

## MANAGEMENT OF SUPPLY CHAIN IN LEATHER FOOTWEAR MANUFACTURING INDUSTRIES IN TIRUPATTUR DISTRICT.

**Gayathri R**

Research scholar, Department of Management studies, Annamalai University

[amilthinisuresh@gmail.com](mailto:amilthinisuresh@gmail.com)

**Dr.Priya Annamalai**

B.E,MBA,Ph.D, Assistant Professor, Dept of Business Administration

Annamalai University (Deputed)

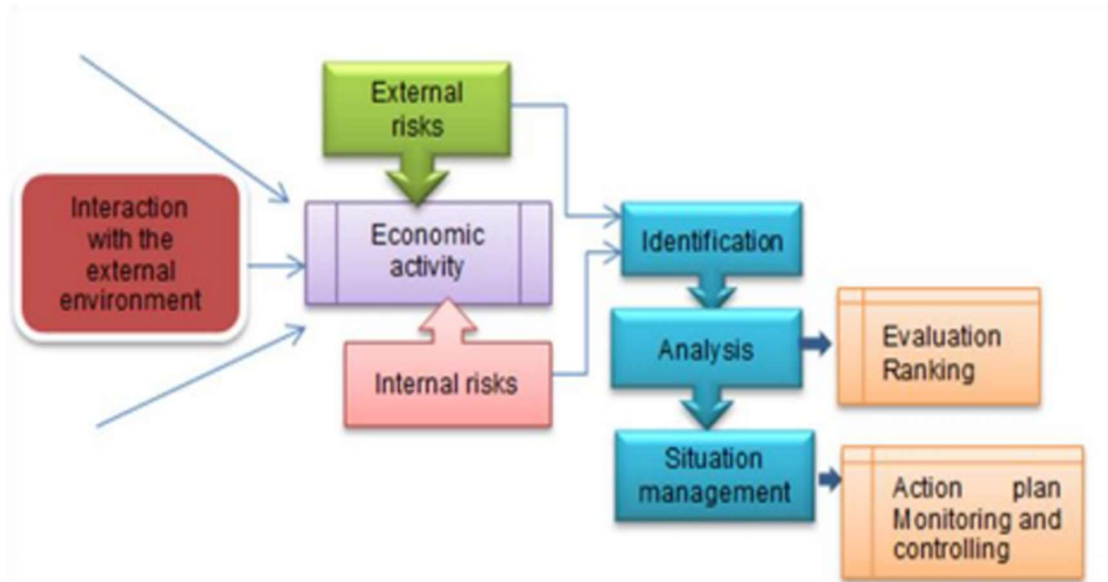
### **Abstract**

Sustainable supply chain management, also known as SSCM, is gaining a lot of traction in today's highly competitive corporate environment across all different kinds of industries. The leather industry includes the production of leather, footwear and leather goods, is the country's second-highest export earner and is now attempting to include SSCM into its production process. The owners of companies operating in this area face a great number of obstacles, which prevent them from implementing sustainable business practices in the management of their supply chains. There has not been a sufficient amount of study done to determine the difficulties that SSCM poses for the leather sector. This will provide owners of the business with direction on how to address these difficulties. Within the scope of this study, not only have we isolated the difficulties that SSCM poses for the leather sector, but we have also investigated the connections between these difficulties. In addition to this, a prioritized list of recognized difficulties is presented, which allows owners of businesses in the sector to readily distinguish between important and small challenges. The following is a list of the major functions that are performed along the SC for the leather industry: The inbound logistics of leather footwear industry includes of transportation of raw materials from suppliers for the manufacturing of leather and leather items. The transformation of raw hides, skins, and leather into leather footwear requires a series of processing procedures, which are included in operations. Stirring finished leather footwear from the production to the end customers through a variety of distribution channels (buying houses/exporters/retailers) is an essential part of the outbound logistics process. Throughout the whole of the industrial value chain, marketing, sales, and service are engaged. The construction of infrastructure, the management of human resources, the acquisition of supplies, and the creation of in-house technologies are all examples of support operations for the footwear industry. At each stage of the value chain, more value is created, and this coincides with an increase in profit margin.

