Modeling Demand Chain Management (DCM) Processes for Indian Retailing

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Abstract

The study aims at determining the core variables of demand chain management (DCM) which should ideally be the focus of senior management in order to accomplish higher organisational performance through improved supply chain practices. The research follows development survey based on descriptive-analytical research design. It initially involves identification and analysis of influential factors of implementation of DCM practices. Then these variables are organised into interpretive structural questionnaire given to ten experts-five academics and five retail supply chain experts. Subsequently, in order to obtain the enablers and outcomes the factors are analysed using interpretive structural modeling (ISM) methodology. The study concentrates upon identifying the enablers and outcomes of the DCM practices implemented by the retailers in a supply chain. The major findings of the paper are: top management commitment and support in SC is the most significant enabler with the highest driving power i.e., they must be committed to and support the adoption of DCM practices. Besides this, the variables that management must consider significant are collaborative relationship with suppliers, internal integration, coordination, and information management. Further marketing orientation seems to be playing key role as enabler. The novelty of the paper lies in the study of an emerging SC philosophy i.e. DCM and its key practices per se. It has rarely been studied from a theory building perspective hitherto. Moreover, ISM-based approach is applied for the first time to study the DCM practices and its drivers vis-à-vis dependents. The variables possessing higher driving power in ISM needs to be dealt meticulously with on top priority because sooner or later they are going to influence the variables dependent on them.

Keywords: Demand Chain Management (DCM), Supply Chain, Performance, Interpretive Structural Modeling (ISM), Retailing, India

Introduction

Demand-supply chain management is not just another management fad, but a reality and the need of the hour. In the recent past DSCM manifested itself as a dominant basis of competitive advantage (Christopher & Ryals, 2014). In their seminal work Christopher and Towill (2001) posited that the real competition lies between the supply chains of competing firms and not between the firms directly now. Sensing the vitality of the SC functions companies began reorganising logistics and purchasing functions into supply chain management organisation. Such business model emphasised on cost reduction and efficiency enhancement in order to reward customer with reduced prices. This notion led the organisations to assume that to be efficient at supplying what customer needs at reduced prices is the ultimate goal of organisation (Walters & Rainbird, 2004).

SCM stands out at moving products towards end user efficiently, however, Langabeer and Rose (2002); Walters and Rainbird (2004); Soliman and Youssef (2001) maintain that such efficiency has gradually became the bare minimum requirement for business operations but proved inadequate to ensure higher level of customer service and enhancement in company's competitive position because competitors can saturate the market with lower-cost substitute if there is a price war based on cost reduction and efficiency (Mohan & Deshmukh, 2012). As a result, several markets appear commoditised with the prices being driven down and in turn the cost and margins. This clearly reflects that mere overarching efficiency cannot ensure the sustainable value delivery to consumer. The managers should grasp that it is not the trade-off between the efficiency and effectiveness but the combination of the best proposition of the two with customer focus.

It is the burgeoning emphasis on customer centric business philosophy by firms which led to rethink upon their disintegrated functional thinking or a silo based functional coordination. The firms across industry experienced a dire need to demolish such functional silos especially between the complementary functional areas such as marketing and supply chain management where the former looks into the demand creation and the later refers to demand

fulfillment aspect. Keeping their nature into account they are required to be integrated (Christopher & Ryals, 2014; Juttner & Christopher, 2013; Juttner, Christopher & Baker, 2007). This synergistic combination of the two gradually became a powerful impetus for evolution of emerging domain of demand chain management (DCM) which ensures a judicious blending between the front-end vis-à-vis the back-end of the organisation.

Research Problem

The point of departure for the study is set with the research gap and problem definition. The proposed study is poised to have two pronged perspective on the problem definition i.e., literature and pragmatic. After a brief literature review the researcher found that several studies (Wook Kim, 2006; Tracey, Vonderembse, & Lim, 1999; Koufteros, 1995; Innis & LaLonde, 1994; Miles & Snow, 1978) could establish a relationship between enhanced supply chain management practices and organisational performance. However, market orientation distinguishes between supply chain and demand chain (Christopher, 1998; Rainbird, 2004; Hilletofth & Hilmola, 2008; Santos & D'Antone, 2014; and Christopher & Ryals, 2014), thus DCM requires a different set of strategies. This calls for identification of variables comprising enablers and antecedents of DCM implementation and thereby establishing the interrelationship among them.

