H1b Supported	
ASCSTR => CPER	0.75	H1c Supported	

Table 2: Results of SEM

The effect of SCS on SCP is shown in table 3. The INSTR has a very weak negative effect on LPER while the COSTR has a weak negative effect on LPER while ASCSTR has a strong effect on LPER.

	Total Effect	Conclusion	Coefficient of Determination
INSTR => LPER	0.38	H2a Supported	30%
COSTR => LPER	-0.30	H2b Not Supported	
ASCSTR => LPER	0.58	H2c Supported	

Table 3: Results Structural Model

The effect of SCS on SCP is shown in Table 4. The INSTR put opposite effect QPER although COSTR & ASCSTR has strong effect on QPER.

	Total Effect	Conclusion	Coefficient of Determination
INSTR => QPER	-0.77	H3c Not Supported	46%
COSTR => QPER	0.99	H3b Supported	
ASCSTR => QPER	0.87	H3c Supported	

Table 4: Results Structural Model

5. CONCLUSION

The outcome shows that assembling organizations ought to stress more noteworthy consideration regarding the COSTR and ASCSTR. Because of technological insurgency, fast development and lean generation aspects; SCM procedures have a more noteworthy level of adaptability to reinforce SCM executions. The aim of this investigation is to show there is strong effect of SCM practices on overall performance of the firm. The outcomes check a portion of the key affiliation and it bolsters

perspectives and confirmations by specialists in regards to the connections among SCS and SCP which brings about enhancing the business execution. It is additionally noticed that this examination endeavors to build up the writing survey and make a commitment to SCM rehearses. There are various confinements that impact the generalizability of this examination. In the first place, this paper restricted uniquely on small scale automobile industries. One of the restrictions of this single-division research is that the ends may not be acknowledged to different parts but rather it gives a rule to numerous businesses and area that would build the comprehension of store network execution. Second, the example choice depended on a comfort test, as opposed to an arbitrary likelihood test, which is frequently utilized for exploratory work. Third, the example spoke to a predetermined number of organizations in the single part industry.

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