

## Implementing Collaborative Planning Forecasting and Replenishment (CPFR) in the Textile Supply Chain of Pakistan

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### Abstract

*The primary purpose of this paper is to find the effect of collaboration in the textile sector. The detailed study discusses the benefits of CPFR and defines the suitable structure of CPFR for Pakistan. The study comprises a review of different research articles for a clear understanding of collaboration and the impact of CPFR. The review suggests that CPFR provides the ultimate benefits to the supply chain of the textile sector when environmental uncertainties are present and also focuses on the textile cluster and its current supply chain practices. The review measures the critical variable of CPFR and its relationship with competitive performance. Also, it highlights the various issues in the demand collaboration process of the textile sector in Pakistan. The review provides a qualitative study of CPFR and a bird's eye view of the scopes and benefits of CPFR for the textile sector.*

**Keywords:** Collaboration, CPFR, Textile, Pakistan.

### Introduction

Supply chain management and system collaboration is the basic need of the textile sector in Pakistan. The overall textile sector, especially the garment sector in Pakistan, is experiencing various issues in quality, efficiency, marketing, and management, and in this way, confronting a genuine risk of a decreased offer of worldwide markets (Batool, 2019). Therefore, supply chain technology in the textile sector will be much more vital than ever in the recent era (Basheer et al., 2019). Collaboration in the supply chain enhanced the collaborative advantages and also an emphasis on the organization's performance. Collaborative advantage is the main reason for the supply chain partner to move toward collaboration and create higher performance (Inthavong et al., 2023). Stank et al. (2021) believed that collaboration between supply chain partners can increase customer service and lower costs. Inventory management is the fundamental element in managing the supply chain of the garment and apparel sector, and CPFR is the finest strategy to manage the inventory at the optimal level and lower operational expenses (Choi et al., 2023). The collaboration activities are further divided into four levels:

- Communication -The objective of the associate is to acknowledge the change in profitability and the sharing of information through direct IT applications.
- Coordination - It includes Intra and inter-cooperation of procedures, and its main objective is the synchronization of streams and mechanization of promising routine primary leadership forms and enhances accuracy and speed.

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- Intensive Collaboration- At this level, the participation of a cooperative manager is essential for enhancing the process of tactical decision-making and improving innovation in the supply chain.
- Partnerships- The fourth stage includes the cost-related relations between collaborating partners, like sharing ventures and benefits (Kampstra et al., 2006).

## Literature Review

Quinn (1997) explained the supply chain as “those actions related to moving goods from the raw-materials stage to the end customer.” It incorporates sourcing, procurement, production scheduling, order processing, transportation, inventory management, warehousing, and customer service. It likewise encapsulates the data frameworks, so it is crucial to screen all of those activities. Supply chain management is the rule to maintain a good relationship between upstream and downstream suppliers and customers to give the most excellent customer service to the complete supply chain at the lowest cost. The central focus of the Supply chain is on the trust and collaboration between the partner and guarantee of the seamless process throughout the supply chain (Christopher, 2016).

## Demand Collaboration

Demand collaboration is considered an essential tool. Its main objective is not only sharing POS data and forecasting infrastructure. The beauty of demand collaboration is to allow the supply chain partner to obtain private market data from each other (Xu, 2013). CPFR is a cross-industry activity intended to upgrade a supplier, producer, and vendor relationship by mutually managing the planning process and shared data and giving the optimal solution for demand collaboration (Omkar Sadhu, 2010). In the context of the contingency theory’s viewpoint, the CPFR strategy would have the ability to behave differently in different situations, and these situations are like different cultures or countries, product types, nature of industry, manufacturing and planning approach, and different market dynamics according to the culture (Hollmann et al., 2015).

## Demand Collaboration in Textile

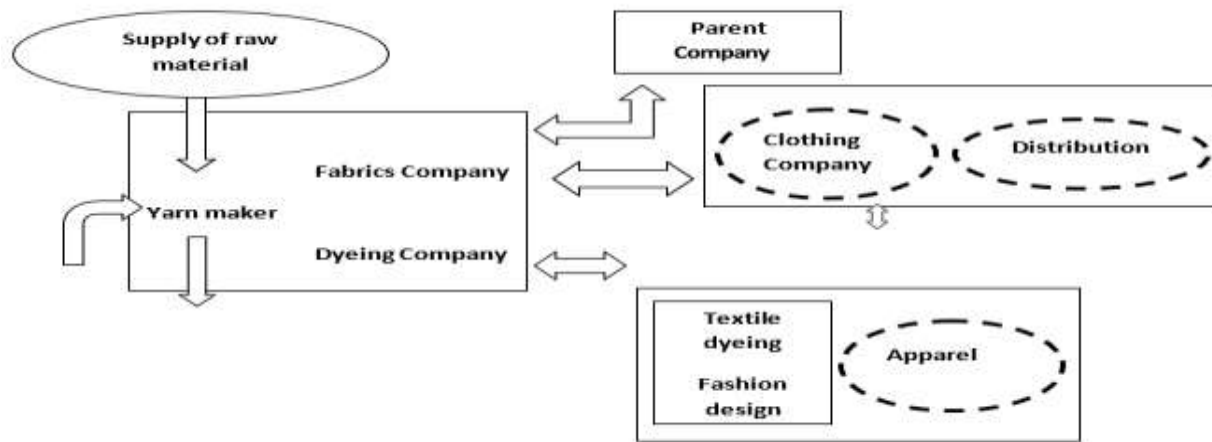
Supply chain management is the main element in the textile sector to attain a competitive advantage. In today’s market, fashion changes daily, and it becomes impossible for a supplier to make the garment using the traditional demand planning method (Ma et al., 2018). In the absence of a demand and planning strategy, the Pakistan textile sector is failing to meet the customer lead time, and unluckily, this sector is not prepared for this situation in the future (Khaliq et al., 2012). The product cost in the textile sector consists of three components:

1. The procurement of raw materials
2. The production or the fabric-making process
3. The shipping cost to customers

Other factors that affect the cost also include government stability, reliability, terrorism, sensitivity to commit, and delivery time (Siddique et al., 2013). The garment and apparel industry is considered one of the most challenging industries to sustain. CPFR is considered a competitive weapon that guides apparel vendors to construct a solid connection with their vendors (Agarwal, 2014). A demand-driven textile supply chain gives the supplier numerous advantages, such as reducing the inventory to a minimum level of semi- and final products, making different styles of articles, and decreasing the comeback from clients (Ma et al., 2018). The supply chain relationship in the textile value chain is among the merchants and customers’ existing in the chain. The supply

chain associates in the textile sector are cotton makers, yarn suppliers, ginners, manufacturers, wholesalers, and retailers (Vanathi & Swamynathan, 2014). CPFR strategy improves the demand visibility from raw material to production and delivery of the final product to the consumer (Kumar, 2019). Information sharing was also essential for effective supply chain collaboration (Hudnurkar et al., 2014).