The pragmatic perspective to the underlying research problem emanates from KSA's European Consumer Outlook 2003 survey which reveals that most of the apparel customers remain frustrated due to retailers reluctance to invest in consumer intelligence, inadequate use of Point-of-Sale (POS) data, no knowledge about back orders/missed sales, lack of integration between the channel partners etc. to point a few. Experts believe that the solution lies in DCM philosophy, if implemented well. It is further observed that majority of the research on and implementation of demand chain management (DCM) took place in developed market, that too centred on manufacturing and allied industries. Therefore, this study observes it as a major missing link to further the study in Indian context especially in rapidly growing apparel retail sector. The researcher identified significant differences in the implementation of DCM practices with special reference to Indian retail sector.Having learnt from the problem statement the study aimed at identifying DCM variables and establishing relationship among them.

Research Objectives

To be precise, the aforesaid problem statement reveals that despite its prominence as business philosophy DCM could not secure the adequate attention from both academics vis-à-vis practitioner and therefore, left several questions unaddressed about the identification of the underlying theoretical constructs, model building and operationalisation thereof. This paper is aimed to

- identify the variables of demand chain management adoption in organisation;
- establish relationship among the identified variables;
- point out DCM practices followed by Indian apparel retailers; and
- exhort the academic vis-à-vis managerial implications of this research.

The upcoming core section schema of the paper begins with identification of variables as key practices to implement DCM in Indian organised apparel retailing followed by brief note on ISM technique. Subsequently, MICMAC analysis, ISM digraph, and model are presented to exhibit the driving power and dependence of the variables. Finally, the results of the research are presented followed by discussion and conclusion.

METHODOLOGY

In order to meet aforesaid objectives the study utilised ISM technique. The interpretive structural modelling (ISM) technique acts as a tool for identification of relationship among specific items, which define a problem or an issue (Warfield, 1974; Sage, 1977, Sushil, 2012). In other words, it helps simplifying the poorly articulated mental map into organised model (Sushil, 2012; Yadav, 2014; Yadav, Sushil & Sagar, 2015). Therefore, in this research, the variables of DCM practices adopted by Indian apparel retailers have been analysed using the ISM approach, which shows the interrelationship of variables and their driving power vis-à-vis dependence. Moreover, with the help of ISM an order has been imposed on the complexity of the variables which could act as a guide in the implementation of DCM practices.

Identification of DCM Practices Variables

For the execution of this model there were 12 key variables under "antecedents" and "outcome" categories. In the proposed ISM, to identify Demand Chain

Management (DCM) implementation practices variables in Indian organised apparel retailing, and to establish mutual relationship among them, thorough literature scan has been done and SSIM matrix was obtained based on responses of the experts both from academic and practicing community to assign driver and dependence powers to the variables under consideration. The study was conducted among ten experts, five from academics and five from apparel retail experts. At a later stage the responses were analysed to construct ISM based model the results of which are subject to empirical testing through Structural Equation Modeling (SEM) technique which is a part of theory testing (Charan, Shankar & Baisya, 2008).

Table 1: Variables for ISM Model

S.No.	Demand Chain Management Practices Variables
	Antecedents of DCM Practices
1	Flexibility in the System
2	Effective Information Sharing and Trust (Information Management)
3	Customer Service leading to Relationship (CSM-CRM)
4	Collaborative Relationship with SC Partners (SRM)
5	Top Management Commitment and Support
6	Cost and Quality of Service
7	Efficient Supply Chain
8	Internal Integration/Coordination
9	Marketing Orientation
	Outcomes Variables from DCMP implementation
10	Organisational Performance
11	Supply Chain Responsiveness/ Agility
12	Differential Advantage

The process of variables identification initiated with a thorough literature survey of approximately select 150 papers from the various journals available on Web of Science and Google Scholar in the area of SCM, Marketing and Operations Management area. The criterion for selection was that the papers should be related to the theories and cases presented by scholars working on DCM. However, most of the papers on DCM are either case based or qualitative studies and therefore, a need for identification of DCM practices variables was felt. From these papers around 18 variables were listed and presented for discussion before academic experts and later only 12 variables (vide Table1) were retained based on their relevance and validity. With the responses collected from experts about the DCM practice and their interrelationship using SSIM a summary was made followed by final analysis.

