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Strengthening Supply Chain Management Practices in SME through Organizational Infrastructural Support

Gaurav Sehgal

Associate Professor & Head, Department of Marketing and Supply Chain Management, Central University of Jammu, Jammu, Email: gsks2@rediffmail.com; sehgal.jammu@gmail.com, Mobile: +91 9419217212

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ABSTRACT

Firms can no longer effectively compete in isolation of their suppliers and other entities in the supply chain. As organizations seek to develop partnerships and more effective information links with trading partners, internal processes become interlinked and span the traditional boundaries of firms. The SMEs' view of SCM seems to be the exertion of power by customers and consequently is seen by SMEs' as a one-way process. Similarly, SMEs' do not employ SCM; rather they are managed at arm's length by large customers. The choice of organization's environment is a driver to SME organization's growth. SMEs' grow by pursuing a differentiated strategy and progressing through discrete stages of growth and consequently the ability of the entrepreneur to make structural and strategic changes may determine the growth prospects of business. However, in SMEs' the use and choice of technology is constrained by the entrepreneur's past experience and does not appear to be an active decision variable. Superior competitive strategies are essential if the SME is to achieve not only absolute growth rates but also growth relative to competitors and the market. This paper is one of the first attempts to study the Supply Chain Practices of Small and Medium Enterprises. The objective of this paper is to find out the impact of technical ambiguity on the Supply Chain Management Practices of the firm dealing with ago based products. The sample frame is SMEs of Jammu District in J&K State. Random samples of 323 respondents were selected from the said SMEs. The respondents were administered a structured questionnaire containing scales to measure the technical uncertainty and supply chain management practices of firms. After the data were collected, the scales were purified and exposed to EFA for assessing construct dimensionality. Thereafter, unidimentionality of the underlying latent constructs was examined using CFA. Due to the robustness and flexibility of the Structural Equation Modeling (SEM) in establishing CFA, this paper uses SEM to test both first-order as well as second-order CFA models.

1. Introduction

Supply Chain is the interrelated collection of processes and associated resources that starts with the acquirement of raw material and extends to the delivery of end items to the customer. It includes suppliers, manufacturers, logistics service providers, warehouses, distributors, wholesalers and all other entities that lead up to delivery to the final customer. In a wider perspective it may also include the suppliers to the vendors and the customers of the immediate customers. For typical marketing and sales operations the supply chain is more

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restricted and extends from purchasing the finished goods from the manufacturing facilities to supplying the immediate customer. In more advanced operations it may extend to the customer of the immediate customer. Now in this era of technology and competition the firms need to establish themselves as a strategic entity which is now a necessity. Successful Supply Chain Management (SCM) requires a fully integrative approach: employees, processes, technology, functions and even supply network partners need to be fully aligned and synchronized in order to build capability and thereby gain sustainable competitive advantage. Organizational approaches need to move to where there is north-south goal alignment but a focus on east-west process performance. This research paper tries to address these issues with concentrations on the Small and Medium Enterprises (SMEs) dealing in ago based products.

2. Review of Literature

Baratt (2004) defines supply chain as a network of facilities and distribution options that performs the functions of procurement of materials, transformations of these materials into intermediate and finished products and distribution of these finished products to the customers. Balsmeier and Voisin (1996) states that supply chains exist in both service and manufacturing organizations, although the complexity of the chain may vary greatly from industry to industry, and from firm to firm.

An organization can be viewed as a social system of interactions among entities constrained by shared norms and expectations (Bertrand, 1972). Entities in an organization occupy a number of positions and play different roles associated with these positions (Gross, 1958). How these roles related to each other defines the organization's structure and functions. In order to achieve its corporate objectives, organizations have to select and designate appropriate regulations to structure themselves in the right way to control and coordinate activities of interrelated roles. These structure and regulations constituting the underlying foundation or skeleton of an organization form its organizational infrastructure (Holsapple and Luo, 1996).

Several studies have attempted to identify the dimensions of OI. Henderson and Venkatraman (1999) classified OI components according to their functions in supporting organization's business process: (1) *Organizational Design*, which includes choices about organizational structure, roles, responsibilities, and reporting relationships; (2) *Processes*, which articulate the workflow and associated information flows for carrying out key organizational activities; (3) *Skills*, which indicate the choices about the capabilities of organizational members needed to accomplish the key tasks that support business strategy. Tapscott and Caston (1993) argued that OI encompasses issues such as sourcing work design, education, training, and human resource management policies. Thus, they proposed five major components of OI from the perspective of OI's functional objective: (1) Common vision is defined as the collective awareness of the supply chain's overall goal, and consistency in beliefs and assumptions across organizational boundaries. (2) Cooperation is referred to as an orientation toward the collective interest where individuals work together to complete tasks. (3) Empowerment is about employee's acquisition of relevant skills and knowledge in the work environment and the ability to make and execute business decisions independently. (4) Adaptation is defined as the flexibility level and the firm's willingness to different extent of modifications with the changing business environment. (5) Learning is the firm's objective of supporting individual learning and the establishment of norms that encourage change and innovation. Organizational infrastructure in this study includes three sub-constructs as presented in Table-1 below,

Table-1: Organizational Infrastructure Constructs and Sub-constructs

Organizational Infrastructure sub-constructs	Definitions	Literature
Top Management Support	The degree of top management's understanding of the specific benefits and then willingness to provide support to SCM.	Hamel and Prahalad, 1989; Dale, 1999; Balsmeier and Voisin 1996; Davenport and Prusak 1998; Goldman et al, 2002.
Collaborative Supportive Organizational Culture	The set of norms, values and organizational practices that encourage team work, cross-functional communication and cooperation.	Hart, 2004; Davenport and Prusak, 1998; Smith and Farquhar, 2000; Harrison, 1987.
Organizational Empowerment	Managerial style where managers share with the rest of the organizational members on their influence in the decision making process.	Mitchell, 1973; Vroom and Jago, 1988; Cole et al, 1993; Val and Lloyd, 2003; Cordova, 1982; Dachler and Wilpert, 1978; Harber et al, 1991.

