Chapter 1- Introduction

1.1 Need for this Research
Time, cost and agility management have been the major objectives of apparel supply chain management in the last two decades. To achieve these objectives, apparel exporters/suppliers strive to cut down on activities that contribute to value being created for the customer and identify value added at each stage of value chain. Clear lines of communication amongst all members of the value chain is of prime importance. All efforts must be participative and must involve linking amongst all chain members.

Research shows supplier selection criteria, considered as the most important criteria in formulation of company sourcing strategy are cost, lead time/flexibility, quality, on-time delivery, communication, innovation availability of capacity, ethics. (Gibbon 2001, Nowell 2005, Koprulu 2007)

Supply-chain competitiveness is a holistic matter that requires each partner within the supply chain to align their structural elements and some important elements of supply chain competitiveness as established by various researchers are cost, logistics, flexible supply chain, quality, delivery, product availability, innovative products, value added product and customer supplier relationship (Nowell 2005, Cooper et al. 1997).

Study on buyers’ perception of India as an apparel sourcing country showed that while India was perceived satisfactorily on price, quality, technology, flexibility, small order quantity etc. it was perceived unfavourably on lead times, responsiveness, communication, trust, meeting contractual obligations, ethical standards etc. (Verma, 2002).

Merchandising is defined as activities undertaken to ensure that the right product reaches at the right price in right quantity and at the right time to the final destination. (Gowrek, 2004). In apparel industry, merchandiser is the bridge between the management (or) industry and the buyer. Merchandiser is the responsible person to make the product according to the buyer’s parameters and satisfaction. Merchandisers have to look after every job like buying the raw material (which is required to finish the product), making the apparel, finishing the apparel, documentation (over all view), finally shipping.
In a paper by National Skill Development Corporation on Human Resource and Skill Requirements in the Textile Industry (2010), the skills required in a merchandiser are:

a) Understanding of various production activities as the merchandiser is interface between the buyer and the company.
b) Soft skills like negotiation and communication skills. These skills assume more significance for export oriented units.
c) Knowledge of foreign languages for better co-ordination with the buyer.
d) Ability to handle multiple accounts/customers.
e) Thorough understanding of costing.
f) Understanding of buyer requirements of design and quality.
g) Reviewing materials used for garment manufacturing.
h) Understanding of various production activities as the person is responsible for execution of the order.
i) Ability to work closely with other functions like design, production etc.
j) Time management skills to handle multiple orders at the same time.
k) Basic computer skills.

Though there has been much research in terms of performance measures for supply chains, textile and apparel specific research in the area is lacking (Allen, 2008). Most important metrics to gauge the performance of textile and apparel supply chains are-

a) cost
b) on-time delivery
c) quality
d) lead time
e) capacity

In a research on Improving the Competitiveness of the Haitian Apparel Supply Chain (Uluskan 2010) service level was an important parameter to improve competitiveness. Service refers to response rates and communication levels in case of a problem, suggestions for the solution to that problem, the sample preparation and delivery time, being proactive in helping buyer companies to run their business, watching the
marketplace for the type of products that they produce and bringing new ideas to buyer companies, and offering full package.

1.1 Objectives of Research
This study is descriptive-cum-diagnostic research work. It aims to explore the various factors of merchandiser performance on organisation level and supply chain competitiveness factors that affect the apparel industry. It further aims to establish the relationship between the merchandiser performance parameters which are likely to impact supply chain competitiveness of apparel export units. The objectives of this specified research are:

i. To study the current supply chain dynamics of Indian apparel industry
ii. To assess the existent parameters on which the merchandisers’ performance is measured in various apparel export units.
iii. To identify the key factors for assessing merchandisers’ performance.
iv. To identify key factors of apparel export supply chain competitiveness.
v. To analyse the relationship between ‘merchandisers’ performance’ factors and ‘supply chain competitiveness’ factors for apparel export units.
vi. To suggest ways to enhance ‘supply chain competitiveness’ of apparel export units by managing key ‘merchandiser performance’ factors.

1.3 Methodology
A) Sampling Plan
The study focussed on the merchandiser performance parameters in apparel export companies located in NCR of Delhi. A random sample has been used for the study followed by selection of 92 companies on executive/judgment and convenience basis. 80 companies then responded. The study takes into consideration apparel export manufacturing units, apparel buying agencies/liaison offices and apparel buyers.

B) Size of Sample
Out of an initial population frame of 2300 apparel export companies located in National Capital Region of Delhi, 128 companies were selected on random basis out of which 92 were selected on judgement cum convenience basis. Consequent
upon the response rate, 80 companies agreed to participate in the research study on merchandiser performance and supply chain competitiveness of apparel export units. The response rate was 87%.