Antecedents and Outcome of DCM Practices

The works on demand chain management are predominantly qualitative ones (Christopher, 1998; Rainbird, 2004; Hilletofth & Hilmola, 2008; Mohan and Deshmukh, 2012) and thus, there has been an ambiguity about constructs and underlying variables. The aforesaid study is an attempt to identify the variables using the extant literature in the domain and expert opinion method and thereby establishing interrelationship among them. These well identified antecedent variables of demand chain management will help managers in apparel retailing attain greater customer satisfaction with their offering on the one hand and improved organisational performance on the other.

The variables are listed in Table 1. Precisely, these variables may be described from research perspective. Broadly these variables were indicatively classified into antecedent variables and outcome variables. To begin with antecedents; 1) flexibility in the system refers to the capability of changing from one task to another rapidly when changing conditions are defined ahead of time; 2) information management/sharing refers to a mutually trust based process of acquiring, sharing, analysing and responding to demand/supply related information obtained through ICT tools and techniques; 3) customer service management leading to relationshipis defined as a process of providing significant value-added benefits to the supply chain in the cost effective way leading to long term customer relations. In other words, it can be defined as an enhanced ability to provide value added benefits to the customers in terms of fulfilling customer demand and information needs. 4) Collaborative relationship with supply chain partners indicates an interface between the focal firm and its suppliers with focus on upstream interaction; 5) top-management commitment and support is the Degree to which the management of a firm expresses willingness to support with its clear vision and shared values in supply chain; 6) cost and quality of service are the extent to which a firm establishes a trade-off between cost and quality so as to ensure services of superior quality at lowest possible cost; 7) efficient supply chain is an internal standard of performance (Pfeffer & Salancik, 1978) and is approximately a construct "for doing the things right" or the best ways the activities are performed so that overall cost involved and time taken are reduced; 8) internal integration/coordination is the quality of the state of collaboration that exists among departments that are required to achieve unity of efforts by the demand of environment; and 9) marketing orientation refers to an organisational culture in which all employees

are committed to the continuous creation of values for customer through three behavioural components: customer orientation, competitor orientation, and inter-functional coordination.

The outcome variables are the variables resulting from the implementation of DCM practices. They are 10) organisational performance is a measurement metric revealing overall effectiveness of an organisation in financial, marketing and operational terms; 11) supply chain responsiveness/agility can be defined as the ability of an organisation to respond rapidly and efficiently to changes in customer demand both in terms of variety and volume to a volatile marketplace particularly when the conditions are not defined well in advance; and 12) differential/ competitive advantage is an edge over competitors that gives a firm a favorable position in the marketplace.

ISM is an analytical method applied for identifying and summarising relationship among specific variables which defines a problem or an issue (Warfield, 1974; Sage, 1977; Sushil, 2012).It provides us means by which order can be imposed on the complexity of such variables (Venkatesh, Rathi, & Patwa, 2015; Sushil, 2012; Soti, Shankar & Kaushal, 2010; Jharkharia and Shankar, 2005; Mandal & Deshmukh, 1994). This section deals with the brief explanation of ISM methodology and its modus operandi followed by directed graph or digraph, MICMAC analysis and ISM-based model. There are several steps involved in applying ISM methodology which begins with preparing SSIM and ends at MICMAC analysis.

Structural Self Interaction Matrix (SSIM)

In order to develop contextual relationship among the variables of DCM practices ISM technique proposes to use nominal group technique, brain storming etc. Thus ten experts both from academia and industry were consulted before establishing these relationships among them. These experts are seasoned persons in their domain i.e., supply chain management and marketing and command an average experience of about 12 years. The analysis of the DCM practices variables was done based on leads to type contextual relationship. In other words variable one leads to variable five and so on. Following symbols and rules were used to develop such contextual relationship among the variables under the study;

Put any one based on the suitability

V= Variable i will help achieve variable j

A= Variables j will be achieved by variable i

X=Variable i and j will help achieve each other

O=Variable I and j are unrelated

The use of these symbols (V, A, X, O) in SSIM (vide Table 2) may be elucidated through following examples:

Variable 2 will help achieve variable 9. It means that as organisations better their information management practices they start developing marketing orientation. Therefore, the relationship is denoted by "V" in the SSIM (Table 2).