Supply chain performance is a construct with a set of performance measures to determine the efficiency and / or effectiveness of a system (Beamon, 1998). Different researchers have attempted to assess supply chain performance in different ways, but most measures available in the literature are largely economic performance oriented. Harland (1996) suggests that intangible aspects of performance such as customer satisfaction should also be assessed. Garwood (1999) cautions that new measurement angle must be used on besides

the old yardsticks for supply chain performance such as purchase price variance, direct labor efficiency, equipment utilization, and production development budget are no longer adequate. A set of measures has been suggested and used in the literature to respond to the current requirements for a comprehensive supply chain performance measurement. Stevens (1990) suggested such items as inventory level, service level, throughput efficiency, supplier performance, and cost. Pittiglio et al. (1994) summarized four categories of measures, viz, customer satisfaction / quality, time, cost and assets. Spekman et al. (1998) suggested cost reduction and customer satisfaction. Narasimhan and Jayaram (1998) identified the customer responsiveness and manufacturing performance. Beamon (1998) recommend to use a bundle including several qualitative measures, namely, customer satisfaction, flexibility, information and material flow integration, effective risk management, and supplier performance.

3. Research Methodology

The technological characteristics of any firm affect the ability of a firm to deliver promptly to its customers and also improve their functionality. It directly affects the ordering schedule of the firm, thus creating variations in purchases. This, in turn, adversely affects the integration of the firm with its suppliers.

3.1 Theoretical Framework

In the present research paper the Technological Characteristics construct was presented with five items. Furthermore, the second construct, viz-a-viz, Supply Chain Management Practices was also a multi-dimensional construct with four sub-dimensions, viz, Supply Chain Performance (SCP) and Barrier Free Access (BFA) with five items each, Supply Chain Knowledge Dissemination (SCKD) with four items and Supply Chain Practices Application (SCPA) with six items. The detailed items have been listed in Annexture-II.

3.2 Hypothesis

Since the objective of this research paper was to study the impact of technological characteristics on the supply chain management practices adopted by the firm especially agro based SMEs, thus, the following hypothesis was framed:

H_1: Integrating Organizational Infrastructure strengthens supply chain management practices in SMEs .

3.3 Data Collection, Methodology and Instrument Administration

In order to collect precise data, a reliable measurement instrument is needed. To ensure brevity, understandability and content validity of the items, a rigorous validation procedure was adopted for preliminary test. A survey instrument in the form of a questionnaire was designed based on the constructs previously described and verified from the research methodology adopted for meeting the objectives stated for this research study. Respondents were asked to indicate, using a five-point Likert scale, on four varied themes. To ensure a reasonable response rate the questionnaire was sent in two phases in each industrial hub with a three months interval. In the first phase the questionnaires were sent to all 450 respondents inviting them to participate in the study with a brief description of the research, stating that all data collected would be used for academic research only and be handled confidentially. The sample area for the presented paper included industrial hubs of Jammu only. (The detailed list of industrial hubs / units surveyed have not been included in this research paper due to limitation of words).

3.4 Response Rate

The researcher received 261 non-deliverable/un-returned questionnaires in three months after the first phase of questionnaires were sent. There were another 21 replies declining participation to the study due to the following reasons: (1) no longer in the supply chain/procurement area (2) company policy forbidding disclosure of information. Therefore, during the three months period after sending out the questionnaires, a total of 240 responses were collected. Then in the second phase of questionnaires were sent one month later to those who had not yet responded for which a total of 189 responses were received. Of the total 18 responses received were incomplete and thus were rejected while data entry was administered, thereby making a total of 171 responses. Therefore, the final number of complete and usable responses for the study stood at 411 (240 in first phase and 171 in the second phase). It yielded a response rate of 91.33%, indicating a reasonable and acceptable response rate for surveys (Dillman 2000). Furthermore, it was analysed that among 411 respondents 88 respondents were either not associated with Supply Chain Management Practices and / or were out of the scope of the questions supplied for the study. Henceforth, a total of 323 responses were finally administered for further statistical analysis, which yielded a response rate of 71.77%.

3.5 Non-response Bias Assessment

Non-response bias could be one of the major concerns for survey research methodology. Because when non-response bias exists, the data collected might not be representative to the population the researcher was intended to study. Thus statistical procedures must be taken to assessment the non response bias of the sample. For this estimation it was assumed that the second wave response is a non-response for the first wave. Chi-square tests were used to make the comparisons of all the 323 responses. It was found that no significant difference in Number of employees in the firm (NoE), Position of the firm in the supply chain (PoSC), Respondent's Job Title (ReJT), Respondents Job Function (ReJF) in the firm and Number of Years of Service (ReYoS) of the respondent in the firm (ReYoS). Thus the researcher concluded that non-response bias was not a cause for concern for this study.

3.6 Methodology

As suggested by Gerbing and Anderson (1988), the researcher decided to test the measurement model first to avoid

possible interactions between the measurement and the structural models. Furthermore, a measure cannot be valid unless it is reliable, but a measure can be reliable without being valid. Bagozzi (1980) and Bagozzi & Philips (1982) suggested a instrument evaluation guideline that the instrument properties for reliability and validity include purification, factor structure (initial validity), unidimentionality, reliability and the validation of the second-order construct. The methods for each analysis were: Corrected-Item-to-Total-Correlation (for purification), Cronbach's Alpha (for reliability) and Confirmatory Factor Analysis (for first and second order factor structure and unidimensionality).

The measurement items (34 in total) were first purified by using Corrected-Item-to-Total-Correlation (CITC) scores with respect to a specific dimension of the construct. Following the guidelines constructed by Nunnally (1978). The reliability analysis of IBM® SPSS® 19.0 was used to perform CITC computation of each of the construct.