C) Sampling Criteria
The following criteria was adopted in selecting sample companies
i. The company should have a manufacturing/processing/assembly unit or head office/sourcing office in NCR of Delhi.
ii. The sample company must have annual turnover of at least Rs 20 crore.
iii. The companies could be apparel export manufacturing units, buying agencies and international apparel buyers.
iv. The merchandising department of participants should have minimum staff strength of 5 merchandisers.

D) Profile of the Sample
The research covered 80 companies. 33 of the 80 organisations were in the annual turnover bracket of Rs 20-50 Crore, 14 companies in Rs.50-90 Crore and 33 in above Rs 90 Crore turnover per year slot.

Of these 80 companies 50 were manufacturers for exports and 30 were apparel buying agencies/liaison offices. Fifty eight percent of the sample represented private limited companies where as proprietary firms accounted for twenty five percent of the total sample, followed by eight percent of public limited companies balance being joint ventures.

1.4 Data Collection
The Data collection methodology for the research was planned in such a manner so that most relevant details of merchandiser performance and supply chain competitiveness are collected in a structured manner.

a) Data Collection Tools
The following tools were used in data collection for the research work:

Secondary Data: The secondary data has been searched to have insights into the Indian apparel export sector and various supply chain practices in the fashion industry the world over.
**Primary Data:** The primary data has been collected through questionnaire, which was administered through-

i. Individual in-depth personal interviews

ii. Structured telephone interviews

iii. E-mail.

In the case of email responses, the responses were validated by telephonic queries.

b) Questionnaire

**Pre testing of Questionnaire:** A tentative questionnaire comprising of about 40 questions was developed for pre testing purpose. The questionnaire was then administered to 10 conveniently selected samples of apparel export companies and personal interviews were conducted. Protocol analysis was also undertaken to help the respondents in answering the questions, assess their problem in understanding some questions and incorporate modifications suggested by them.

Pre-tested questionnaire was also discussed with senior members/merchandisers of the industry to ensure that all facets of merchandising and supply chain were included in the questionnaire.

c) **Content Items of the Questionnaire:** As a result of pre testing and feedback from respondents and experts of the apparel industry, questions were edited, re-designed, consolidated, simplified and in few cases some parts were even deleted for the purpose of objective assessment of response and ease of analysis. The final questionnaire consisted of 45 questions. The areas covered in questionnaire encompassed virtually all aspects of merchandiser job responsibilities and apparel supply chain competitiveness factors as relevant to apparel industry.

d) **Response Mechanism:** As mentioned earlier, responses were sought on questionnaire in three different ways viz- in-depth personal interviews, structured telephonic interviews and emails. 70% of interviews were in-depth personal interviews, 20% were structured telephonic personal interviews and balance 10% responses were received on email. No matter what the mode of administration, all respondents were first e-mailed the questionnaire.
Those answering the questionnaire were top management of the apparel export company-the owner/CEO, General Manager or Merchandising manager of the apparel export unit/company selected.

1.5 Data Analysis and Interpretation

The data analysis was conducted in 4 steps:

   i. *Hypothesis Testing.*

   ii. *Correlation Analysis.*

   iii. *Factor Analysis*

   iv. *Multiple Regression Analysis."

i) Hypothesis Testing

The factors that could help enhance merchandiser performance were enlisted at the beginning of the study. These factors were included in the questionnaire to which, 80 organisations who responded in the research, gave their views on the importance of the factors in enhancing merchandiser performance.

Twenty one hypotheses were formulated and *t-test* was then chosen to determine the statistical significance between sample distribution mean and a parameter and the key inferences at 95% confidence level were drawn.

ii) Correlation Analysis

Correlation Analysis was carried to find out the correlation between variables of merchandiser performance and supply chain competitiveness. Correlations measure how variables or rank orders are related.

The variables that have ‘strong’ and ‘positive correlation’ between them are:

1. ‘Knowledge of Quality Assurance in Apparel Manufacturing’ and ‘Delivery’, suggesting that merchandiser’s knowledge of apparel manufacturing and quality assurance helps them manage the delivery schedules in a better manner.

2. ‘Knowledge of Dynamic Product Costing’ and ‘Retail Pricing’, suggesting that retail pricing calculation exercise is better managed by those merchandisers who have the knowledge of costing dynamics.
3. ‘Organisation and Communication skills’ with ‘Attitude and Work Culture’, indicating those merchandisers who have developed themselves on organisation and communication skills have better attitude and contribute in improving work culture of the organisation.

4. ‘Organisation and Communication skills’ with ‘Responsiveness to Buyers’, indicating that merchandisers with better organisation and communication skills can be more responsive to needs of buyers.

