A Cross Country Research Review with Special Reference to Management of Inventories in Textile Industry

[1]**Numaira Showkat**, Research Scholar, Department of Management Studies, University of Kashmir.
[2]**Dr. Khurshid Ali Ganai**, Assistant Professor, Business Division, Higher Colleges of Technology, United Arab Emirates.
[3]**Dr. S.M. Shafi**, Professor, Department of Commerce, University of Kashmir. , University of Kashmir

Abstract: **Inventory management aims at optimizing the size of inventory in a firm so that smooth performance of production and sales function may be possible at minimum cost. The Inventory is a major constituent and component of working capital in almost every business concern. The success and failure of any business firm depends upon its inventory management performance to a great extent. Mismanagement of inventories and absence of control systems have resulted in terrible performance for some of the industries in developing economies. There is an abundance of literature, methods, models and computer analysis which have evolved from time to time and are highly availed of in the realms of industrial settings with greater pay-off of quality, precision and non-blockade of working capital. The paper is aimed to study how inventories in textile sector are managed across the globe. An attempt has been made to summarize and present the theories, techniques and important concepts of inventory management especially in textile sector.**
Textile industries have been playing an important role for the socio-economic development of any country. This paper will attempt to unravel the research findings on management of Inventories in textile industry across the world. The inventory management as a subject becomes all the more important because of the fact that it is the largest employer with a workforce of more than 35 million.

Keywords: **Inventory management, Working capital management, Re-order level, Liberalization, Socio-economic development, Textile industry.**

Introduction

Inventory management is a science primarily about specifying the shape and percentage of stocked goods. It is required at different locations within multiple locations of a supply network, to protect the regular and planned course of production against the random disturbance of running out of the materials or goods. Inventory management also concerns fine lines between the replenishment lead time, carrying costs, asset management, inventory forecasting, valuation of inventory, future inventory price forecasting, physical inventory, inventory visibility, available space for inventory, quality management, replenishment, returns ,defective goods and demand forecasting.

Inventory is the total amount of goods or materials contained in a store or factory at any given time. A store owner needs to know the exact number of items on the shelves and storage areas in order to place order or control losses. Possessing high amount of inventory for long periods of time is not usually good for a business because of inventory storage, obsolescence, and expiry, spoilage costs. On the other hand, the possessing of too little inventory isn't good either, because the business can face the risk of losing out on potential sales and potential market share as well. Undoubtedly more business failures are caused by an overstocked or under stocked condition than any other factor. Inventory management strategies, such as a (J.I.T) just-in-time, is a tool which can help minimize inventory costs because goods are created or received only when needed.

A microeconomic theory of inventory behavior begins by specifying a reason why firms hold inventories. Inventories can be held to improve production scheduling, to smoothen production in the face of fluctuating sales, to minimize stock out costs, to speculate on or hedge against price movements, to reduce purchasing costs by buying in quantity, to shorten delivery lags, and so on. It is evident that no model can explain the rich variety of inventory behavior; an explanation that is plausible for one industry or type of inventory may be implausible for another. Any abstract theory of inventory behavior must simplify and generalize.

Inventory management systems are mostly applied in manufacture settings, where its viability   and potential economic value are duly attained. The average business has 30% of its working capital tied up in inventories, while as, about 70% of its investment is in the plant and equipment (Sharma, 1984). Many inventory management systems and control techniques have come up over a course of time and are being used by manufacturing and service organizations depending upon their specific requirements. The Study of inventory problems dates back to 1915, when F. N. Harris developed a very simple and useful model of an inventory problem (Shore, 1980). The framework for inventory models which formulate a basis for inventory management control techniques are discussed as follows:

Inventory Models

The General framework for inventory models has five components which follows as

1.   Demand

Demand is an indispensable component of inventory management. Inventory decisions are always made with reference to the future demand. The decisions are taken when the manager is certain about the requirements in his department and again when the certainty is not ensured. The later state tells nothing about the likelihood of future levels.

2.   Order Quantity

After determining the quality to procure, the buyer must decide as how much to buy. Most material requirements are continuing requirements, cumulative or total needs. Such a system of requirements is a far better guide than the day to day needs. In the procurement function, there is a need for a most suitable and economical quality of material, thus there is also a requirement for a most economical ordering quantity.

The economic order quantity should be established in such a way so as to balance all the variable costs of inventory. The variable costs of inventory are those which vary with the size of the order quantity. The objective of economic order quantity calculations is to determine an order quantity so that the total variable cost of inventory is kept to the minimum.