After purifying the items based on CITC, an Exploratory Factor Analysis (EFA) of the items in each construct was conducted for assessing construct dimensionality. IBM® SPSS® 19.0 was extensively used to explore potential latent sources of variance and covariance in the observed measurements. Principal Component Analysis (PCA) was used as factor extraction method and VARIMAX was selected as the factor rotation method. Also MEANSUB option was used in most cases to replace the missing values with the mean score for that item. All the items for each construct were EFA tested regardless for its existence in a proposed sub-dimension. To ensure high quality of instrument development process in the current study, 0.5 was used as the cut-off for factor loadings (Hair, et. al., 1992). The Kaiser-Meer-Olkin (KMO) measure of sampling adequacy was calculated for all dimension-level and construct-level factor analysis. This measure ensures that the effective sample size is adequate for the current factor analysis. The next step after item purification is to examine the unidimentionality of the underlying latent constructs. CFA is used to determine the adequacy of the measurement model's goodness-of-fit to the sample data. Due to the robustness and flexibility of the Structural Equation Modeling (SEM) in establishing CFA, this research uses SEM to test both first-order as well as second-order CFA models. Model data fitting was evaluated based on multiple goodness-of-fit indexes. Goodness-of-fit measures the correspondence of the actual or observed input (covariance or correlation) matrix with that predicted from the proposed model. For this study the researcher has used reports of several measures of overall model fit from IBM® SPSS® AMOS™ 19.0, such as, Goodness-of-fit-index (GFI), Adjusted-goodness-of-fit-index (AGFI), Comparative-fit-index (CFI), Normed-fit-index (NFI), Root-mean-square-residual (RMR) and Root-mean-square-error-of-approximation (RMSEA). Finally, the reliability of the entire set of items comprising the second order constructs was estimated using Cronbach's alpha. Following the guideline established by Nunnally (1978),

4. Research Findings and Discussions

4.1 Measurement Results

4.1.1 Organizational Characteristics

Organizational Infrastructure (OrgInf) is a multiple dimension construct measured by a total of 14 items representing the five items for Top Management Support (ToMgSu), five items for Organizational Culture Support (OCS) and four items for Organizational Empowerment Support (OES).

CITC scores indicates that the resulted Cronbach's Alpha for OrgInf equaled 0.841 (with ToMgSu=0.882; OCS=0.784 & OES=0.832), which was acceptable for the study, but CITC for separate dimensional constructs revealed that CITC scores for OCS1 (0.364) was below our cut off value of 0.5; thus we decide to remove it from further analysis. The second itinerary of reliability analysis after deleting OCS1, all the left over items under OCS dimension showed Cronbach's Alpha values above 0.5; also the overall Cronbach's Alpha value for the OrgInf construct was 0.838 which is acceptable for our study. The CITC for each item with its corresponding code name are shown in Table-2.

Table-2: CITC Item Purification results for Organizational Infrastructure

Organizational Infrastructure (OrgInf)				
Item Code	**CITC Initial**	**Cronbach's Alpha - Initial**	**CITC Final**	**Cronbach's Alpha - Final**
ToMgSu1	0.767	0.882	--	0.882
ToMgSu2	0.781		--	
ToMgSu3	0.761		--	
ToMgSu4	0.696		--	
ToMgSu5	0.584		--	
OCS1	0.364	0.784	*Item Dropped*	0.802
OCS2	0.613		0.649	
OCS3	0.662		0.678	
OCS4	0.604		0.585	
OCS5	0.592		0.584	
OES1	0.658	0.832	--	0.832
OES2	0.697		--	
OES3	0.631		--	
OES4	0.668		--	

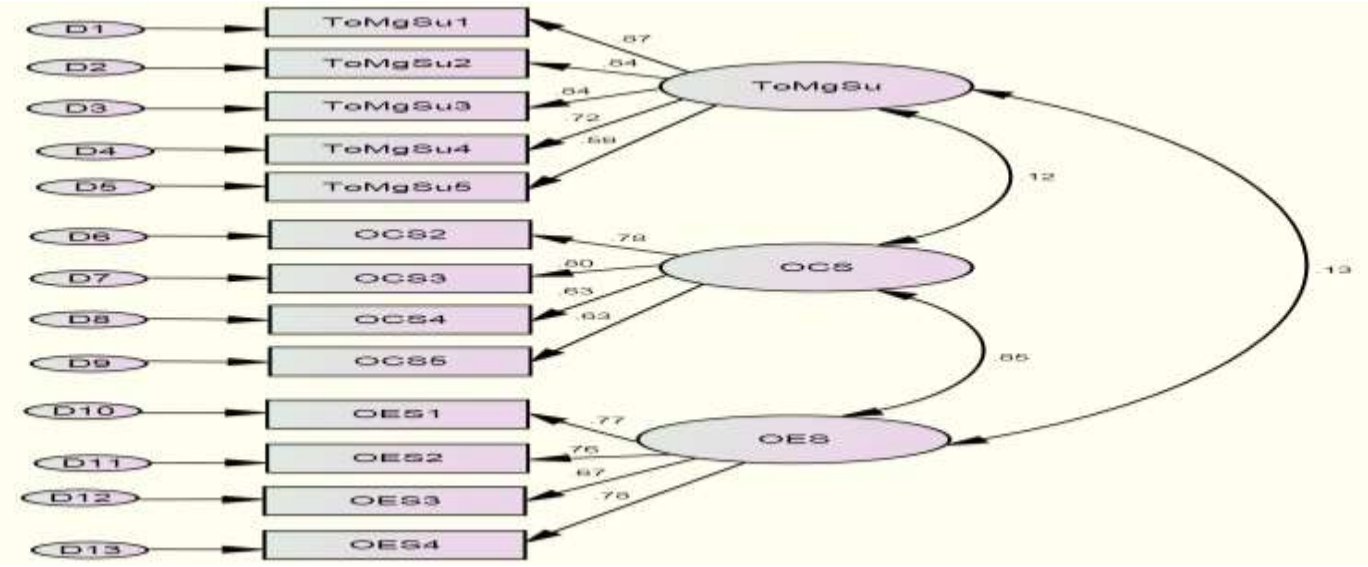
An Exploratory Factor Analysis (EFA) was then conducted using principal components as means of extraction and VARIMAX as method of rotation. The Kaiser-Meyer-Olkin (KMO) score of 0.874 indicated an acceptable sampling

adequacy. The cumulative variance explained by the two factors is 67.524%, two factors emerged from the factor analysis as expected with all factor loadings above 0.50. The EFA results are as shown in Table–3.