5. ‘Knowledge of Apparel Manufacturing’ and ‘Sampling Lead Time’, implying the fact that sampling time can be optimized by merchandisers who have better technical knowledge (that of apparel manufacturing).

6. ‘Knowledge of Apparel Manufacturing’ and ‘Production Lead Time’, implying that merchandisers who have knowledge about apparel manufacturing and quality assurance are better equipped to manage production lead times.

7. ‘Knowledge of Apparel Manufacturing’ and ‘Product Quality’, suggesting that product quality is managed better by merchandisers who have knowledge about apparel manufacturing.

8. ‘Knowledge of Dynamic Product Costing’ and ‘Product Quality’, suggesting that the merchandisers who have command of product costing skills can manage product quality better.

iii) Factor Analysis

Factor Analysis was carried out to examine the validity of theoretically identified 22 merchandisers’ performance variables and 11 supply chain competitiveness variables. The goal was to identify a smaller set of factors to represent the relationships among respective variables.

Factor Analysis on Merchandising Performance Variables

Empirically, the 22 merchandiser performance variables were reduced to seven underlying factors as represented as below:
Factor 1: Sourcing Skills

Factor 2. Order Planning, Organizing and Control Skills

Factor 3. Raw Material and Product Knowledge

Factor 4. Post-Production and Logistics Implementation Skills

Factor 5. Customer Centricity

Factor 6. Apparel Production Management

Factor 7. Analysis and Problem Solving Skill

Empirically, the 11 supply chain competitiveness variables were reduced to three underlying factors, mentioned as follows:

- Factor 1: Pre-Production Planning and Scheduling

- Factor 2. – Production and Order Management

- Factor 3. – Total Approach to Business and Customers

iv) Regression Analysis of Merchandiser Performance and Supply Chain Competitiveness Factors

This section presents the results of multiple regression analysis for each of the three supply chain competitiveness factors. The aim of this analysis is to find out the predictor variables for various supply chain factors i.e. analysis tries to establish relationship between ‘merchandiser performance’ factors which affect ‘supply chain competitiveness’.

1. Pre-Production Planning

For the organisations under study, factors –Sourcing Skill, Raw Material and Product Knowledge and Apparel Production Management were found to be significant
predictors of Pre-Production Planning and scheduling. These variables had a significant positive correlation with Pre-Production Planning and Scheduling.

2. Production and Order Management

For the organisations under study, factors - Sourcing Skill, Order Planning, Organizing and Control Skills and Analysis and Problem Solving Skills were found to be significant predictors of Production and Order Management. These variables had a significant positive correlation with Production Management.

3. Total Approach to Business and Customers

For the organisations under study, factors – Sourcing Skill, Order Planning Organizing and Control Skills were found to be significant predictors of Total Approach to Business and Customers. These variables had a significant positive correlation with Total Approach to Business and Customers.

1.6 Conclusions

A. Conclusions based on Descriptive Statistics

i) Merchandiser training and contribution to business

a) 48.8% of the respondent companies had a structured merchandising training programme

b) While 72.5% of the respondent organisations strongly agreed to the fact that merchandiser performance affects business result of their organisation, 25% agreed to the statement.

c) Nearly 90% respondents claimed that the contribution attributable to a merchandiser in successfully carrying out an order is between 50-90%, hence affecting the overall business objective of the apparel export company.

ii) Key Merchandiser Performance Parameters

| a) Customer centric sense of design and aesthetics | h) Organisation and communication skills |
| b) Thorough raw material and product knowledge | i) Understand needs of end customer |
| c) Fabric and trim sourcing capability | j) Capability of collaborative forecasting |
| d) Share appropriate and timely | k) Actively involved in product and market research |
information with all departments and buyers

| e) Help plan and schedule production capacity & resources |
| f) Knowledge of Quality Assurance (QA) in apparel manufacturing |
| g) Knowledge of dynamic product costing |
| l) Global sourcing and supplier management |
| m) Knowledge of apparel manufacturing |
| n) Co-ordination skills of distribution and logistics |
| o) Pre-emptive capability to solve production and logistics problems |

**B. Conclusions based on Correlation Analysis**

Correlation analysis shows that –

i) Knowledge of apparel manufacturing has strong correlation with Sampling Lead time, Production Lead time and Product Quality

ii) Knowledge of dynamic product costing has strong correlation with Retail Pricing and Product Quality

iii) Organisation and Communication skills are strongly correlated to Attitude and Work Culture and Responsive to buyers.

iv) Knowledge of Quality Assurance (QA) has strong correlation with Delivery.

**C. Conclusions based on Regression Analysis**

1. Sourcing Skill, Raw Material and Product Knowledge and Apparel Production Management were found to be significant predictors of Pre-Production Planning and scheduling.