**Figure 1 Collaboration model in the textile industry Source: An Intelligent Supply Chain Management System to Enhance Collaboration in Textile Industry, Hwang and Seruga, 2011**

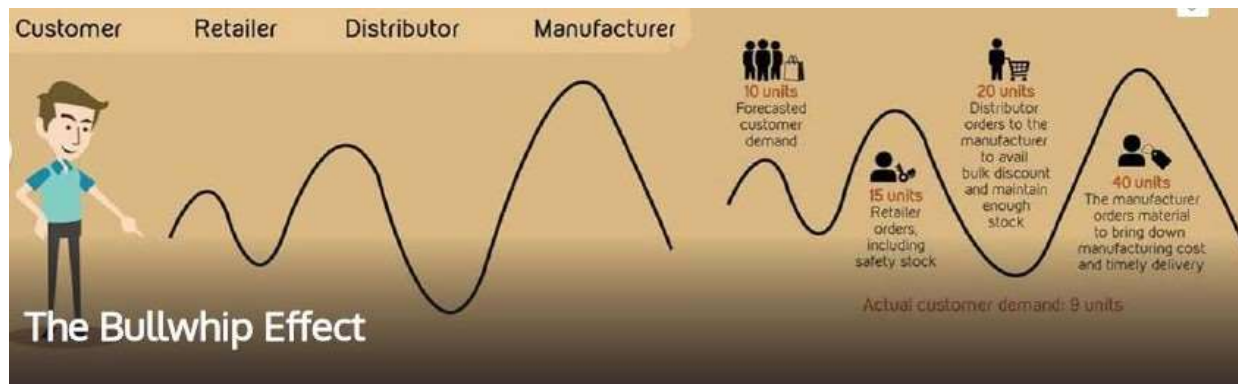


Lead time and product costs are significant elements in the textile sector. These two elements could be better affected due to a lack of professional planners and a lack of successfully implementing the quality parameter (Ataullah et al., 2014). Oelze (2017) stated that higher management and their help are the main elements in implementing supply chain management in the industry. Further, he explained that the culture barrier, trust, lack of resources, awareness, and information sharing are the main elements in implementing the collaborative culture in industries.

### **Bullwhip Effect**

The bullwhip effect is called the amplification of demand uncertainty in the supply chain network. Companies place a large order quantity that creates inadequacies in the supply chain and leads toward the flow of a more significant number of units than the actual need, increasing the stock and generating stock out (Dominguez et al., 2014). The bullwhip impact depends on four factors: price deviation, demand signal management, order batching, and rationing game (Lee et al., 2004). Information sharing benefits depend on two factors: content and the correct use of information. If the customer shares inefficient and distorted information, the lead time and excess inventory in every supply phase will lead to the bullwhip effect (Lorentz et al., 2011). Information and supply chain technology capabilities are vital in firm supply performances, total quality management practices, and supply chain performance (Basheer et al., 2019). CPFR model in a shipper-supplier connection enhances estimating precision and reduces the “bullwhip impact” in the store network (Chang et al., 2007).

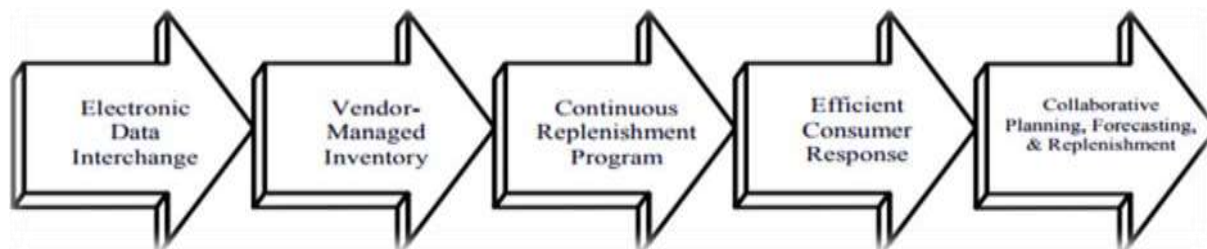
**Figure 2 Bullwhip effect Source: Fibre2Fashion Pvt. Ltd, Mausmi Ambastha, 2018**



### Strategies of Demand Collaboration

Diverse integrated policies, which are Quick Response (QR), Efficient consumer response (ECR), continuous Replenishment Program (CRP), vendor-managed inventory (VMI), and collaboration, planning, forecasting, and Replenishment (CPFR) have been suggested.

**Figure 3 a history of CPFR Source: Industry directions and system synced, Mohsen Attaran, 2007**



EDI's objective is to exchange information starting with one PC and then onto the next without the requirement for human mediation. Business advantages of EDI incorporate lessened costs and enhanced precision (McGowan, 2004). The group of grocery industry lead, similar to the textile sector, formed a mutual trade task force referred to as the ECR functioning group in 1992 (Kurt et al., 1993). Its key objective is to enable a supply chain to be more efficient and bring more excellent value to the customer (Intrieri, 2014). Quick response is a collaborative supply chain strategy that allows the supplier to react quickly to the changes while enhancing performance (Lowson et al., 1999). CRP's approach is to redesign the conventional replenishment and ordering system methods and determine the exchange of procurement requests from the wholesaler to the supplier. It is a procedure of restocking. The manufacturer sends the whole load to the distribution center in this strategy. However, the organization fluctuates as per deals and as per a pre-assembled level of stock (Panwar, 2013).

This strategy characterizes the primary stage of a corporation, where the vendor is considered the primary decision-making power for placing the order and managing the inventory level. In the

VMI framework, the supplier chooses the correct stock levels for each item and uses strategies to keep up these stock levels (Ao, 2015). CPFR replicates the most recent approach in the growth of supply chain integration. CPFR is considered the best strategy over previous strategies because of its diverse application in collaboration. Earlier strategies like CRP and VMI focused on replenishment planning and gave little value to demand forecasting and production planning. However, CPFR is an excellent and complete collaborative strategy that allows consumers and merchants to collaborate and create action plans (Kamalapurkar, 2011). The implementation of CPFR in an organization can achieve the following benefits: predictable order cycles, low stock out, efficient and effective deliveries, the accurate share of information, increased customer service and satisfaction level, reliability, reduced inventory holding cost, and fast inventory replenishment (Tenhiala, 2003). CPFR gives a structure that covers an expansive scope of issues, including demand forecasting, production, inventory management, order fulfillment, and replenishment planning (Hill et al., 2018).

**Figure 4 CPFR model** Source: (CPFR.org Web site, CPFR ©2005, VICS)





**Table 1 Comparison of CPFR with Previous Collaborative Strategies**

Strategies	Traditional supply chain	ECR	CRP	VMI	CPFR
<b>Purpose</b>	In the traditional supply chain, every member receives a replenishment request. Just from the downstream members. (Nimmy, 2019)	The main focus of ECR is to create the supply chain more efficiently. Moreover, it brings more excellent value to the customer. (Robins, 1994)	CRP is a restocking procedure in which the manufacturer sends the total load to the distribution center. (Derrouiche et al., 2008)	VMI is a course of action where the merchant, not the client, chooses when and decides how much the client's stock is restocked. (Bookbinder et al., 2010)	Jointly make plans for supplier and manufacturer and retailer, and these plans are also shared. (Boone et al., 2001)
<b>Forecasting Method</b>	Traditionally, Order forecasts are based on the reorder system. Workers physically check those store shelves with limited stock and Scanned the barcode. (Anderson, 1996)	Order forecasting based on historical POS data. (Harris et al., 1999)	The retailer sends the most recent stock and transit report, stock accessibility, and stock order to the supplier. The supplier issued the proposed demand and sent it back to the retailer. (Kopanaki and Smithson, 2003)	VMI focused on the store inventory and did not take the seasonality and production planning of the item into account for forecast. (Kamalapurkar, 2011)	Forecasting based on POS data promotion planning and other marketing activities. Recognizes micro-marketing and micro-merchandising prospects (Kim and Mahoney, 2010)
<b>Focus</b>	Main focused on product building and execution.	Recognize the need for new technology, e.g., EDI (Electronic Data Interchange), that is utilized for exact and proper trade of information (King and Phumpiu, 1996)	CRP focuses on reducing the inventory level and increasing the frequency of replenishment. (Yao and Dresner, 2008)	Its primary focus is to reduce the total inventory charge. (Niranjan et al., 2012)	Mainly focused on planning. (Sheffi, 2002)
<b>Approach</b>	The approach is limited to Logistic and inventory point of view. There is no point in sharing customer	ECR set out to transform the conventional model and cut out the non-productive barriers (Doukidi and	The main focus is the lowering of associated costs and an improvement in inventory turnover.	Reduce the repetitive operation between vendor and customer. (Disney and Towill, 2003)	Extending the approach from operational planning to execution includes account, logistics, sales,