3.   Lead Time

There is always some interval between the time that the need for material is determined and order placed and the time this material is actually manufactured and delivered. This gap period is the lead time. The longer the lead time, the more time is required to get the results of production and vice versa. Inventories rise when lead time increases to maintain plant operations. However, no safety stocks would be required, if lead time is zero, as replenishment of the stock can be done immediately without any problem.

4.   **Safety Stock**

Most firms maintain some margin of safety or safety stock to satisfy the demand at a particular time. In this connection, the order point is a predetermined signal which will indicate to the stock controller that he should consider the possibility of reordering the stock item in question. It is expressed in units of material as it is stocked and ordered. Whenever, an issue from stock causes the coverage of an item to drop below this pre-determined point, the item should be investigated. The order point must be selected at a figure high enough so that the state will be sufficient to satisfy the maximum number of expected demands upon the stock during the period when the replacement stock is on order.

Thus, "safety stock" is referred to an extra inventory needed to protect against unrealizable and inaccurate forecasts. Excessive safety stocks boost inventory investment; inadequate safety stocks fail to have the desired protection against stock outs. Thus when forecasts of lead time and usage are perfectly accurate, then:

Maximum inventory = order quantity + safety stock
Minimum inventory = safety stock
Average inventory = 1/2 of the order quantity + Safety stock (if usage is steady)

5.   Cost of Possession of Inventories

It is an admitted fact that the carrying of inventories involves and exorbitant cost. According to the findings of Professor Alford and Bangs, "the annual cost of carrying a production inventory average approximately 25 percent of the value of the inventory". Everett Welch has also found that, "the annual carrying costs of inventory average somewhat over 20 percent of the total inventory value, exhibiting a range of some 10 to 34 percent". Since there are numerous costs involved in holding inventories, but the main costs involved in possession inventories are as:

S.no.	Different Costs	Costs Explained
1.	Cost of Capital	The ratio of sales to inventory should be calculated to ascertain.
2.	Insurance Cost	The Company may be required to pay insurance charge to insure their assets.
3.	Property Taxes	Property taxes are levied on the assessed value of a firm's property.
4.	Storage costs	The storage cost includes rent for storage facilities, Salaries, personnel and related storage expenses.
5.	Obsolescence and Deterioration	The larger the inventory, the greater is the absolute loss from this source.
6.	Acquisition cost	The cost of stocking material and the quantity discount available for the item being purchased.
7.	Purchase cost	Larger orders reduce most other costs; simple large order instead of a number of small orders is advantageous.
8.	Ordering cost	Order costs may be substantially high if the purchase lots are in small items and vice versa.

However, for the proper management of inventories, various techniques have been developed over the time which has proven to increase the efficiency in inventory management. The important ones are discussed in the table below:-

1.	**ABC Analysis** (Always Better Control) or CIE (Control By Importance and Exception)	It aims at keeping the investment low and avoids the stock out of critical items at the same time. This system takes into account by classifying items by value of usage. The high value items have lower safety stocks, because the cost of protection is so high. However, the low – value items carry much higher safety stocks.
2.	**HML Classification** (high, medium and low)	As the name itself implies, the materials are classified according to their unit value as high, medium or low valued items.
3.	**XYZ Classification**	X items are those whose inventory values are high, Z items have low inventory values, and Y items fall in between these two categories.
4.	**VED Classification** (vital, essential and desirable)	The VED classification is applicable largely to spare parts. Spares are classified as vital, essential and desirable.
5.	**SDE Classification** (scarce, difficult and easy to obtain)	The SDE classification is one where the materials are sorted as scarce to obtain, difficult to obtain and easy to obtain.
6.	**GOLF Classification**	In GOLF material classification is as per the nature of suppliers. G category covers Government supplier, O implies open suppliers, L implies Local suppliers and F refers to foreign suppliers.
7.	**Limit Technique** (Lot Size Inventory Management Interpolation Technique)	LIMIT is designed to handle a family of items which passes over common manufacturing facilities. All the parts that pass through a screw machine, department or a milling machine department would be logical groups to be handle with LIMIT.
8.	**Two Bin System**	When the order is delivered, the reserve supply is brought up to its former level, and the balance of the order is put into the other bin to be drawn on for immediate needs.
9.	**Economic Order Quantity (EOQ) Concept**	Economic order quality is referred to that size of order which gives maximum economy in purchasing the materials. formulae for calculating EOQ is as: $$EOQ = \sqrt{\frac{2 \times (\text{Annual usage or demand in units}) \times (\text{order cost in re - order})}{(\text{Unit cost of material in Re. unit}) \times (\text{carrying cost in \% year})}}$$