Table-3: EFA results for Organizational Infrastructure

Kaiser-Meyer-Olkin (KMO) : Measure of Sampling Adequacy Score = 0.874				
Item Code	**ToMgSu**	**OCS**	**OES**	**Cronbach's Alpha**
ToMgSu1	0.866			0.882
ToMgSu 2	0.869			
ToMgSu 3	0.859			
ToMgSu 4	0.798			
ToMgSu 5	0.718			
OCS2		0.789		0.802
OCS3		0.796		
OCS4		0.640		
OCS5		0.645		
OES1			0.786	0.832
OES2			0.757	
OES3			0.674	
OES4			0.789	
Eigen Value	*4.574*	*3.219*	*0.985*	
%age of Variance	*35.186*	*24.758*	*7.580*	
Cumulative %age of Variance	*35.186*	*59.944*	*67.524*	

The first order CFA model for OrgInf was then tested using IBM® SPSS® AMOS™ 19.0 with the statistics as presented in Table-4. The results indicated that although factor loading coefficients for the initial model were greater than 0.60, except for ToMgSu5 (0.59), the model fit was acceptable with indices: χ^2/df= 2.241; RMSEA= 0.062; RMR= 0.047; GFI= 0.935; AGFI= 0.905; NFI= 0.934 and CFI= 0.962; henceforth no modification was done on the first order model for Organizational Infrastructure (OrgInf), as shown in Table-4. The first-order CFA model thus obtained is as shown in Figure-1.



Figure–1: First Order CFA model for Organizational Infrastructure

Table-4: First Order CFA model fit results for Organizational Infrastructure

Model Fit	**χ^2**	**df**	**χ^2/df**	**RMSEA**	**RMR**	**GFI**	**AGFI**	**NFI**	**CFI**
Initial	138.922	62	2.241	0.062	0.047	0.935	0.905	0.934	0.962

In the next step, the second order model was tested to see if the three sub-constructs (ToMgSu, OCS & OES) underlie a single high order construct of OrgInf. The modified second-order model for OI is as shown in Figure-2. It was observed that high-order correlated effect was observed for ToMgSu1 (55.769) with OrgInf and also with OCS & OES; hence the item ToMgSu1 was deleted from the dimension construct of OrgInf. The resultant goodness-of-fit indices for the second-order construct showed an acceptable model fit as illustrated in Table-5. Furthermore all the factor loadings (λ) were above 0.50 and significantly important, hence no further modification was desired in the second-order CFA model thereafter.

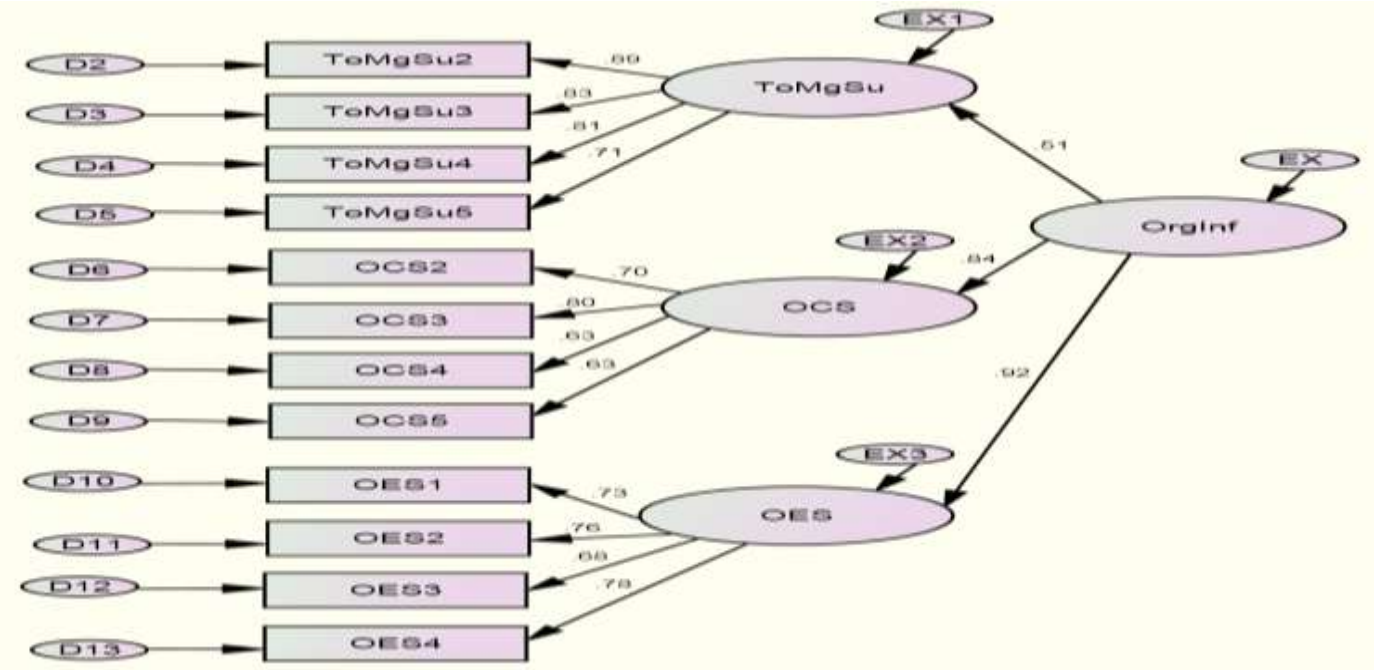


Figure – 2: Second Order CFA model for Organizational Infrastructure

Table-5: Second Order CFA model fit results for Organizational Infrastructure

Model Fit	χ^2	df	χ^2/df	RMSEA	RMR	GFI	AGFI	NFI	CFI
Initial	213.097	64	3.330	0.085	0.230	0.904	0.864	0.898	0.926
After Removing ToMgSu1	155.092	53	2.93	0.080	0.093	0.920	0.882	0.905	0.933

4.1.2 Supply Chain Management Practices

Supply Chain Management Practices (SCMP) has 20 items in 4 sub-dimensions: Supply Chain Performance (SCP) five items, Barrier Free Access (BFA) five items, Supply Chain Knowledge Dissemination (SCKD) four items and Supply Chain Practices Application (SCPA) six items.