	demand and collaboration among partners. (Nimmy, 2019)	Vrechopoulos, 2005)	(Schönsleben, 2016)		promotion, procurement, and development point of view. (Esper and Williams, 2003)
<b>Aim</b>	The aim is to cut the company cost	The main focus is to re-engineer the business processes. (Pramataris et al., 1997)	CRP focuses on enhancing the Product flow with customer demand. (Kopanaki and Smithson, 2003)	The main aim of the VMI is how to reduce the total inventory of the two parties, but not how to share the cost load of the two parties. (Luo, 2012)	The aim is to increase the revenue of the trading partner. (Kubde and Bansod, 2010,)
<b>Visibility</b>	It is efficiently working on inventory replenishment.	The Objective of the ECR is the collaboration to fulfill customers' needs quicker, better, and at a lower cost. (Zvirgzdina et al., 2015).	CRP enhanced cooperation among trading associates (Kopanaki and Smithson, 2003).	The core objective of VMI is to enhance product availability without increasing supplementary inventory, distribution, and production costs. Its visibility is limited at the inventory level and decision-making process (Niranjan et al., 2012).	Work on each level, including product introduction, endorsement, inventory levels, and replenishment, to improve the shelf space (Europe and GmbH, 2001).
<b>Accuracy</b>	Multiple forecasts for supplier, manufacturer, and retailer	Multiple forecast updates. Separately updated the new product promotion, assortment, and forecast plan among partners. (Freitas, 2019).	There is a lesser chance to adjust the strategy for the new item. CRP is best for single product forecast and supply (Nimmy, 2019)	Chances of a duplicate forecast for retailer and manufacturer due to total dependence on a single player. (Tyan and Wee, 2003)	Single forecast for supplier, manufacturer, and retailer (Tyan and Wee, 2003)

### Benefits of CPFR Over Previous Strategies

The above table shows the clear difference between CPFR and the other strategies. CPFR will adopt comprehensive approaches, while other strategies are limited to just one or two factors. It also highlights the need for more planning problems in other strategies. The textile sector is a

complex structure of different departments which are interlinked. Proper planning is an essential part of fulfilling customer demands on time. CPFR is the best strategy that will give the optimal solution and make the joint plan of all the suppliers, manufacturers, and retailers, which will cover everything from raw fabric to delivery. All departments in the industry will be well aware of the information and, as a result, will properly guide the customer and share accurate information. As a performance indicator, Sung et al. (2018) explained that the collaboration among the suppliers reduces the cost and increases the profit for both supplier and vendor. CPFR generates a single forecast for all the suppliers, retailers, and manufacturers. At the same time, other strategies generate multiple forecasts for all that create the problem. An exact forecast and the correct mix of forecasting behaviors are significant for a productive stock advancement (Kumar, 2019). CPFR will solve this and make the one target for all to achieve. Minimizing the differences between the forecasts and preparing a mutual replenishment policy for all is best.

### **Research Methodology**

The selection of data collection methods is based on the type of research question used. The case study method is adopted to understand the research question. For the implementation of CPFR, many supply chain networks were examined. It is an explanatory study. All the data were gathered through the supply chain of the company. The unit of analysis was organizational documents. Interviews were conducted with the individuals working at the strategic and tactical levels. Data were gathered through semi-structured interviews by the individuals, documentation (Danese, 2007), documents (letters, agendas, progress reports), and Interviews (but also focused, semi-structured) (Yin, 1994). The data sample used in qualitative research may not be large enough because of some limitations of qualitative technique through this strategy (Yin, 1994).

The researcher collected the data by interviewing individuals from organizations participating dynamically in forecasting. As indicated by Stroup et al. (2000), an Interview is an apparatus to comprehend individuals from their particular perspective. A pre-designed questionnaire was used as the interview procedure in semi-structured interviews. Semi-structured interviews are precise with wordings and take after a succession of inquiries to be inquired. The main disadvantage of this strategy is that it is less adaptable as inquiries are performed. Further, these inquiries were combined with official documentation from each organization, like the organization report (Stroup et al., 2000).

For the data collection, the study focused on the strategic and tactical levels of the whole supply chain. It is essential to retain names and other information confidential regarding firms or persons in the interviews. The Interview is essential for getting information about case study research (Yin, 1994). Walsham (1995) suggested that tape recording of interviews provides a complete description of interviewee responses and comments. After conducting the sessions, it was clear that the CPFR programming is utilized to get an acceptable thought of the collaboration planning, forecasting, and replenishment.

### **Analysis**

In this study, we used NVivo software for data analysis. NVivo is computer software used in qualitative data analysis. It has been projected for subjective analysts working with affluent substance-based and media data, where significant levels of examination are needed on little or extensive volumes of data. The First step in NVivo is making a node. Making a node is fundamental to understanding and working with NVivo. It allows researchers to collect related



material in one place to scan for rising precedents and observations. In this study, the researcher can compose nodes for topics or ‘cases, for example, individuals or associations.

### Company A

It is a renowned industry in Pakistan, also listed on the Pakistan Stock Exchange Limited. The company contains a complex structure of weaving, dyeing, spinning, and stitching units engaged in the manufacturing and selling of denim products, yarn, denim, and denim, with three production units.

### Company B

This company is one of the largest manufacturing and export industries in Pakistan. It is the first industry to build the Six Sigma philosophy and implement the RFID strategy with all the major suppliers.

### Company C

Lahore is a privately held, fully certified company. 25 years of skill in manufacturing and exporting all types of Socks and Leggings for the global market.

**Table 2 Demographic**

<b>Respondents</b>	<b>Gender</b>	<b>Experience</b>	<b>textile industries</b>	<b>Designation</b>
Respondent 1	Male	7-10years	Industry 1	AM
Respondent 2	Male	7-10years	Industry 1	DM
Respondent 3	Male	7-10years	Industry 1	DM
Respondent 4	Male	7-10years	Industry 1	AM
Respondent 5	Male	1-3years	Industry 2	AM
Respondent 6	Male	4-6years	Industry 2	AM
Respondent 7	Male	7-10years	Industry 2	DM
Respondent 8	Male	1-3years	Industry 3	AM
Respondent 9	Male	4-6years	Industry 3	AM
Respondent 10	Male	4-6years	Industry 3	AM

### TEXT search query

A word tree is created as part of a text search query. See below the picture of the encompassing words and phrases from the information. In our study, we run the text research query with the research’s central theme, collaboration. The result of the query gave the main idea of the research. To get a more precise result, click the left and right on the branches of the focal word to see the entire sentence or phrase. This visualization provides an idea to gain a general idea of the word used in its various forms.