The solution of the inventory problem is to find the approximate levels for holding inventories and the ordinary sequence and the quantities so that the total cost incurred is minimized. The demand and supply conditions impose the constraints within which the relevant costs have to be optimized. The three conditions can be termed as the demand being certain, risky and uncertain respectively. On the supply front, there are two possibilities which can be termed as static, if only a single supply is possible during the consumption period; and dynamic if otherwise. From the discussion, the various concepts relating to inventory and its management are cleared. The conceptual clarity is essential for understanding the subject of inventory management in its right perspective.

Textile Industry

Almost every developing nation has textile manufacturing which is among the first industries to be established. The textile industry is primarily concerned with the production of yarn, and cloth and then the subsequent designing or manufacture of clothing and their distribution. There is such a diverse product and application range of textiles, the type of processing used is highly variable and depends on site-specific manufacturing practices.

Clothing and apparel constitutes around 5.7 percent of total exports in the world at present. This trade is expected to increase to US $1 trillion by 2020. World is becoming a smaller place when it comes to textile trade. In the beginning of 21st century, the largest

importing and exporting countries were developed countries like European Union, the United States, Canada and Japan. The countries with the largest share of their exports in textiles and apparel now are china (119 billion US$ accounting for 37.6 percent of total market share) followed by European Union (74 billion US$ accounting for 23.5 percent of total market share). China alone produced around 79 billion of cloth in 2017 and 5.99 Million metric tons of cotton in 2017-18. India is also amongst top textile producing countries in the world with exports of US$ 18 Billion in 2018. This is also leading cotton producing country. In 2017-18 cotton production in India amounted to around 6.21 million metric tons, making it the leading producer of cotton.

Statement of the Problem:

Inventories have come to be recognized as a vital problem area needing top priority in such a rapidly growing sector. Apart from firefighting and adhoc measures, hardly any organized approach seems to be in vogue in most of our enterprises. For concrete results on sustained basis, the basic cause at the root of the problem needs to be identified and dealt with efficiency. Inventory control thus deserves highest attention. Inventory control is a technique that helps in maintaining stock at an optimum level. The reason of carrying inventories is to ensure regular supply of materials as and when required. Insufficient inventories might hamper production process and mitigate the sales volume, while as too much inventories tie up working capital and increase carrying costs. Therefore the necessity is to strike balance between stock out and excessive stock. It is essentially important to maintain the inventory level in the sector which is a fast growing sector all over the world.

The process of inventory management has gained importance all over the world, in India with the increase in the size of business enterprise, complex production technology and the adoption of professional management techniques inventory management has become a necessity. India has 1900 cotton textile mills and 50 million spindles as on date. While yarn is mostly produced in the mills, fabrics are produced in the power loom and handloom sectors as well. The industry continues to be predominantly based on cotton; 65% of raw material consumed is cotton. One estimate is that in India over 60% of the spindles are more than 25 years old. Obsolete machinery leads to low output and poor quality of goods. As a result Indian textile industry is facing problems in facing global competition. The present study is aimed to explore the researches on inventory related issues keeping in view the following objectives:

Objectives

1.   The first objective of the study is to make an in-depth research and literature review in the area of inventory management systems with particular reference to Textile Industry.

2.   The second objective of the study is to examine the Inventory management system presently prevalent in the textile industry and to examine the weakness, if any.

Research Review

Nikos,I Karacapilidis and Costas P, Pappis, The authors study was related to textiles, in which they found that the advent of the information technology in textile sector has given rise to new approaches based on direct involvement and interaction of the user when applying respective decision aids in the form of software tools. A textile production unit is characterized by a multi-phase manufacturing process with multiple production units per phase (i.e., parallel machines). The mixed character of a textile production system makes production management quite complex.

Mohammad Morshedur Rahman-2011, the author has mentioned that the textiles industry has played a vital role in the socio-economic development of Bangladesh, but profitability of textile industry is not satisfactory. He has observed that profitability and Working Capital Management position of the Textiles Industry are not satisfactory which revealed that Correlation exists between Working Capital Management and Profitability. His study also shows that Working Capital Management has a positive impact on Profitability.

