

**STUDY OF SELECT COLLABORATION ISSUES IN  
SUPPLY CHAIN MANAGEMENT OF APPAREL  
RETAIL INDUSTRY**

**by**

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*Dedicated*  
*to*  
*All My Teachers*

## **CERTIFICATE**

This is to certify that the thesis entitled “**STUDY OF SELECT COLLABORATION ISSUES IN SUPPLY CHAIN MANAGEMENT OF APPAREL RETAIL INDUSTRY**” being submitted by A. Ramesh to the Indian Institute of Technology Delhi for the award of the degree of Doctor of Philosophy is a bonafide record of original research work carried out by him. He has worked under our guidance and supervision and has fulfilled the requirements for the submission of this thesis, which has reached the requisite standard. The results contained in this thesis have not been submitted, in part or full, to any other University or Institute for the award of any degree or diploma.

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## **ABSTRACT**

The concept of supply chain management (SCM) is focuses on providing right product at right time at right place at right price. This demands a strong commitment to close relationships among trading partners- a movement away from arms-length relationships toward long term, partnership-type arrangements in creating highly competitive supply chains. It is generally believed that increased collaboration among supply chain participants leads enhanced service performance.

A literature review has been conducted to identify the gaps in SCM research especially in the context of Indian Apparel Retail Industry. While analyzing the strategies of improving the responsiveness of apparel supply chain through analytic network process (ANP) based approach, it was found that Apparel Retail Industry (retailer, manufacturer and supplier) should focus more on developing supply chain collaboration. This has led to identify the key factors for successful supply chain collaboration. Subsequently some hypotheses were framed and a questionnaire was developed for a comprehensive empirical survey. Four clusters of Indian apparel retail industry namely Bangalore, Chennai, Coimbatore and Tirupur in South India, have been covered. The barriers and their interactions were identified and modeled through interpretive structural modeling (ISM). A graph theoretic approach (GTA) has been proposed to measure the extent of collaboration between apparel retailer and manufacturer in an apparel supply chain and an index called supply chain collaboration index (SCCI) has been developed. This index is found to be positively related with company's performance.

The main contributions of this research may be summarized as follows:

- An analytical framework for analyzing the strategies of improving the responsiveness of apparel supply chain.
- An ISM-based framework to establish the mutual relationship existing among important barriers of supply chain collaboration. It can be strategically used by the top management in managing supply chain collaboration.
- An index to quantify the level of supply chain collaboration between apparel manufacturer and retailer.

**Keywords:** Supply chain collaboration, Empirical study, Interpretive Structural Modeling, Responsiveness, Analytic Network Process, Graph theory, Apparel industry.

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