Figure 5 Text query search-a

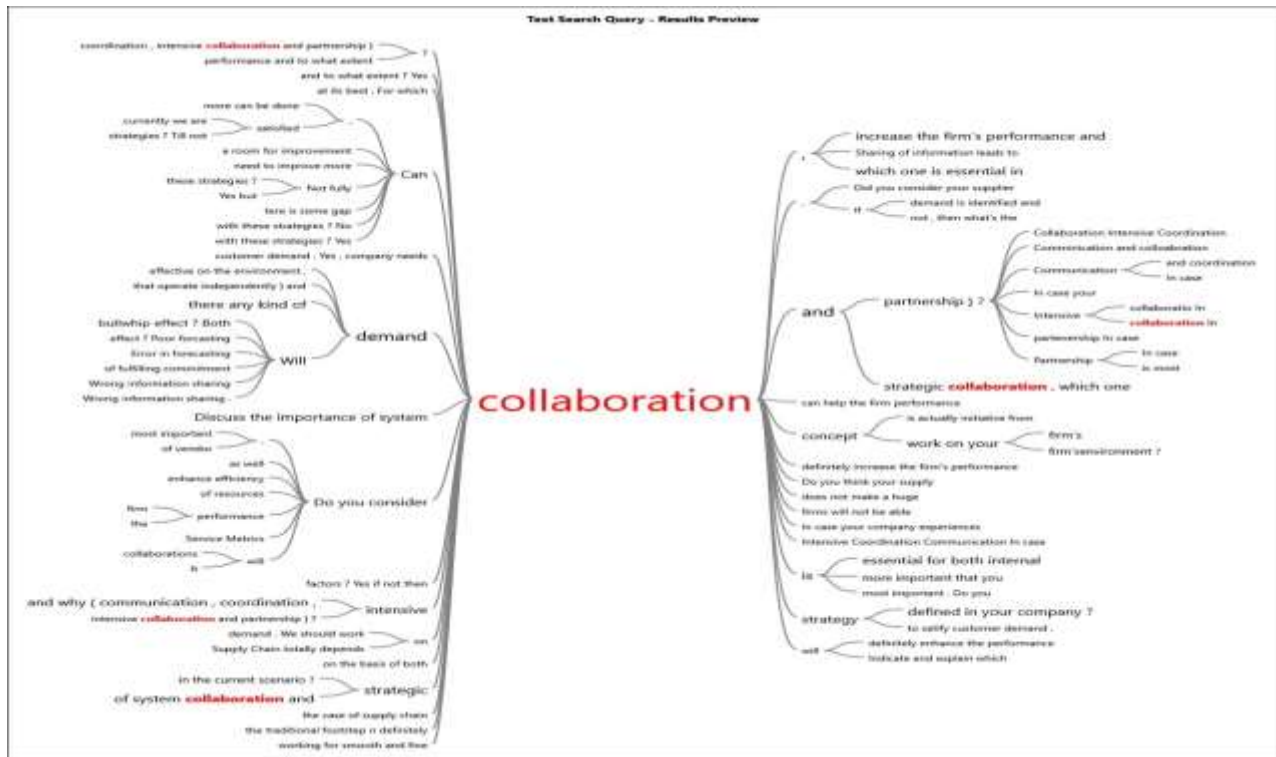


Figure 6 Text query search-c

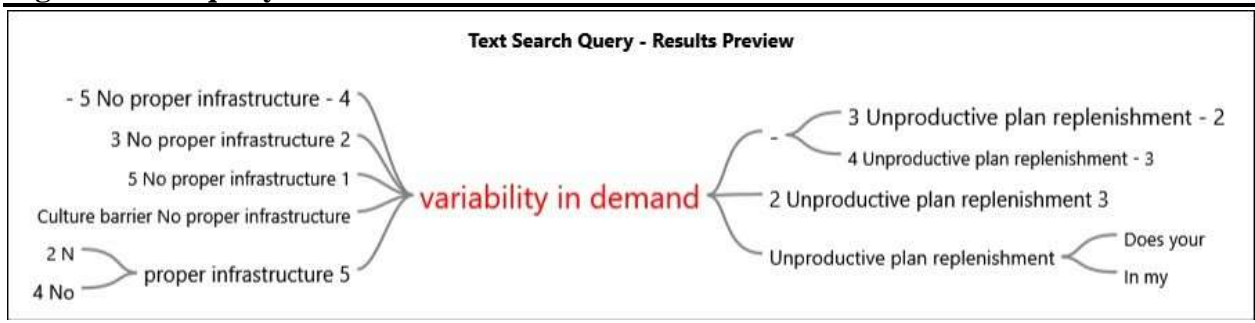


Figure 7 Text query search-c

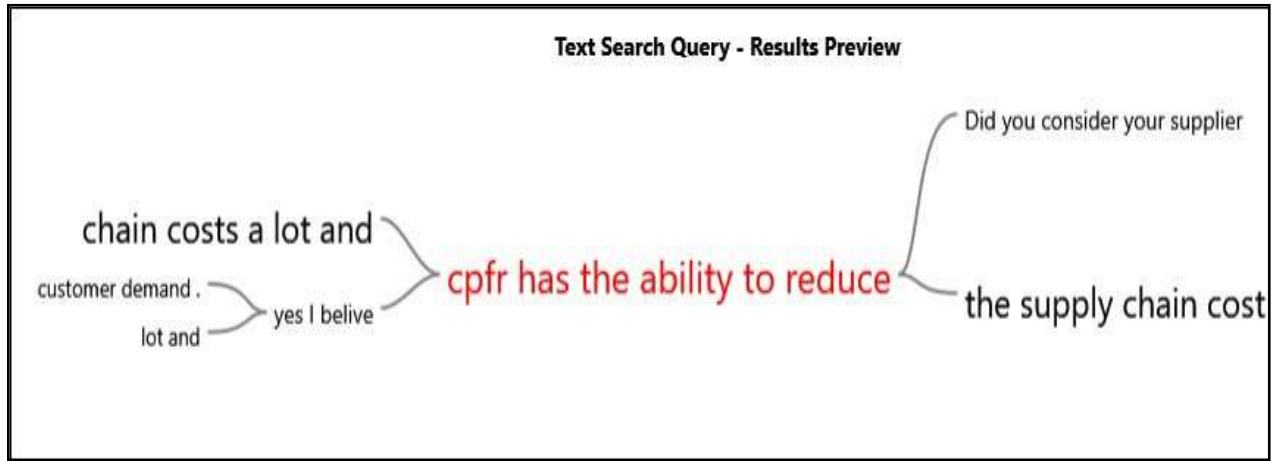


Figure 8 Text query search-d

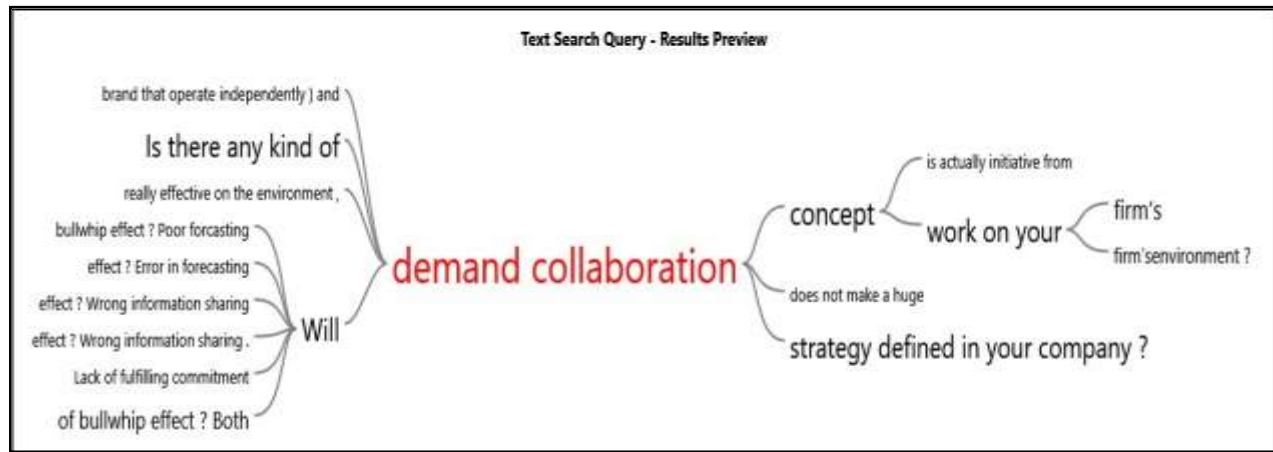


Figure 2 is about the text search query highlighted the issues in the textile sector concerning the respondent view. It also considers that the demand collaboration concept will solve this issue by proper planning and improving the forecasting method. Figure 4 of the text search query highlights that CPFR can reduce the supply chain cost according to the respondent. Figure 3 of the text search query shows that uncertainty in demand is due to a lack of proper infrastructure and an unproductive replenishment plan. The culture barrier is the major hurdle in implementing the framework.