Ian M.Taplin-2006, while studying the EU textile and clothing industry, the researcher found that clothing proves more robust in retaining an employment presence than the more capital-intense textile sector. The Labor intense textile sector is expected to suffer much from intensified global competition. Technological innovation and the pursuit of niche markets plus increased outsourcing are key responses. Thus among all the pressures they leave no scope for internal inefficiencies within the firm.

Md. Mazedul Islam, Adnan Maroof Khan and Md. Monirul Islam-2013, in their study they have examined that the importance of the textile industry in the economy of Bangladesh is very high. Textile industry in Bangladesh is facing great challenges in its growth rate. The high cost of production being among the major reasons.

Shahid Ali-2011, the study shows association between working capital management and the profitability of textile firms in Pakistan. He says efficiency of working capital management is reflected by three variables, cash conversion efficiency, days operating cycle and days of working capital. The findings of the fixed effect model reveal that average days in inventory and average day's receivable both have a significant impact on return on assets.

Mehrunisa Sajjad and Khuram Shahzad Bukhari the study done in Pakistan presents an in-depth analysis of how cash management, inventory management and trade credit management practices affects the Working Capital Management in a local spinning, weaving and composite units' setting and the way they impact the firm's profitability. Larger companies have superior cash management, inventory management and trade credit management as compared to medium and smaller units. Due to absence

of inventory control systems in majority of the firms with no effective re-ordering techniques, there appears a serious need to review and strengthen the inventory management policies and based on revised inventory controls an appropriate re-ordering system should be designed. A very few have adopted the sophisticated techniques for cash management, inventory management and trade credit management. Putting it together, larger spinning, weaving and composite units have superior working capital management practices as compared to the smaller and medium textile units (spinning, weaving and composite).

HA,Mwansele, FJ,Sichona and RRJ,Akarro-2011, the researchers have examined inventory situation at Urafiki Textile Mills, Tanzania and tried to develop the Economic Order Quantity (EOQ) model that will be used to determine number of units of an item to order at a time and the re-order point. The resulting EOQ for each raw material is compared to the actual ordered quantities so as to see whether there is any relationship between them in operational cost reduction. Their result shows that the relationship between the EOQs and the ordered quantities at Urafiki in terms of operational cost reduction was significant. The authors have recommended that in order to manage inventory effectively, Urafiki needs to employ inventory control methods such as the EOQ model to obtain reasonable ordered quantities for its raw materials.

Dr.T.S Devaraja-2011, India is the world's 2nd largest producer of textiles and garments after China. The Indian textile industry is as diverse and complex as country itself and it combines with equal equanimity this immense diversity into a cohesive whole. The fundamental strength of this industry flows from its strong production base of wide range of fibres / yarns. The researcher has concluded that the growth pattern of the Indian textile industry in the last decade has been considerably more than the previous decades.

Donald S. Allen-1995, His study supports the anecdotal evidence that inventory management methods in the United States have changed significantly over the past decade or two which is evident in the reduced business inventory-to-sales ratio. All other things being equal, inventory management innovations should reduce the probability of unintended accumulation. But as long as firms overestimate or underestimate future demand, inventory cycles will persist. In the long run these innovations in Inventory management can contribute to a faster response of production to changes in demand

Donald S. Allen-1997, The common assumption is that firms use inventories to smooth production, his research at the level of individual companies fails to confirm this hypothesis, although select firms showed evidence of seasonal smoothing. One possible explanation of the failure to confirm smoothing is that increased demand prompts firms to raise their inventory targets levels; thus "planned" inventory increases are positively correlated with sales. The finding is consistent with the idea that inventories act as a buffer stock to unexpected changes in sales

Pollution Prevention In The Textile Industry Developed By:U.S. Epa/Semarnap Pollution Prevention Work Group-1996,The work group study reveals that properly controlling of raw materials, intermediate products, final products, and wastes is a significant way to minimize pollution. Wastes may consist of either raw materials that are out of date, no longer used, or unnecessary; or final products that are no more required or damaged. Including wastes in an inventory program can make them more recoverable. Improving inventory control ranges from simple modifications in the procedure of ordering materials to just-in-time (JIT) manufacturing techniques. Improved inventory control can reduce material expenses and reduce the waste that is generated, and its associated costs**.**
The following changes can improve inventory management:
• Purchase only the amount of material needed.
• Review materials for hazardous content, and examine alternatives that are less hazardous.
• Track and control the use of materials to reduce excess use.
• Designate specific employees/ departments as responsible for the purchase and disposition of supplies and material.