Variable 1 can be achieved by variable 8; i.e. "flexibility in the system" would help achieve variable "internal integration/coordination" (Table 2). It means the more the system is flexible the sooner it will opt for internal coordination.

Likewise the other two symbols were also assigned in the SSIM in Table 2.

Reachability Matrix

When the SSIM is transformed into a binary matrix by replacing V, A, X, and O with 1's and 0's as per rules,the matrix obtained is called the initial reachability matrix. The rules of replacement of 1's and 0's are hereunder;

If the (i, j) entry in the SSIM is V then the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry becomes 0.

If the (i, j) entry in the SSIM is A then the (i, j) entry in the reachability matrix becomes 0 and the (j, i) entry becomes 1.

If the (i, j) entry in the SSIM is X then the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry becomes 1.

If the (i, j) entry in the SSIM is O then the (i, j) entry in the reachability matrix becomes 0 and the (j, i) entry becomes 0.

In this way the initial reachability matrix so obtained is further converted into final reachability matrix (vide table 3) incorporating the transitivity of the ISM methodology. It means if A is related to B and B is related to C then A must be related to C. This is the underlying concept of transitivity.

Table 2: Structured Self Interaction Matrix (SSIM)

	Structured Self Interaction Matrix (SSIM)												
	SN	**Variables (Column-j)**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**
Rows (i)	1	Flexibility in the System	V	X	V	V	A	V	X	X	X	V	X
	2	Effective Information Sharing and Trust (Information Management)	V	V	V	X	X	V	O	X	V	V	
	3	Customer Service leading to Relationship (CSM-CRM)	V	O	V	X	X	V	V	X	O		
	4	Collaborative Relationship with SC Partners (SRM)	V	A	V	O	X	V	A	X			
	5	Top Management Commitment and Support	V	V	V	V	V	V	X				
	6	Cost and Quality of Service	V	V	V	V	O	X					
	7	Supply Chain Responsiveness/ Agility	V	X	V	V	A						
	8	Internal Integration/Coordination	V	V	V	X							
	9	Marketing Orientation	V	O	V								
	10	Organisational Performance	X	X									
	11	Efficient Supply Chain	V										
	12	Differential Advantage											

Table 3: Final Reachability Matrix

VN	Variables	1	2	3	4	5	6	7	8	9	10	11	12	Driving Power
1	Flexibility in the System	1	1	1	1	1	1	1	0	1	1	1	1	11
2	Effective Information Sharing and Trust (Information Management)	1	1	1	1	1	0	1	1	1	1	1	1	11
3	Customer Service leading to Relationship (CSM-CRM)	0	0	1	0	1	1	1	1	1	1	0	1	8
4	Top Management Commitment and Support	1	0	0	1	1	0	1	1	0	1	0	1	7
5	Collaborative Relationship with Supply Chain Partners (SRM)	1	1	1	1	1	1	1	1	1	1	1	1	12
6	Cost and Quality of Service	1	0	0	1	1	1	1	0	1	1	1	1	9
7	Supply Chain Responsiveness / Agility	0	0	0	0	0	1	1	0	1	1	1	1	6
8	Internal Integration / Coordination	1	1	1	1	0	0	1	1	1	1	1	1	10
9	Marketing Orientation	0	1	1	0	0	0	0	1	1	1	0	1	6
10	Organisational Performance	0	0	0	0	0	0	0	0	0	1	1	1	3
11	Efficient Supply Chain	1	0	0	1	0	0	1	0	0	1	1	1	6
12	Differential Advantage	0	0	0	0	0	0	0	0	0	1	0	1	2
	Dependence	7	5	6	7	6	5	9	6	8	12	8	12	

Level Partitions and Digraph

In level partition reachability and antecedent sets for each variable are obtained through final reachability matrix (Table 3). The reachability set for a specific variable comprises the variable itself and the variables, which it may help achieve. Likewise, the antecedent set comprises the variable itself and the other variables, which may help in achieving them. It is followed by seeking for intersection set using the two (vide Table 4). After this the iterations of these sets are performed twelve times, however, to keep the results precise it is not being presented here.