The CITC analysis revealed that it had a perfect Cronbach's α value (0.900). The results are presented in Table-6. Furthermore, separate CITC analysis revealed that no item in each of the sub-constructs were below the CITC cut-off of 0.5.

Table–6: CITC Item Purification results for Supply Chain Management Practices

Supply Chain Management Practices (SCMP)				
Item Code	**CITC Initial**	**Cronbach's Alpha - Initial**	**CITC Final**	**Cronbach's Alpha – Final**
SSP1	0.702	0.925	--	0.925
SSP2	0.835		--	
SSP3	0.832		--	
SSP4	0.817		--	
SSP5	0.850		--	
BFA1	0.728	0.932	--	0.932
BFA2	0.840		--	
BFA3	0.874		--	
BFA4	0.842		--	
BFA5	0.871		--	
SCKD1	0.814	0.921	--	0.921
SCKD2	0.728		--	
SCKD3	0.866		--	
SCKD4	0.869		--	
SCPA1	0.586	0.893	--	0.893
SCPA2	0.698		--	
SCPA3	0.788		--	
SCPA4	0.695		--	
SCPA5	0.764		--	
SCPA6	0.753		--	

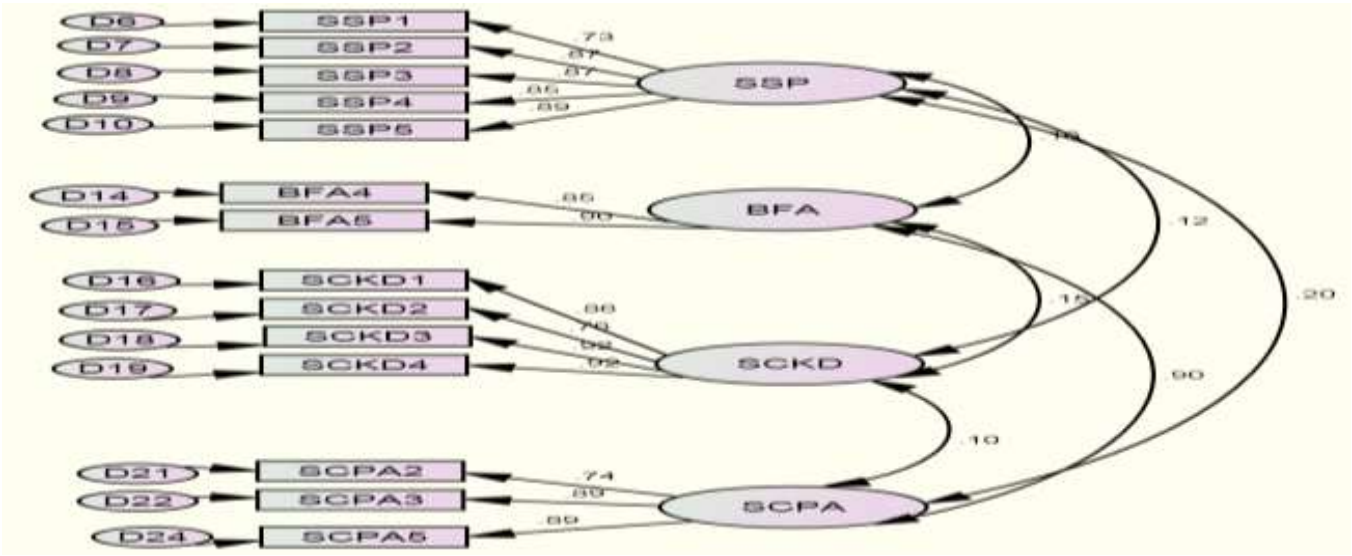
In the next step EFA was performed using principal component as means of extraction and VARIMAX as method of rotation. The KMO score of 0.884 indicated a good sampling adequacy. All items load on their respective factors and the result showed no cross-loadings. The EFA results have been tabulated in Table-7.

Table–7: EFA results for Supply Chain Management Practices

Kaiser-Meyer-Olkin (KMO) : Measure of Sampling Adequacy Score = 0.884					
Item Code	**SSP**	**BFA**	**SCKD**	**SCPA**	**Cronbach's Alpha**
SSP1	0.796				0.925
SSP2	0.895				
SSP3	0.892				
SSP4	0.875				
SSP5	0.902				

BFA1		0.763			0.932
BFA2		0.882			
BFA3		0.919			
BFA4		0.901			
BFA5		0.867			
SCKD1			0.898		0.921
SCKD2			0.832		
SCKD3			0.922		
SCKD4			0.921		
SCPA1				0.709	0.893
SCPA2				0.799	
SCPA3				0.835	
SCPA4				0.735	
SCPA5				0.833	
SCPA6				0.804	
Eigen Value	*7.908*	*3.744*	*3.144*	*0.871*	
%age of Variance	*39.540*	*18.722*	*15.719*	*4.354*	
Cumulative %age of Variance	*39.540*	*58.263*	*73.982*	*78.336*	

The first order CFA model for SCMP was then tested using IBM® SPSS® AMOS™ 19.0 with the statistics as presented in Table-8. The results indicated that although factor loading coefficients for the initial model were greater than 0.60 with the least at 0.67 for item SCPA4, but the model fit was having poor indices: χ^2/df= 7.846; RMSEA= 0.146 ; RMR= 0.081 ; GFI= 0.729; AGFI= 0.653; NFI= 0.804 and CFI= 0.824 ; henceforth modification indices were utilized for modifications in the model which indicated a chance for model improvement as a result from possibility of error correlation (as shown in Table-8); after removing the correlated affects the final first-order CFA model thus obtained is as shown in Fig-3. Thereafter, modification indices indicated that there was no need for any modifications in the model constructs. The first-order CFA model for Supply Chain Management Practices (SCMP) is as shown in Fig-3. Clearly, the factor loadings (λ) were acceptable with the lowest being 0.73 for the item SSP1.