2. Sourcing Skill, Order Planning, Organizing and Control Skills and Analysis and Problem Solving Skills were found to be significant predictors of Production and Order Management.

3. Sourcing Skill, Order Planning Organizing and Control Skills were found to be significant predictors of Total Approach to Business and Customers.

**1.7 Recommendations**

The recommendations have been deducted from the data analysis and key conclusions and have been divided into 3 sections:
A) Recommendations for apparel export companies

B) Initiatives that individual merchandisers can take to improve their performance

C) Recommendations for international apparel buyers

A) Recommendations for the apparel export companies-This category consist of apparel manufacturing companies as well as apparel buying/liaison offices.

i. **Identification of specific areas where merchandisers can contribute to business** - Since the research clearly shows that merchandiser performance affects the business result of the organisation, the first step towards enhancing merchandisers’ performance, would be the appreciation and recognition of this fact.

ii. **Education and Training**- Merchandisers with a strong professional/formal education background should be considered a valuable asset. Those with relevant experience would be easy to train and can also help in training of freshers / junior merchandisers. Such experienced people can also contribute to training within the organisation and also identify areas where improvements in systems can be made.

iii. **Systems within the organisation**-
   a) **Pre Requisites for merchandiser recruitment**- Clear guidelines should be set-up by Human Resource (HR) department/those who are a part of the recruitment team, of the education and skill requirements in candidates for merchandising positions.
   
   b) **Dedicated training cell**- A dedicated training cell which assesses the training needs and organizes training of merchandisers on a routine basis.
   
   c) **Training of Trainers**- Apart from getting external expertise in training, the trainers in many cases could be senior people from within the company. Refresher training for trainers is also required.
   
   d) **Standardizing documentation systems across the company**- The companies must standardise their in-house system of documentation and file maintenance, irrespective of the buyer.
   
   e) **Role of Information and Communication Technology (ICT)**- Resource planning systems like ERP systems for in-house coordination with real time
EDI (Electronic Data Interchange) systems to communicate with buyers and suppliers could help merchandisers organize their work better, communicate, share and coordinate faster with all functions concerned

f) **Robust infrastructure and quality management systems** - The merchandiser in any organisation has to coordinate with various functions/departments and ensures that the processes therein are executed in a timely and orderly manner. Strengthening the functioning of each department particularly the production and quality assurance departments could strengthen the execution skills of the merchandiser.

g) **Recognition of merchandisers’ roles and responsibilities** - As a coordinator, the understanding of what all the merchandiser will coordinate has to be made clear to all departments within the company and all supply chain partners.

h) **Focus on competitiveness** - The need for time based competitiveness in apparel industry is of paramount importance. There is a need to compress time and deflate prices by targeting areas of product design and development, costing, logistics etc.

iv. **Performance Appraisal**
The companies ought to have a structured mechanism where by they can trace and track performance of each merchandiser. Ensuring each person understands his/her job responsibilities, is given a sound resources (financial, technical, IT) to execute these responsibilities. Well defined KRAs (Key Result Areas) and a system of appraisal of KRAs on a routine basis is recommended for apparel export units. Further those merchandisers who are able to meet the objectives of timely delivery, order fulfilment etc could be given rewarded appropriately.

**B) Individual Initiatives of Merchandisers**

**Initiative for Product design and development, order configuration and management** –

a) Right from the time new products are sampled, the merchandisers need to acquaint themselves with the behaviour and feel of the raw material and the apparel products. The initiative of the merchandisers in this area could help prevent buyers from selecting a difficult to produce product,
help the apparel export unit do appropriate costing on tough product and help production department of the company handle the new product in appropriate manner.

b) Delay in problem solving could also be reduced if merchandisers were more pre-emptive in seeing through an order even before it starts and have checks and balances in place to reduce bottlenecks at a later stage.

c) Apart from learning execution of merchandising job responsibilities, merchandisers need to understand the larger and aggregate picture as regards supply chain, positioning of their organisation is in the supply chain and ways in which their role can enhance the competitiveness of their organisation.

C) Recommendations for apparel buyers- The key recommendations suggest to provide for:
   a) Training by buyers
   b) Clarity in communicating standards and specifications
   c) Sharing vendor evaluation criteria and feedback with vendors with areas of improvement highlighted
   d) Use of ICT to ensure collaboration with suppliers

1.8 Scope for further research- The author sees scope to:
   a) Analyse specific tasks and performance parameters for various levels and functions of merchandisers based on their education, experience, and designations.
   b) Analyse and compare buying/sourcing companies vis a vis manufacturing companies.
   c) Also take into account merchandiser performance parameters of domestic companies in Indian retail environment.