Pawan Kumar-1996, studied that inventories are viewed by most of the business world as a large potential role and not as a measure of wealth as was prevalent in old days. The inventory stocked in excess of demand may lead to drastic price cuts, so as to be saleable before it becomes worthless because of obsolescence. The inventory stocked less than the demand may lead to the business out of the market. This is probably true about all branches of knowledge and especially true for inventory management area. Inventories play essential and pervasive role in almost every sector.

Lee-in Chen Chiu-2007, in his study found out that Taiwan's comparative advantage in manufacturing is seen to lie in instant response to client's orders. The famous model of "just in time" production needs a highly cooperative labor management. In conclusion, the author found that the low cost production is the major competitiveness in post quota era.

Dan M. Becker and Stephen Stanley-1992 The researchers found that with the advent of computer and changes in business management techniques it is believed that there is an improvement in inventory control. It is evident as most analysts cite the decline in the ratio of inventories to sales in manufacturing. The improved inventory control implies a faster adjustment of inventories to changes in sales as well as a decline in the average ratio of inventories to sales. There are other goods-stocking sectors to consider besides manufacturing. In contrary to widely held opinion, improved inventory control can result in increased, rather than reduced, volatility in inventory investment. The findings provide clear evidence of improved inventory control in manufacturing, both in finished goods stocks and in inventories of materials and supplies and work in progress. Their findings show that, contrary to popular belief, investment volatility has increased in both the manufacturing and trade sectors

Gerald Ochieng Ondiek-2012, The study has examined the recognition Kenyan manufacturing firms are giving to materials management and the benefits of adopting good materials management practices since long-term success and survival of any firm depends on how well their costs are managed. The study surveyed medium and large manufacturing firms based in Nairobi, Kenya, 23 percent of the firms were found to recognize materials management. However, they found generally Kenyan firms were not practicing professionalism in materials management and owing to the huge amount of resources they were committing on materials related activities. A lot of emphasis need to be directed towards materials management and it should be recognized as a top management function.

Richard A. Lancioni and Keith Howard-1978, their study considers Inventory Management as extremely important function to any business. The inadequacies in control can result in serious problems. Inefficiency in Inventory management is likely to result in delays in production, dissatisfied customers, or curtailment of working capital.

From the above research studies in recent years, it is evident that a lot of work has been done in the area of Decision Support and Knowledge Based Management Support system. It has helped to understand as to what extent the field of inventories has been explored and moreover, howfar the issues of this field have been addressed globally.

Conclusion:
It has been found that there is a broad gap between the theoretical world of knowledge and practice. It has also been seen that the arena of knowledge is widening but the practical implication is lagging behind in such a significant sector. If we talk of Indian context the talked about gap is too wide. This is true about almost all the sectors of the economies worldwide. As Textile is the oldest industry of most of the countries, it still has the three tier system existing today as well. From the old handloom to the updated technologically advanced machinery the textiles sector has managed to withstand all the odds. It has emerged as a success in many of the countries and has provided employment to huge number of people especially in developing nations. But the speed at which it should have been developed is not at pace with what is existing today.
While going through the available literature it was found that almost each country that has a growing textile sector is trying to tackle with the problem of deciding the efficient Inventory systems. Although during browsing the work of researchers in the field of Inventory management, it was deduced that the Inventory management continues to be a problem area for almost all Textile manufacturing organizations and as a matter of the fact much attention is devoted towards creating an efficient inventory management system based on the rationale 'not out of stock and not excessive stock' (optimum level). In textile sector the products created thereof have high material content and as such raw material inventory is massive. Thus a large amount of working capital gets blocked in the initial stages of production and the same was evidenced during the research review undertaken in this paper. Some of the researches, however, concluded that the initiation of computerization has helped in creating efficient inventory management system. Development of different software's in this regard has been a big achievement. Inventory management continues to be more problematic in the area of semi-finished goods/work-in-process. This is particularly so in case of companies having their manufacturing processes situated distantly from each other. Organizations have been doing there first few processes at one place and finishing processes at some other place, thus face inventory management problems. Of all the types of inventories like Raw material, semi finished/WIP, finished goods and spare parts and consumables, Spare parts and consumables in textile industry eats up the substantial portion of working capital. In developing countries the textile power looms are mostly imported from the industrialized world and spare parts of this machinery have to be carried all throughout to ward off against any unexpected machine breakdowns. The Textile sector is predominantly a labour intensive industry with more prominent presence in third world countries thus holistic management problems in them continues to trouble and scare the prospectus of development of this sector. Thus Management of inventories occupies a central place among many management problems and hence has to be addressed seriously to ensure healthy textile sector in world particularly in developing countries. A lot of work is yet to be done to improvise this sector. And therefore leaves a long path to be followed by researchers.