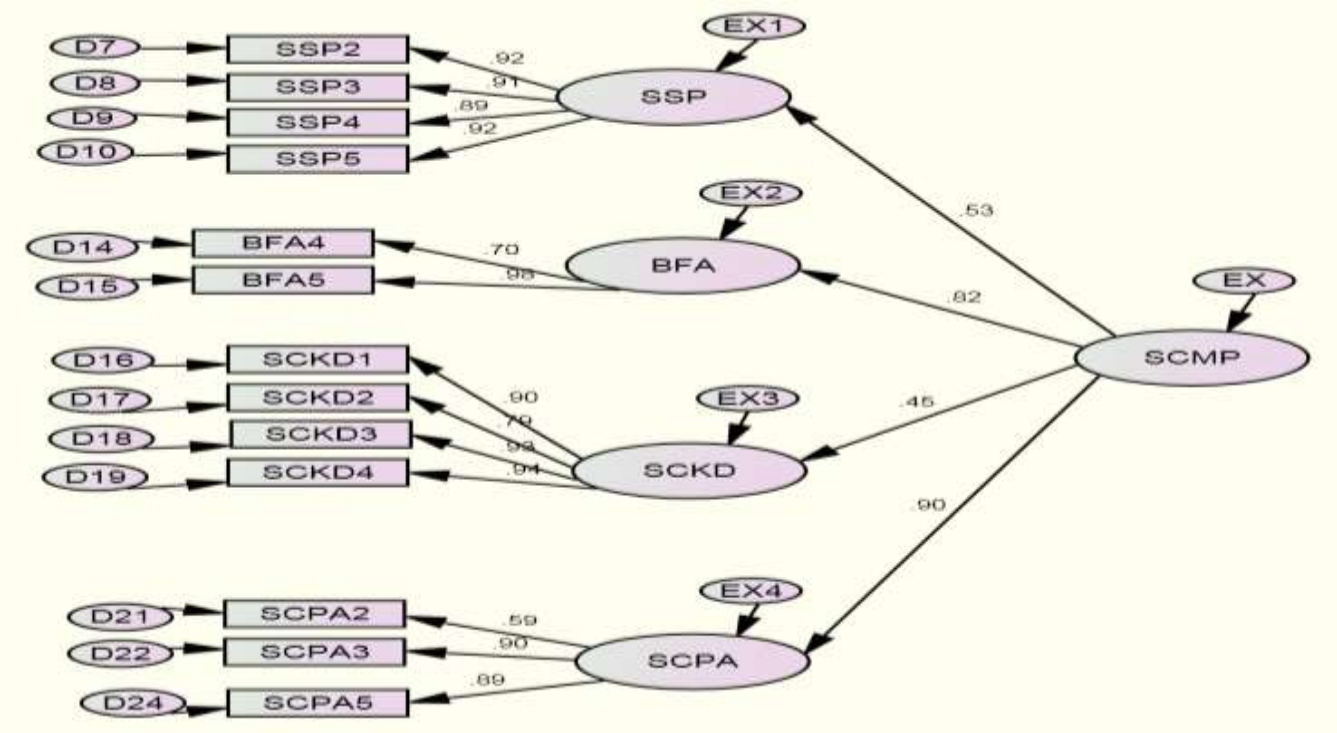
Figure–3: First Order CFA model for Supply Chain Management Practices

Table–8: First Order CFA model fit results for Supply Chain Management Practices

Model Fit	χ^2	df	χ^2/df	RMSEA	RMR	GFI	AGFI	NFI	CFI
Initial	1286.779	164	7.846	0.146	0.081	0.729	0.653	0.804	0.824
After Removing BFA1	877.013	146	6.007	0.125	0.073	0.771	0.703	0.852	0.873
After Removing BFA1, BFA3	640.790	129	4.967	0.111	0.070	0.815	0.754	0.875	0.897
After Removing BFA1, BFA3, BFA2	455.053	113	4.027	0.097	0.070	0.846	0.791	0.899	0.921
After Removing BFA1, BFA3, BFA2, SCPA6	304.717	98	3.109	0.081	0.062	0.897	0.857	0.925	0.947
After Removing BFA1, BFA3, BFA2, SCPA4	198.817	84	2.367	0.065	0.056	0.926	0.894	0.947	0.969
After Removing BFA1, BFA3, BFA2, SCPA1	148.053	71	2.085	0.058	0.045	0.942	0.914	0.958	0.978

In the next step, the second order model was tested to see if these four sub-constructs (SSP, BFA, SCKD & SCPA) underlie a single high order construct of SCMP. It was observed that high-order correlated effect was observed for SSP1; hence this

item of the sub-construct was deleted from the study model. The resulting second-order CFA model for SCMP Characteristics is as shown in Figure-4; thereafter no further modification in the model was desired. The resultant goodness-of-fit indices for the second-order construct are as illustrated in Table-9.