### Word Cloud

Word cloud is created as part of the text frequency query. A word cloud comprises the most essential words in this report. Words' sizes and other visual qualities demonstrate their significance in content or content quantity or information collection. Fig.15 was generated due to a text frequency query focused on collaboration; the font size of this word emphasizes how often this word has been repeated in this research. The word demand under the collaboration defines and relates to the research question. In this picture, the other words, the bullwhip effect, which is the

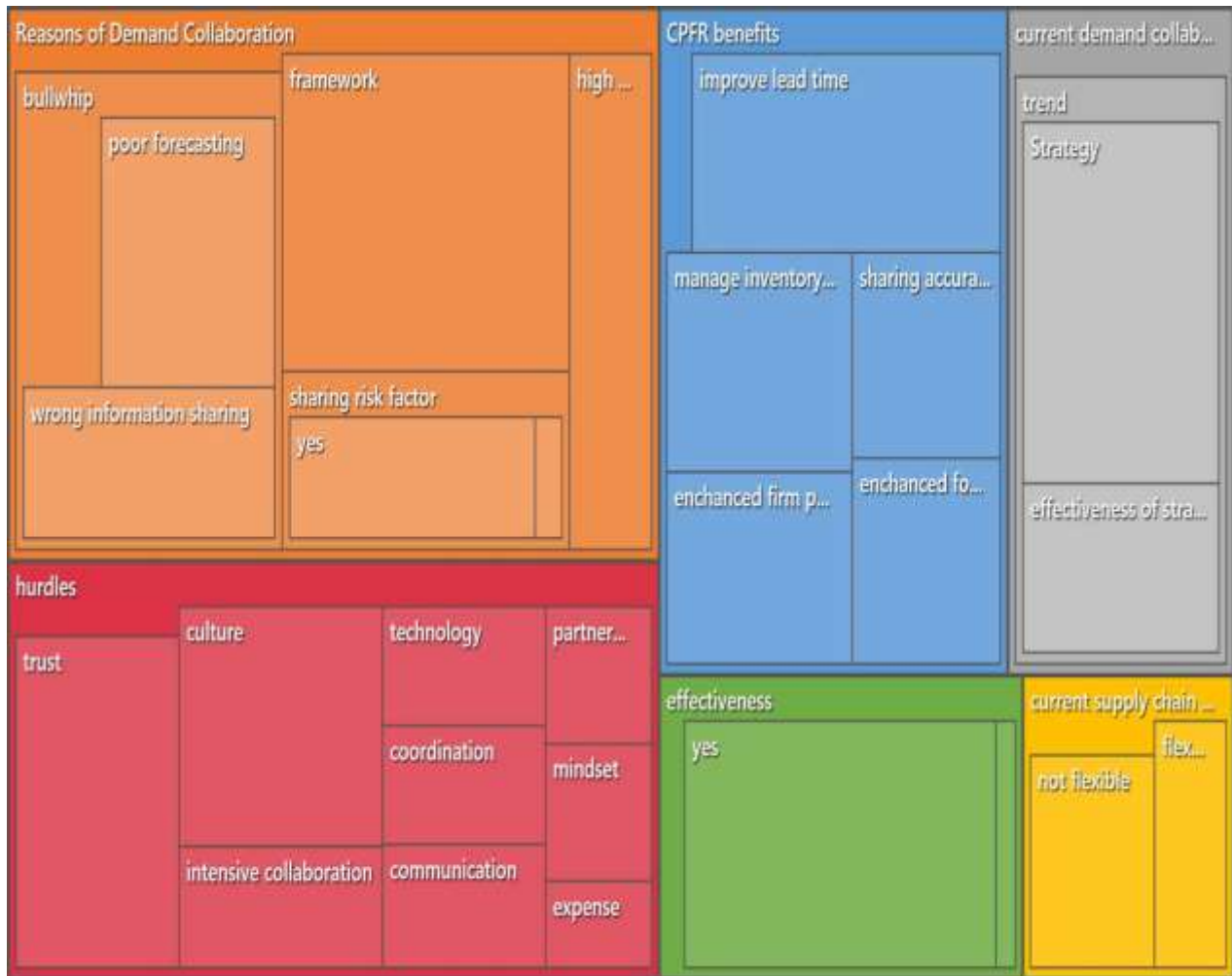
reason for the demand for collaboration. CPFR, under the word demand, is mentioned as the solution to deal with all the problems in the supply chain and make the supply chain flexible.

**Figure 9** Word cloud query



### Hierarchal chart

The Hierarchy Chart of this study shows the visual portrayal of the information.

**Figure 10 Hierarchical**

The orange part of this chart represents the reasons for demand collaboration, which are the bullwhip effect, the need for a proper framework, the supplier's need to share the risk factor, and the high cost of the supply chain. The bullwhip effect is based on two reasons: one is poor forecasting, and the second is wrong information sharing. The blue part of the chart represents the benefits of the CPFR, which are to improve the lead time, manage inventory, share accurate information, and enhance firm performance and the forecasting method. The grey part represents the current supply chain trend and the effectiveness of these trends. The red part of this chart represents the hurdles in implementing the CPFR model: culture, mindset, technology, trust, coordination, intensive collaboration, communication, partnership, and expansiveness. The yellow part signifies the flexibility of the current supply chain. The green part represents the effectiveness of the CPFR. The area in the green part is covered by 90% of the respondents who said yes, that CPFR would effectively deal with all the hurdles in the supply chain.



Projected Map

Figure 11 Projected map (issues in the supply chain)

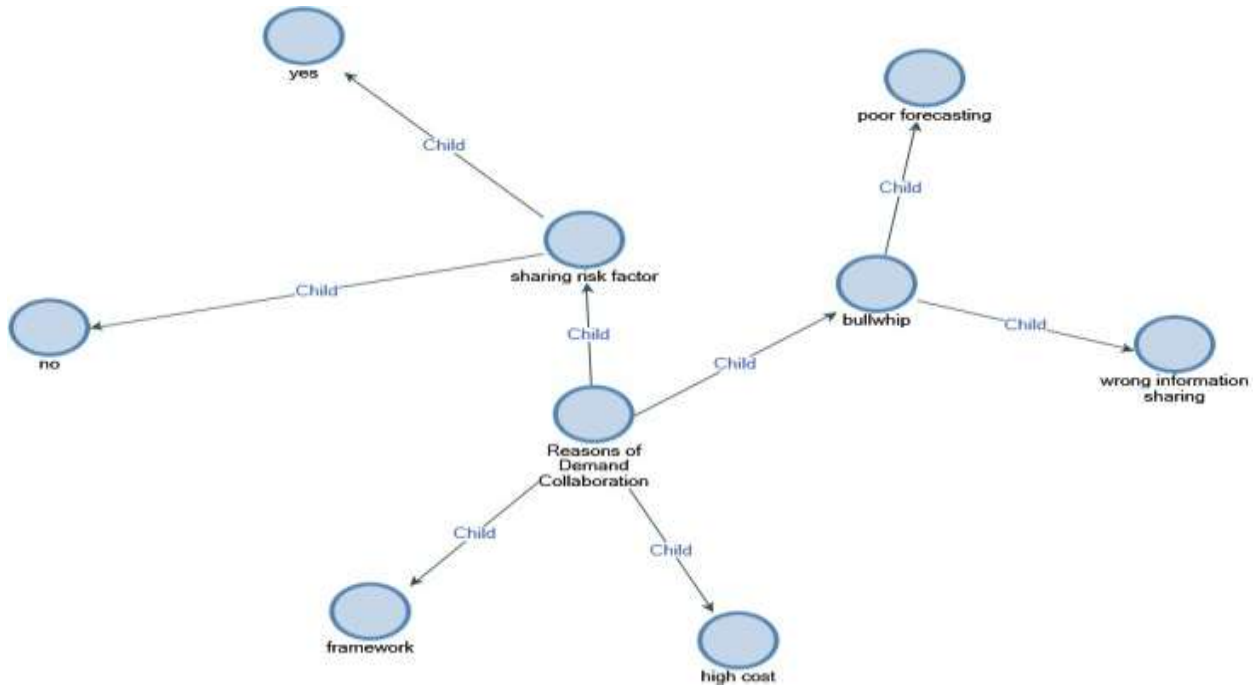


Figure 11 of the projected map shows issues in the textile sector; these issues are the main reason for implementing the framework of demand collaboration in the textile sector. This figure identifies the four primary reasons: the high supply chain cost, bullwhip effect, sharing risk factor, and the lack of proper framework.