Based on the above iterations itis found that the variable for which the reachability and the intersection sets are same is located at the top of the model as depicted in the following digraph (vide Fig. 1). In this case variable 12 i.e., differential advantage is found at top of the digraph and such iteration continues till the each variable in the matrix finds its level. This is how digraph is made followed by ISM based model.

Table 4: Matrix for Interactions

Var.	Reachability	Antecedents	Intersection Level
1	1,2,3,4,5,6,7,9,10,11,12	1,2,4,5,6,8,11	1,2,4,5,6,11
2	1,2,3,4,5,7,8,9,10,11,12	1,2,5,8,9	1,2,5,8,9
3	3,5,6,7,8,9,10,12	1,2,3,5,8,9	3,5,8,9
4	1,4,5,7,8,10,12,	1,2,4,5,6,8,11	1,4,5,8
5	1,2,3,4,5,6,7,8,9,10,11,12	1,2,3,4,5,6	1,2,3,4,5,6
6	1,4,5,6,7,9,10,11,12	1,3,5,6,7	1,5,6,7
7	6,7,9,10,11,12	1,2,3,4,5,6,7,8,11	6,7,11
8	1,2,3,4,7,8,9,10,11,12	2,3,4,5,8,9	2,3,4,8,9
9	2,3,8,9,10,12	1,2,3,5,6,7,8,9	2,3,8,9
10	10,11,12	1,2,3,4,5,6,7,8,9,10,11,12	10,11,12
11	1,4,7,10,11,12	1,2,5,6,7,8,10,11	1,7,10,11
12	10,12	1,2,3,4,5,6,7,8,9,10,11,12	10,12

The digraph shown in Fig. 1 depicts how the variables are interrelated to each other. This forms the base for the formation of the interpretive structural model. All the variables under consideration are positioned in accordance with their driver and dependence power.

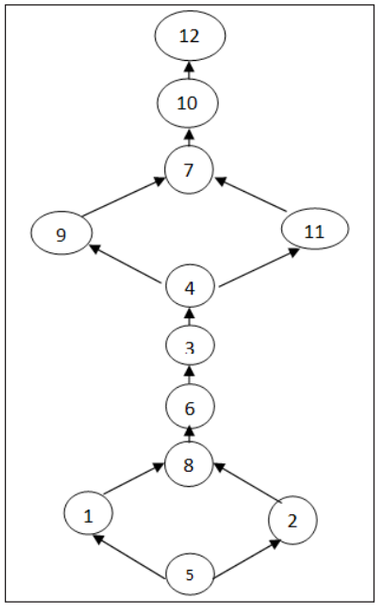

Fig. 1. Digraph

<B level>ISM-based Model Formation

Using the final reachability matrix the digraph was prepared. The arrows pointing show the relationship between/among variables. The detailed explanation on the interaction among variables is presented in the discussion section.

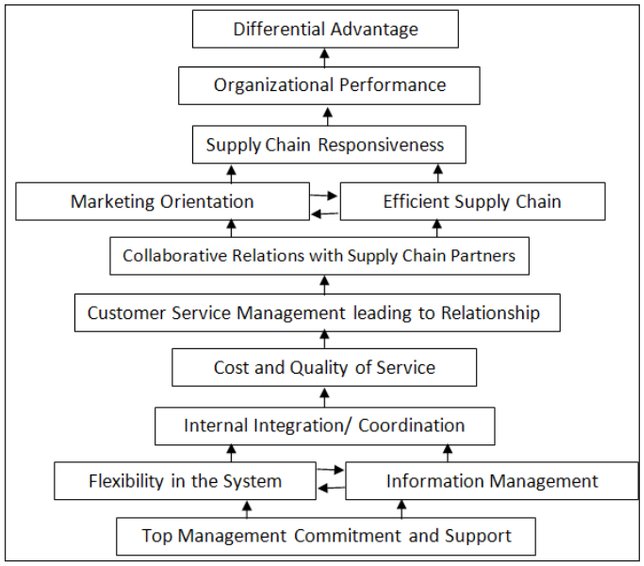

Fig. 2. ISM based Model for DCM Practice Variables

MICMAC Analysis

The MICMAC analysis is aimed at analysing the dependence and driver power of the variables (Mandal & Deshmukh,1994; Jharkharia & Shankar, 2005; Sushil, 2012; Yadav, 2014). In this analysis the variables are classified into four clusters on two bases i.e. driver and dependence power. The first cluster comprises the 'autonomous variables' which have both weak driver and dependence power. These variables are relatively disconnected from the system with which they have only few links, which may be strong (Charan *et al.*, 2008). The second quadrant comprises variables that have