References

[1] Allen, Donald S, 1995, Changes in Inventory Management and the Business Cycle, economist at the Federal Reserve Bank of St. Louis.
[2] Allen, Donald S, 1997, Do Inventories Moderate Fluctuations in Output, economist at the Federal Reserve Bank of St. Louis.
[3] Becker, Dan M, Stanley,Stephen, 1992, Evidence of Improved Inventory Control, Economic Review. January/February.
[4] Chiu,Lee-in Chen, 2007, The Policy, Institution And Market Factors In The Development Of Taiwan's Textile/Garment Industry, Chung-Hua Institution for Economic Research
75 Chang-Hsing Street, Taipei, Taiwan 106, Republic of China, Working Paper Series No.2007-2.
[5] Devaraja, Dr.T.S, 2011, Indian Textile and Garment Industry, Department of Commerce, University of Mysore, Hassan,India.
[6] Islam,Md.Mazedul, Khan,Adnan Maroof, Islam,Md.Monirul, 2013, Textile Industries in Bangladesh and Challenges of Growth, Department of Textile Engineering, Daffodil International University, Bangladesh, Research Journal of Engineering Sciences, Vol. 2(2), 31-37.
[7] Karacapilidis, Nikos,I, Pappis,Costas P, Production Planning and Control in Textile Industry: A case study, German National Research Center for Information Technology, Artificial Intelligence Research Division, Schloss Birlinghoven, 53757 Sankt Augustin, Germany.
[8] Kumar,Pawan, 1996,Analytical Study of Inventory Management in Punjab State Electricity Board, Finance India, Vol. X No. 2, Pages— 412–415.
[9] K.Sudhaman.The Hindu,Daily Newspaper.

[10] Lancioni, Richard, A and Howard Keith, 1978, Inventory Management Techniques, International Journal Of Physical Distribution & Logistics Management, Vol 8, ISS:8, pp. 388,428.

[11] Mwansele,HA, Sichona,FJ, Akarro,RRJ, Determination of Inventory Control Policies at Urafiki Textile Mills Co Ltd ,Dar-es-Salaam, Tanzania, Business and Economics Journal, Volume 2011: BEJ-23.

[12] Ondiek,Gerald Ochieng, 2012, Assessment of Materials Management in Kenyan Manufacturing Firms, University of Nairobi, Odhiambo Odera, Masinde Muliro University of Science and Technology, Journal of Business Studies Quarterly, Vol. 3, No. 3, pp. 40-49, ISSN 2152-1034.

[13] Rahman, Mohammad Morshedur, 2011, Working Capital Management & profitability: A Study on Textile industry, ASA University Review, Vol. 5 No.1.

[14] Sajjad, Mehrunisa, Bukhari,Khuram Shahzad, Relationship between Working Capital Management and Profitability- Case of Pakistan Textile Sector, Institute of Management Sciences Bahauddin Zakariya University Multan, Pakistan.

[15] Shafi, Mohammad, 1992, Management Of Inventory-An Analysis Of Its Vital Dimensions, Management Review, Narsee Monjee Institute of Management Studies (NMIMS), Mumbai, pg 28-38

[16] Shafi, Mohammad, 1994, Unused Inventories –An Analytical Study, Management Review, Narsee Monjee Institute of Management Studies (NMIMS), Mumbai, pg 27-29

[17] Shahid Ali, 2011, Working Capital Management and the Profitability of the Manufacturing Sector: A Case Study of Pakistan's Textile Industry. The Lahore Journal of Economics 16: 2 (Winter 2011): pp. 141–178.

[18] Sharma,P.C,1984,Materials Management,Kitab Mahal, Allahabad.

[19] Shore, Barry,1980, Operations Management, Tata Mcgrah-Hill, New Delhi.pp.363.

[20] Taplip, Ian M, 2006, Restructuring and Reconfiguration: The EU Textile & Clothing Industry Adapts a Change, Business Review, volume 18, pp. 172-186.