Figure 12 projected map-b (current trend)

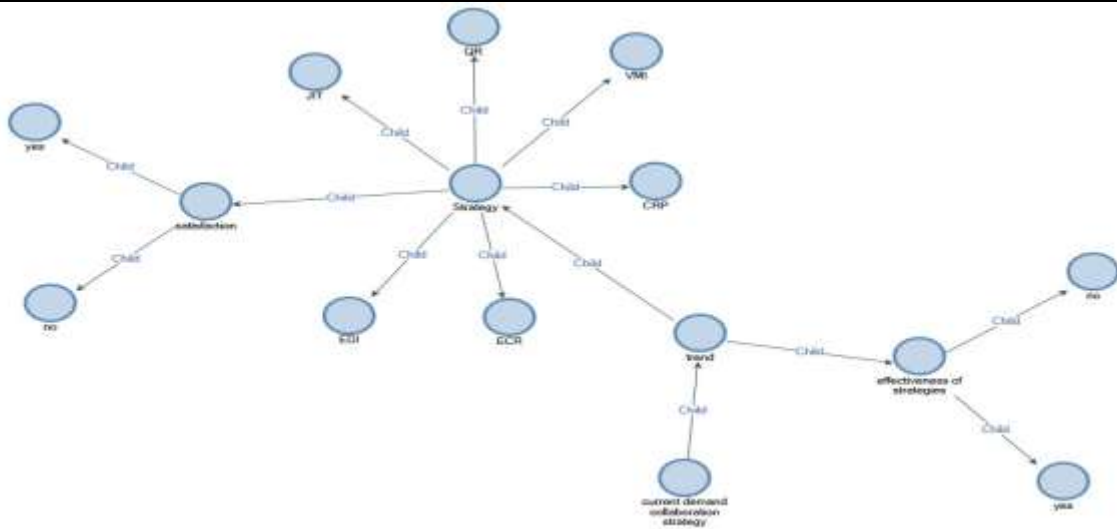
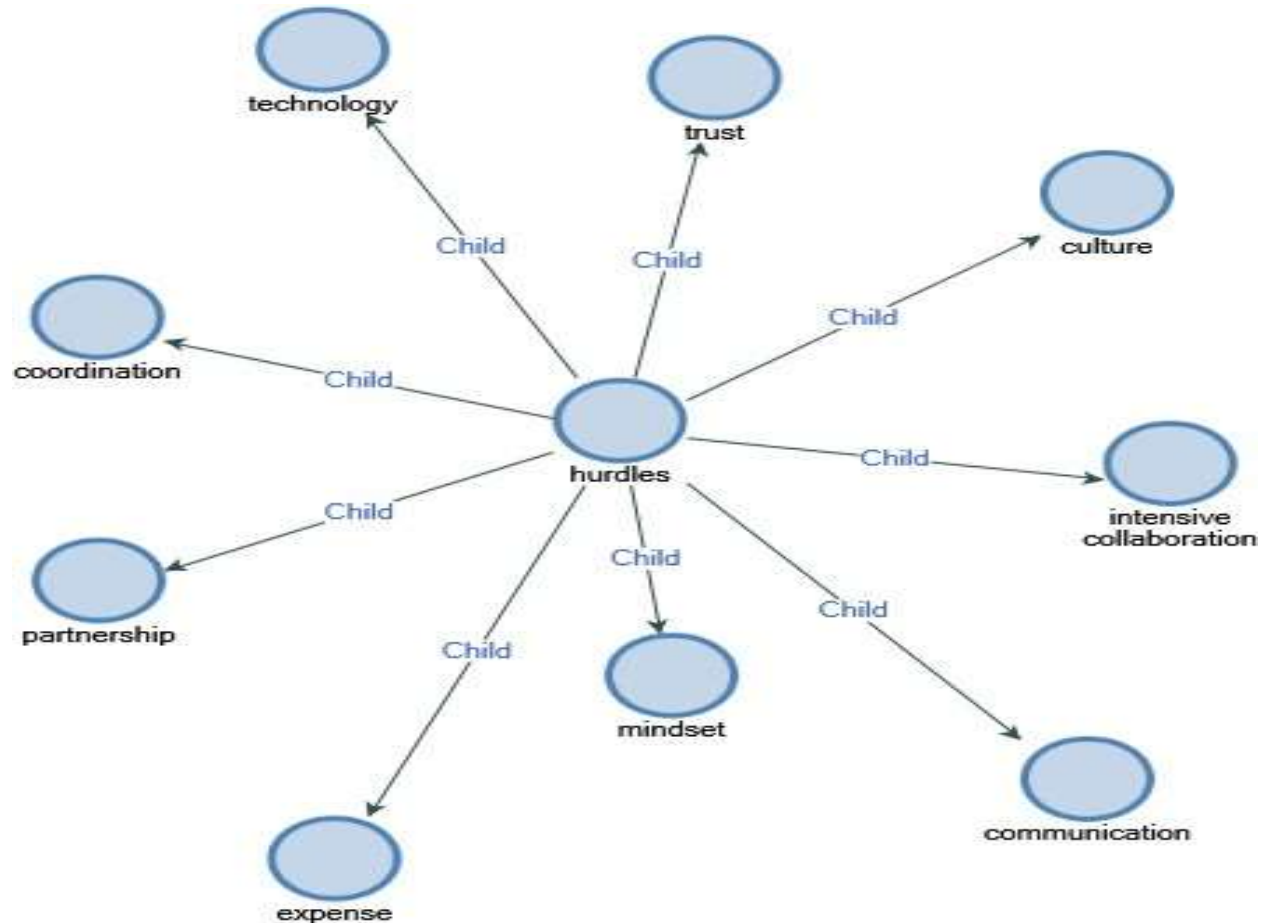


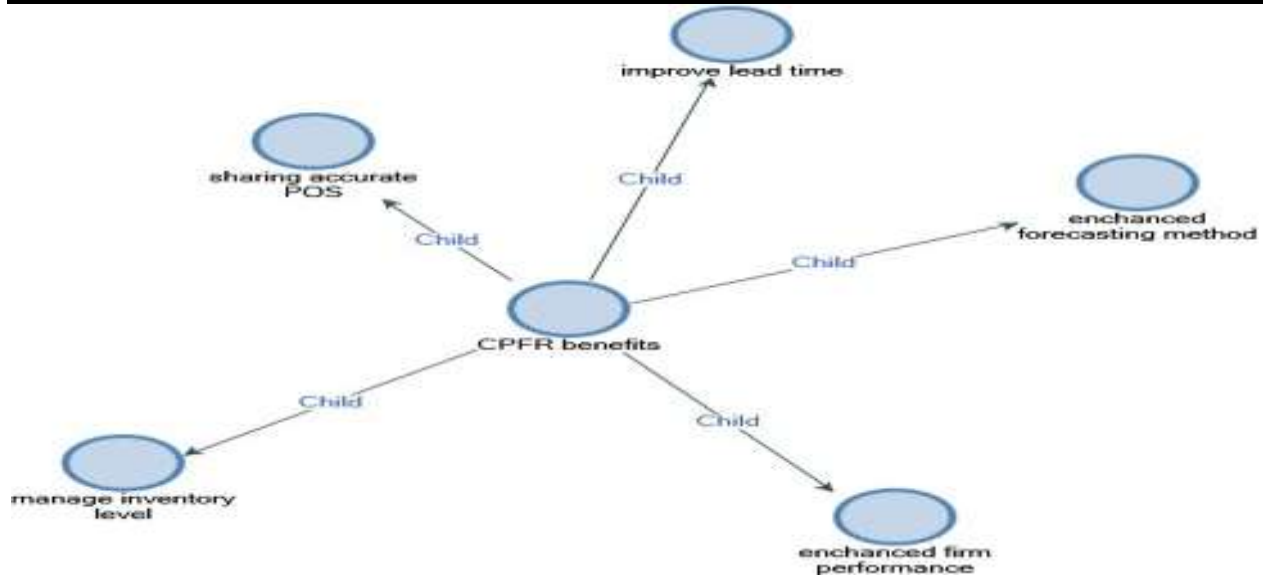
Figure 13 shows the current trend of demand collaboration in the industry. These trends are ECR, JIT, QR, CRP, and VMI. This figure also shows the respondent's views regarding the satisfaction level of these strategies. Most respondents said these strategies are not as