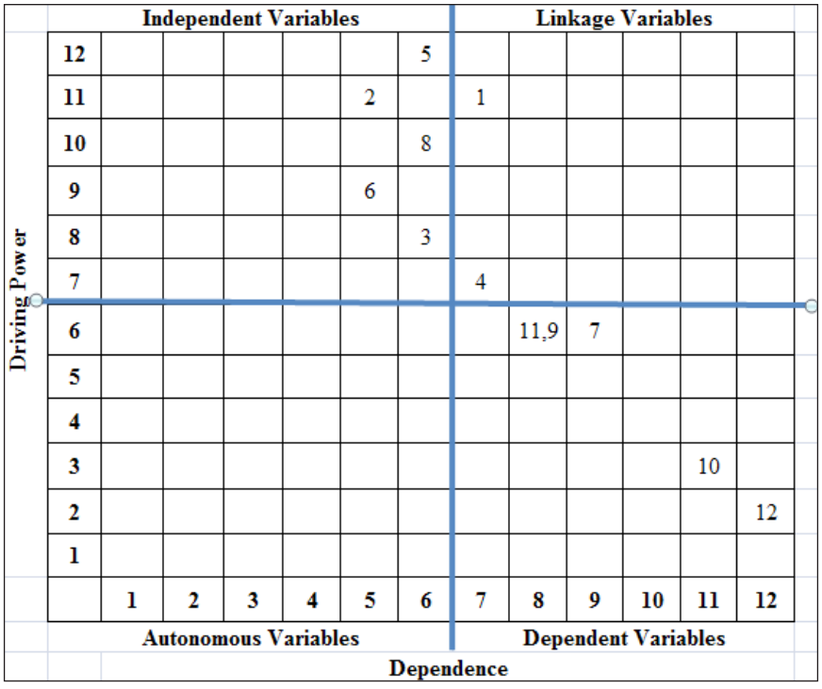

Fig. 3. MICMAC Matrix

weak driver power but strong dependence is known as 'dependent variables'.

Third cluster consists of 'linkage variables' which has both strong driver and strong dependence power. These variables are unstable in the sense that any action on these variables will have an effect on other and feedback on themselves (Charan *et al.*, 2008; Yadav *et al.*, 2015). The last variable with strong driving power but weak dependence is known as independent variables. Scholars maintain that variable with strong driving power are considered to be the key variables which usually fall in the category of either independent variables or linkage variables.

Discussion

As pointed out in the very beginning that demand and supply chains are gradually gaining strategic significance across industry verticals. Because there is no more open confrontation between two competing firms but an indirect rivalry does exist between their demand and supply chains. The present research fosters the demand chain philosophy which identified the variables that act as antecedents/enablers and outcomes of the DCM implementation in an organisation. The context of the study is Indian retail sector and the interpretive structural modeling (ISM)-based approach has been applied to analyse the interrelationship among the variables of DCM practices. The ISM model (Fig. 2) depicts the hierarchy of actions to be taken for the execution of DCM practices. This can serve as a guide to the senior management to frame a strategy to ensure meaningful implementation of DCM practices. The MICMAC analysis (Fig. 3) shows the driver power and dependence of variables of DCM practices and interdependencies thereof. The academic/ research vis-à-vis managerial implications emanating from the research are ut infra;

It is evident from the ISM model (Fig. 2) that top management commitment and support are highly significant antecedents among all the variables followed by flexibility in the system and information management. As they are at the bottom of the ISM hierarchy, they hold strategic importance. Thus, top management itself should pay due diligence to the issue such as ensuring flexibility in the system to meet the unforeseen market demand. And, effective information sharing as trust or information management along the key SC partners is also key variable. It is observed from MICMAC matrix (Fig. 3) that no autonomous variable exists among these variables. It reveals a fact that all the variables considered in the study influence the execution of DCM practices in an organisation. It is also noticed that SC responsiveness, marketing orientation and efficiency in SC etc. are

relatively weak drivers but are strongly dependent on other variables such as top-management commitment and support, flexibility in the system, information management, internal integration and coordination, costs and quality of service, customer service leading to relationship, collaborative relationship with SC partners. The variables possessing higher driving power should be dealt meticulously with as they are capable of influencing other variables which are located on the top of the ISM hierarchy (Fig. 3). Two variables (flexibility in the system and collaborative relationship with SC partners) were observed in the linkage category (top-right most corner in Fig.3) which possesses strong driving vis-à-vis dependence. The linkage variables are also known as key variables; therefore, they often deserve the attention of top-management.