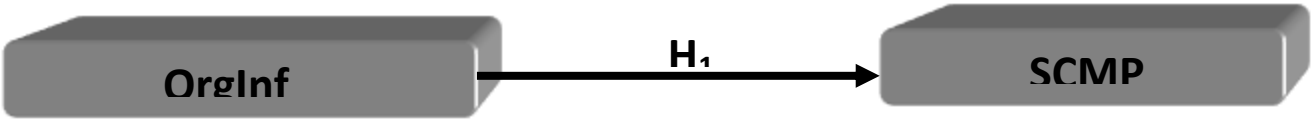
Figure–4: Second Order CFA model for Supply Chain Management Practices

Table–9: Second Order CFA model fit results for Supply Chain Management Practices

Model Fit	χ^2	df	χ^2/df	RMSEA	RMR	GFI	AGFI	NFI	CFI
Initial	360.737	76	4.747	0.108	0.291	0.851	0.794	0.899	0.918
After Removing SSP1	199.959	74	2.702	0.065	0.044	0.865	0.809	0.910	0.927

4.2 Structural Model for Hypothesis

The structural model for the proposed hypothesis H_1, the constructs of Organizational Infrastructure Characteristics (OrgInf) has been regarded as Independent Variables (Exogenous); whereas Supply Chain Management Practices Implementation (SCMP) has been regarded as Dependent Variable (Endogenous).



Figure–5: Structural Model for proposed Hypotheses

The model was tested using one-tail test, a t-value greater than 2.33 is significant at the level of 0.01; and a t-value greater than 1.65 is significant at 0.05; and a t-value of 1.28 is significant at the level of 0.10. The t-value is calculated from the estimates of the model, where t-value is given as model path estimate (parameter) divided by the standard error. The results for the proposed hypotheses and propositions are as given in Table-10.

Table–10: Structural model Hypothesis Testing Results

Hypotheses	Relationship	Standardized Estimate	t-value	p-value	Significance (Yes/No)
H_1	OrgInf → SCMP	0.34	= (0.292/0.061) = 4.787	< 0.05	YES

The structural model for the proposed hypothesis is as presented in Annexure-I.

5. Conclusion

This relationship between Organizational Infrastructure (OrgInf) and Supply Chain Management Practices Implementation (SCMP) was found to be significant with relationship strength of 0.34. It postulates that organizational factors have substantial impacts on the successful implementation of supply chain management practices in the firm. Numerous researchers have echoed similar arguments (e.g. Davenport et al, 1998, Meso and Smith, 2000 Hart, 2004). Support for top management can facilitate SCMP through distribution of resources, authority and information. Without the involvement of top executives, it would be extremely difficult to coordinate the knowledge operations of various functions partners. Similarly, we confirmed the importance of a favorable organizational culture. A collaboration supportive culture encourages employee to generate new ideas at work and facilitates an environment that motivates other employees in the organization. As what is argued by Wyer and Mason (1999), managing an organization is a people business. Empowerment of employees give them freedom and authority to their work, thus they are willing to participate in supply chain related activities. The test result implies that firms should work to optimize their organizational infrastructure and should establish a employee friendly environment to be able to implement SCM more effectively and efficiently.

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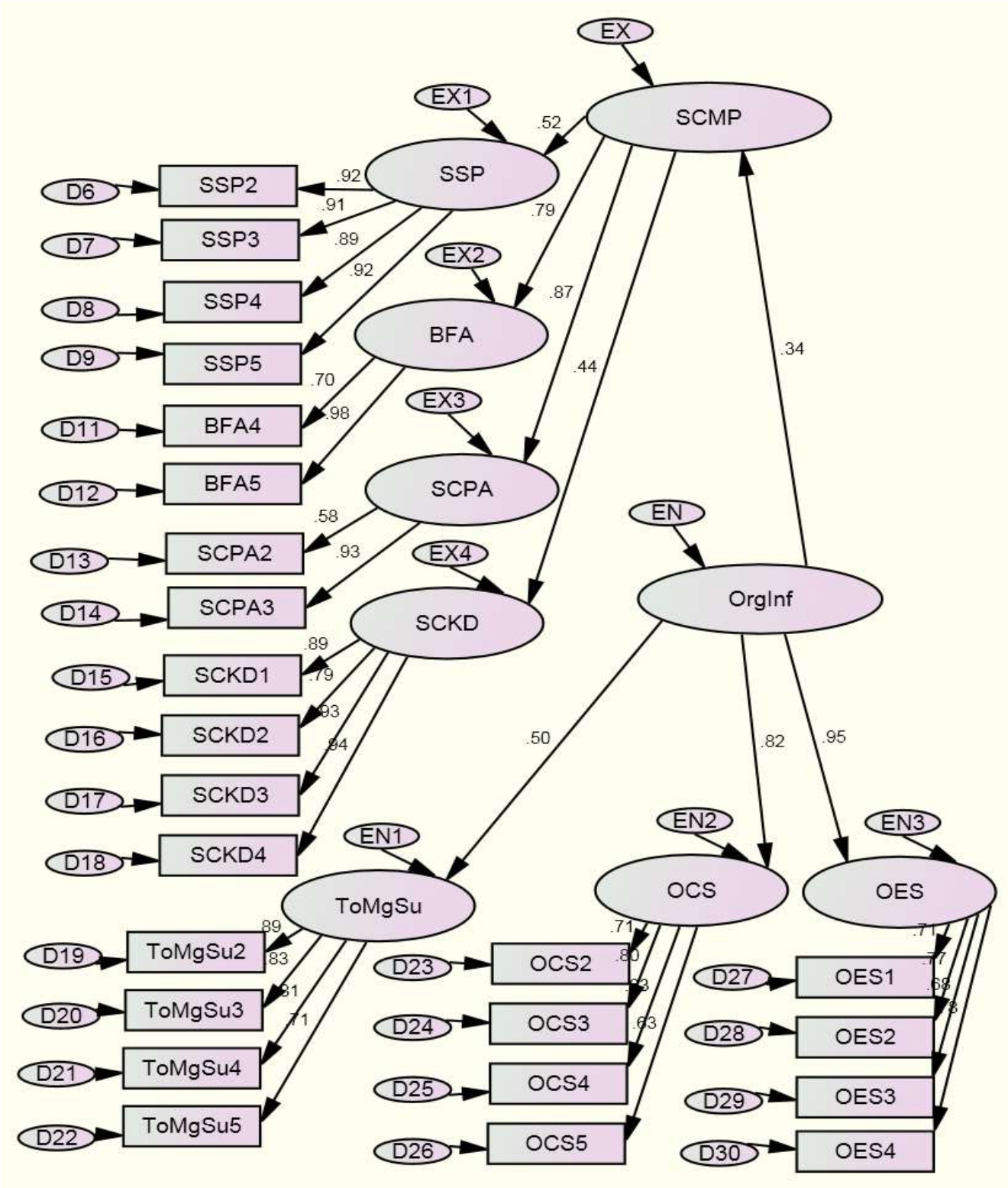
Annexure–I