**Figure 13 Projected map-c (hurdles)**



The above figure shows the hurdles in implementing a demand collaboration framework in the textile sector. According to the respondent, these hurdles are typical mindset, communication, intensive collaboration, coordination, expenses, partnership, lack of technology, and trust. This figure also gives us a path while handling these issues and would help implement the CPFR framework.

Figure 14 Projected map-d (benefits)

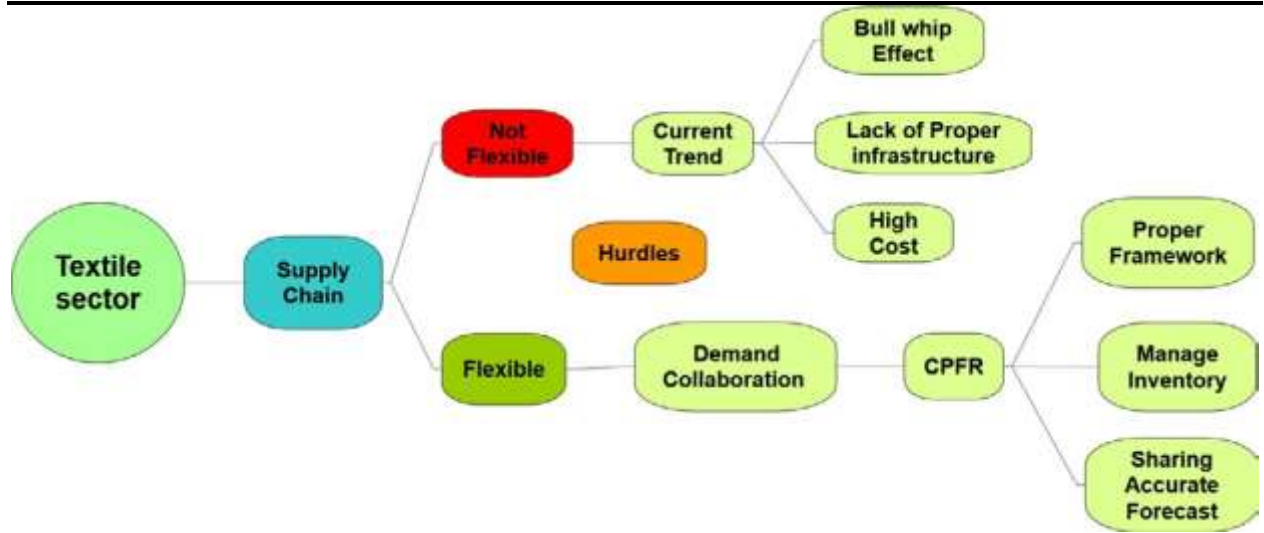


The above figure explains the benefits of the implementation of the CPFR framework; according to the respondents, CPFR will help to manage the inventory level, share the accurate point of sale (POS) with suppliers and customers, improve the lead time, improve the forecasting method and in result will enhance the overall performance of the firm.

**Mind map**

A mind map is a concept map that helps to map out the ideas to explore and present the central theme in this study. Below is the mind map of this study.

Figure 15 Mind map



The main focus of this study is a textile supply chain. The textile sector is the central concept, and the supply chain is the sibling node of the central concept node. Then comes the idea of flexibility

and non-flexibility of the supply chain. These two nodes have a sibling node idea of the current trend and demand collaboration. Current trends are the sibling node of the non-flexible supply chain; it has the child node, which represents the problems in the current supply chain, such as the bullwhip effect, lack of proper infrastructure, and high cost.

The red node in the mind map shows the various issues in the textile sector. The sibling node of a flexible supply chain explains the first research question and highlights the main issues in the demand collaboration process in the textile sector. The green node guides the framework of the CPFRR and gives the proper guide to solve the various issues in the textile sector. The second node explains the second research question and provides the optimal solution to deal with issues in the demand collaboration process with the proper framework in CPFRR form. The hurdle is the floating idea, which is the problem in implementing the CPFRR infrastructure in the textile sector.

### **Proposed model of the CPFRR for the textile sector in Pakistan**

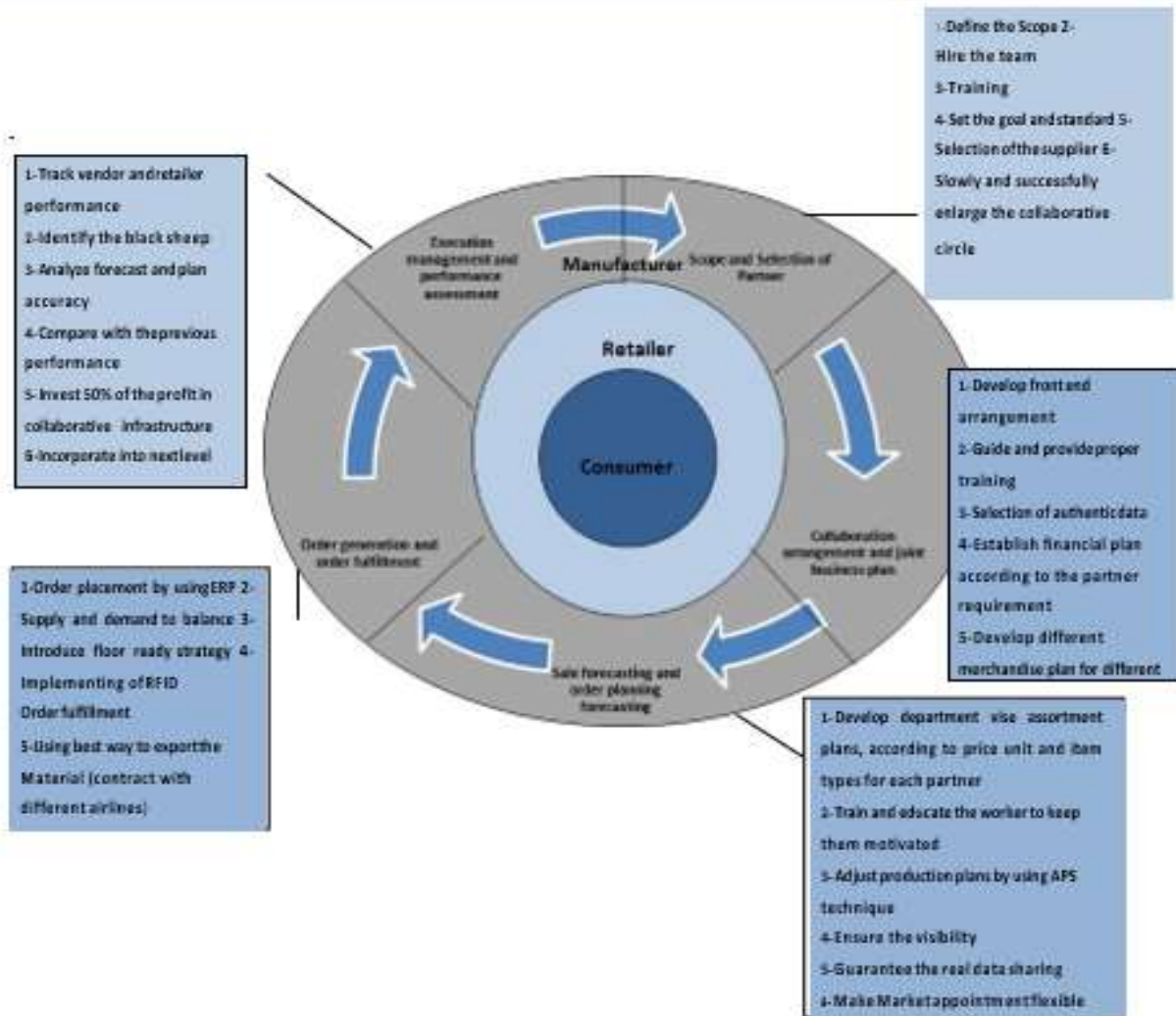
CPFRR deals with the hurdles in the supply chain, but all the other hurdles are interlinked.