Moreover, the ISM model (Fig.2) and MICMAC analysis (Fig. 3) both exhibit that five variables viz., top management commitment and support, information management, flexibility in the system internal integration, coordination, and costs and quality of service have strong driving power, means they are independent or least dependent on other variables. Thus, it can be inferred that these are strong drivers and should be recognised as foundation variables for the others. In order to deal with them top-management has to have a well chalked out strategic plan in place to gain higher organisational performance and competitive advantage. The bottom most variable is top management commitment and support which indicates that in order to implement DCM practices in an organisation it is the necessary condition without which all effort will go futile. Likewise, information sharing and trust among the supply chain partners is also driven by the former one and a basis for collaborative relationship with it SC partners. It is well established that timely information sharing across the chain can bring a sea change in the level of customer service as well which is conformed in the model hierarchy as well. However, the relation between information management and customer service is mediated by two other variables- internal integration and coordination and cost and quality of service which signifies that a firm has to ensure productive coordination among the various departments so that the customers' needs are better translated into the desired value proposition. Though at the same time managers have to be vigilant enough on the cost and quality of the service being provided. Since usually the practitioners are required to do a trade-off between the high level of customer service and the cost which are directly proportional. In other words, when the level of customer service rises and the cost also shoots up, therefore, both factors should be kept into account and equilibrium has to be found where both are optimal. In this way a firm can make an efficient supply chain which along with marketing orientation (refers to customer and competitor orientation) which influences the bottom line or the performance of an organisation. Ultimately this leads to differential advantage over competitors.

In spite of the specificity to the context of retailing some generalisations can be made based on the aforesaid study. The organisation should have a proactive strategic plan to ensure the execution of demand chain management practices and thereby, attain higher SC linked organisational performance and competitive advantage. Since no research in the past has identified clearly the variables of DCM practices implementation, the study is of utmost concern for both managers and academics, however, the variables may seem generic one at their face value, yet they provide direction for future research. Further, it should be noted that it is not the exhaustive list of variables of DCM, some more may be incorporated in future and also all of them put together are subject to statistical validation.

Conclusion

Some major contributions of this research study can be categorised as academic/research and managerial. On the academic front this research will act as milestone in further exploring the emerging domains of DCM. As it has already been posited that previous studies on DCM have been predominantly qualitative, theoretical and case based which hardly pointed out the operationalisation of DCM variables for further academic inquiry. This study, therefore, attempted to fill the gap by not only identifying the variables of DCM practices in an organisation but by establishing interrelationship among them as well using ISM approach. The managerial contributions of the study are that the variables identified in the research should be dealt meticulously sensing their strategic significance as described through bottom-up hierarchy of ISM followed by the MICMAC analysis *(Figure3)*. The bottom most variables are of strategic concern for practicing managers in retail as they build the foundation for successful implementation of DCM practices in an organisation. Of which top-management commitment and support is a prima facie pre-requisite. As an outcome of ISM model the other key variables are effective information sharing and trust, internal integration and coordination, collaborative relationship with suppliers and cost and quality of service. In order to advance the theory future research may also consider applying an advancement of ISM method i.e., total interpretive

structural modeling (TISM) which takes into account the customers' perspective on implementation of various practices. Also, for more precision in drawing conclusion about the nature, interaction and interrelationship among underlying variables the MICMAC analysis can be done using fuzzy logic.

Because the present study followed an interpretive method the underlying variables of which cannot be considered directly as operational for future researches, therefore, it is advisable to statistically test the interpretive model drawn in the study. The relevant technique suggested for testing such model is structural equation modeling (SEM). After the interpretive model is tested using such robust tools the outcome can be generalised. Apart from statistical validation future researchers may also validate the model using case studies from different industries. Such multiple cross-sectional case analyses can also be done for the purpose.

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