Figure–6: Structural Model for testing of Hypothesis (H_1)

Annexure–II
(Parameters Along with Coding Used during Data Analysis)

S. No	Category Code	Sub-Category Code	Item Code	Parameters
1	OrgInf	ToMgSu	ToMgSu1	Our firm's top management understands the utility of SCM.
2			ToMgSu2	Our firm's top management considers SCM as an important tool.
3			ToMgSu3	Our firm's top management supports the usage and implementation of SCM tools.
4			ToMgSu4	Our firm's top management acts as an active member for SCM groups in the State
5			ToMgSu5	Our firm's top management is trying (has already tried) to implement SCM utilities.
6		OCS	OCS1	Our firm's organizational culture supports decentralized structure.
7			OCS2	Our firm's organizational culture encourages employees learning.
8			OCS3	Our firm's organizational culture encourages employees help each other.
9			OCS4	Our firm's organizational culture encourages team-work for problem solving.
10			OCS5	Our firm's organizational culture evaluates the employees on team-basis most of the time.
11		OES	OES1	Our firm's organizational empowerment encourages employees to innovate at work place.
12			OES2	Our firm's organizational empowerment provides freedom to employees at their work place.
13			OES3	Our firm's organizational empowerment facilitates employees to have easy access to SCM methodology.
14			OES4	Our firm's organizational empowerment encourages employees at every levels to participate in work plans.
15	SCMP	SSP	SSP1	Our firm implements SCM because with it our firm wishes to collaborate on the benefits obtained from its usage.
16			SSP2	Our firm implements SCM because with it our firm wishes to strengthen relationship with our trading partners.
17			SSP3	Our firm implements SCM because with it our firm believes that our relationship with trading partner is profitable.
18			SSP4	Our firm implements SCM because with it our firm and our trading partner can share risks that occur in SCM.
19			SSP5	Our firm implements SCM because with it our firm can have harmonious relationship with our trading partner.
20		BFA	BFA1	Our firm believes that with SCM implementation our firm can handle non-standard orders.
21			BFA2	Our firm believes that with SCM implementation our firm can meet special customer requirements.
22			BFA3	Our firm believes that with SCM implementation our firm can produce products with multiple features.
23			BFA4	Our firm believes that with SCM implementation our firm can rapidly adjust to production capacity in response to the change in customer demand.
24			BFA5	Our firm believes that with SCM implementation our firm can introduce new products quickly.
25		SCKD	SCKD1	Our firm believes that with SCM implementation our firm can help exchange information with our suppliers.
26			SCKD2	Our firm believes that with SCM implementation our firm can help maintain long-term partnerships.
27			SCKD3	Our firm believes that with SCM implementation our firm can help provide stable procurement relationships.
28			SCKD4	Our firm believes that with SCM implementation our firm can share market information among departments within the firm.

29		SCPA	SCPA1	Our firm believes that with SCM applications help to have integrated inventory management system.
30			SCPA2	Our firm believes that with SCM applications help to have integrated logistics support system.
31			SCPA3	Our firm believes that with SCM applications help to have automated order refilling system.
32			SCPA4	Our firm believes that with SCM applications help to have automated accounting system.
33			SCPA5	Our firm believes that with SCM applications help to have integrated data sharing system.
34			SCPA6	Our firm believes that with SCM applications help to have synchronized production schedules.

Abbreviations:

OrgInf → Organizational Infrastructure ; SCMP → Supply Chain Management Practices Implementation; SSP → Supply Chain Performance from its implementation; BFA → Barrier Free Supply Chain Implementation ; SCKD → Supply Chain Knowledge Dissemination from its implementation ; SCPA → Supply Chain Practices Application implementation

About the Author:

Dr. Gaurav Sehgal is presently on deputation as Associate Professor in the School of Business Studies. He is presently heading the Department of Marketing and Supply Chain Management, Central University of Jammu, Jammu, J&K State. He has attained his Doctoral Degree from University of Jammu in the year 2012. He has done M.Sc. in Electronics with specialization in IC Technology and Advanced Microprocessors & Microcontrollers from University in Jammu, besides holding MBA degree from IGNOU and specializes in Operations Management. Prior to his deputation he was working as Assistant Professor (Stage-II) at Baba Ghulam Shah Badshah University, Rajouri, J&K State. Dr. Gaurav Sehgal has to his credit a Major Research Project from UGC for an amount of 10.43 lakhs (pre-revised) and also has been successful in getting Community College for the University from UGC tuning to an amount of 72 lakhs. He also received a grant of 2 lakhs for Minor Research Project from Central University of Jammu in April 2017. He has about 19 research publications to his credit and has also attended more than 25 seminars and conferences. He has also delivered extension lectures on Project Management and Personality Development at various Govt. establishments, including Air Force, District Administration, MES, etc. he has also authored two Chapters in the Self learning Materials for M.Com students of University of Jammu. He presently teaches Research Methodology, SPSS and Operations Management. His area of interest in research includes: Knowledge Management, Technology Management and Supply Chain Management. Email: gsks2@rediffmail.com; sehgal.jammu@gmail.com; Mobile: +91 9419217212