**Table 3 Hurdles in the textile supply chain**

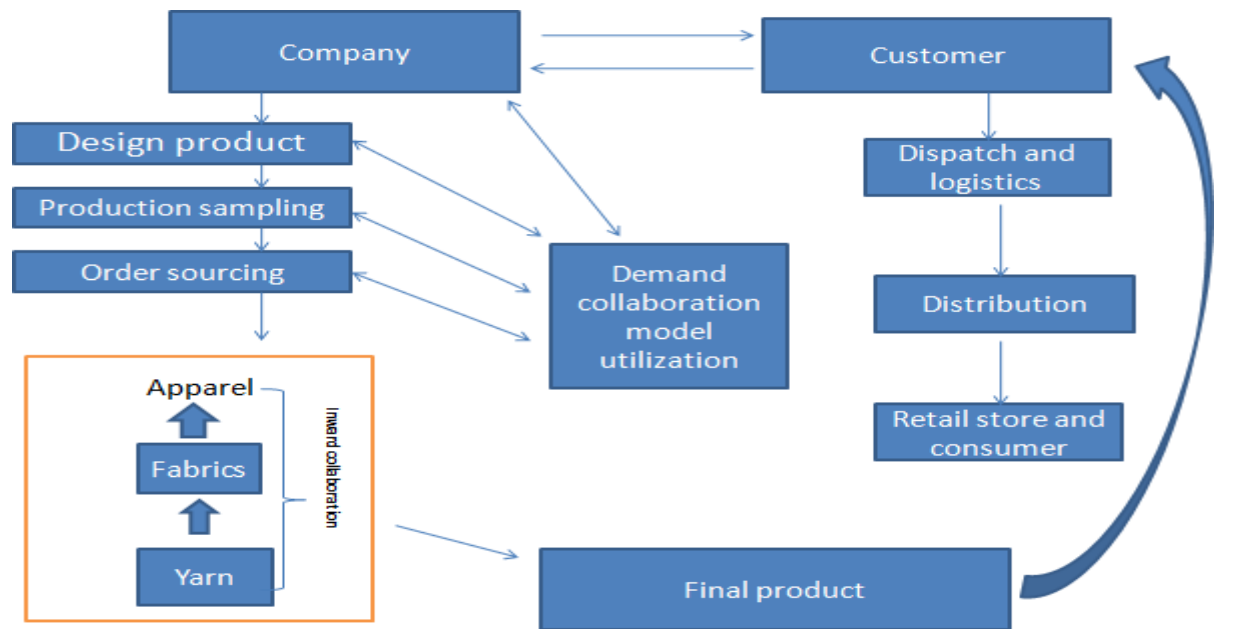
<b>External hurdles</b>	<b>Internal hurdles</b>	<b>Supply chain hurdles</b>
High rates	Inefficient Approach to Research and expertise	Lack of Inventory Planning
Monetary Policy	Lack of Technology	Non-availability of Professional Planners
Price of Raw Material	Turnover of workers in Textile Industry	Weak Roads Infrastructure
Lack of Investment	Equipment and mechanism	Lack of IT infrastructure
Removal of Subsidy	Mixing of Cotton	Inefficient Labor Productivity
Law and Order Situation	Under-utilization and lack of excellence in Processes	Lack of Time Management
Power Crisis	Lack of quality in R and D	Lack of Entrepreneurship
Eradication of Quotas	Quality in HR	Typical mindset

### Conceptual Framework

Figure 16 a proposed model of CPFR





**Figure 17 Operational Framework**

## Discussion

Textiles are Pakistan's most significant assembling area and have the longest assembling chain. This study helps develop and understand the effect of cooperation in the textile industry and also indicates the factors affecting the implementation process of collaborative strategy CPFR. It makes it easy to believe that great benefits come in the way of the supply chain of the textile sector when working with cooperation, even when there are many uncertainties present in the environment. It gives benefits to both the buyers and suppliers equally. Significant problems in the textile sector are due to poor planning and the lack of demand collaboration strategy. Collaboration in the textile sector will increase the competitive advantages, lower inventory levels, and reward both partners equally. Buyers and suppliers. This study focused on the textile complex cluster and its current supply chain practices. Also, it measured the critical variable of CPFR and its relationship with the competitive performance of the textile sector in Pakistan. CPFR in the textile supply chain is among merchants and customers (supply chain partners) existing in the chain. Different collaborative strategies in a market like VMI, ECR, and CRP exist. Nevertheless, CPFR in the supply chain can enhance performance (Singhry & Abd Rahman, 2018). It is an idea that expects to help supply chain incorporation by supporting and helping mutual efforts.

## Conclusion

CPFR considers continuously updating inventory and upcoming necessities, making the end-to-end supply chain process more fruitful. It helps build relationships, more significant sales, category management, improved order forecast accuracy, better-quality product offerings, inventory reductions, and increased customer satisfaction. The indicators of CPFR are top management commitment, trust, culture, cost, durable relationship, information sharing, and risk and incentive sharing. The results of this study show that top management support, cost, culture, and trust among the suppliers are the major hurdles to implementing the CPFR process. Top management

commitment, cost, and trust are the most critical factors for implementing CPFR with the suppliers (Cristea & Khalif Hassan, 2018).

FREITAS et al. (2018) also considered the cultural and behavioral barriers as the most critical factors for collaboration. The fundamental target of this examination is to build up a system for production network coordinated effort amongst manufacturers and retailers, which incorporates administrative, behavioral, and specialized issues. One research should have investigated the fundamental measurements of mutual effort between Supply chain collaborators. More comprehensive research that focuses on and contains the points of view of all individuals associated with an organization would demonstrate comprehensibility. Another limitation was that minimal studies had been found in the Pakistan context concerning CPFR. As a research gap, this is significant to address the downstream cooperation in the supply chain. The importance of CPFR needs to be investigated, which could be helpful for the enhancement of competitiveness of the existing Pakistani textile industry.

So, there is a more prominent need to concentrate on CPFR in the supply network, experience, and advantage of data sharing in manufacturing associations. Likewise, it discovers the best approach to conquer the other variable that is not precisely part of the supply network but directly impacts the textile sector's supply network; it also discovers the effect of IT foundation on the execution of CPFR. This study was conducted in only one city, so generalizations are limited. Moreover, there are improvements to be made in the sample design to allow for further validation and enhancement of the model and method. The future focus of the study is to determine how and under what circumstances CPFR has the most significant effect and will be of benefit.

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