**Keywords:** [Supply chain management](#), [challenges](#), Footwear Manufacturing Industries and [leather industry](#)

## Introduction

The industry that produces ready-made garments, also known as RMG, is the sector that brings in the most foreign currency. The leather has a well-deserved reputation for being of the best quality because to its fine grain, homogenous fiber structure and natural texture. The firms that produce leather items and footwear are becoming more capable of satisfying the high needs of customers located in other countries. There are a lot of opportunities for this industry to contribute to economy, according to the experts, provided that the owners of the factories in this industry can put into practice sustainable business practices. Deb Shaikh Sarker and Hossain (2018). This industry has been identified as a sector of the emerging economy. Beginning with the processing of hides and skins, moving on to the production of leather goods and footwear, and ending with the production of leather goods and other leather goods. This is something that might be done due to the fact that there is the potential for strong backward linkages with the majority of the raw materials coming from the local area and because the location is favourable. The term "supply chain management" (SCM) refers to the management of enterprises that are both related to one another and to other businesses. This can be thought of as the "whole enchilada" of the production and sale of a product. Recently, sustainability has arisen as an issue of significant concern, attracting the attention of corporate executives as well as those performing research at academic institutions. There has been a significant increase in the proactive use of SSCM to enhance business processes and operations by taking into consideration the social, economic, and environmental ramifications of doing so. In recent years, environmental and social sustainability have become increasingly popular topics of study for researchers and managers of supply chains. This is largely attributable to the increasing number of regulations and expectations placed on customers, as well as the pressures placed on buyers to purchase environmentally friendly products. This is because purchasers are coming under a growing amount of pressure to purchase environmentally friendly goods. A supply chain is the interconnected section of an organisation that includes all of its participants—suppliers, manufacturers, distributors, and end users—as well as the information flow that connects all of these parties via networks. Maintaining sustainability demands adopting environmentally responsible business practices. In a nutshell, sustainability is an approach to business that prioritizes reducing a company's negative influence on the surrounding community and natural environment while simultaneously improving the quality of the firm's interpersonal and financial relationships with its stakeholders. Therefore, the viability of the supply chain is an essential problem for commercial enterprises that are working toward reaching a sustainable level in the international market. It is very necessary to determine the fundamental performance metrics in order to make the supply chain both robust and sustainable. A company is able to address existing issues by conducting an investigation of the organization's current performance, which enables the company to take action.

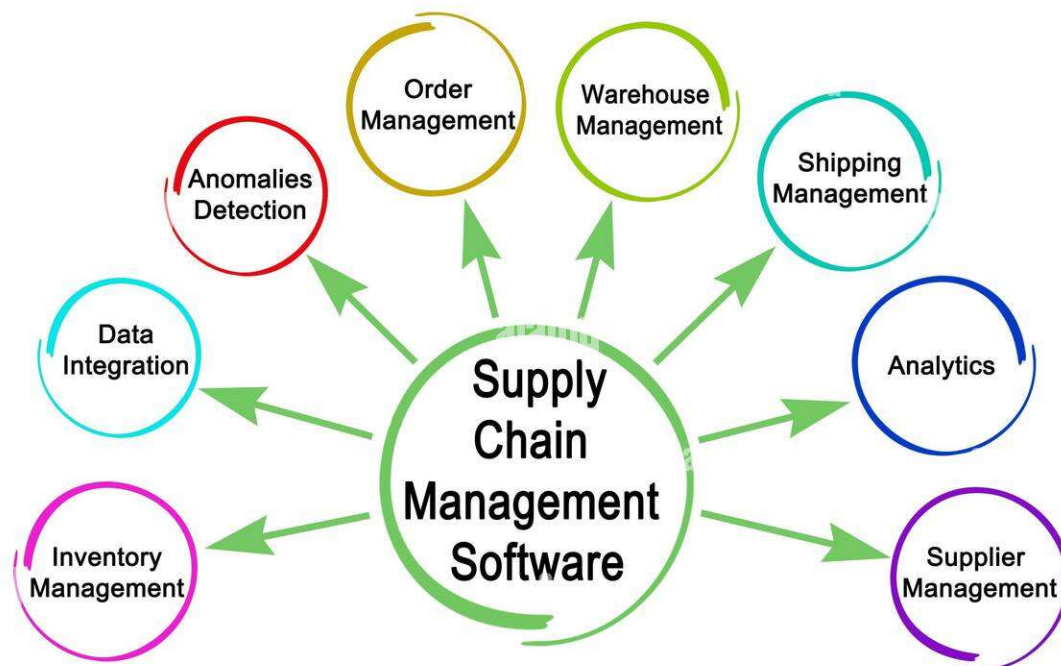


## Supply Chain Management- An Overview

The process of planning, organizing, coordinating, and managing all operations that are intertwined in sourcing and procurement, manufacturing, and logistics is included in the definition of (SCM). This definition refers to the management of the supply chain as a whole. In the context of the value chain, (SCM) is conceived of as an integrating concept with the goal of achieving the full flow of raw materials, work-in-progress, finished goods, and information from suppliers to consumers. This flow is intended to be achieved through the coordination of multiple processes. In addition to this, it takes into account the movement of monetary and informational resources from consumers back to the provider. SCM is a set of methods and practices that integrate suppliers, manufacturers, dealers, and customers in an efficient and effective manner for the purpose of meeting the needs of the customers to the greatest extent possible, thereby enhancing the long-term performance of both the individual organisations and the supply chain as a whole in the context of a cohesive, coherent, and high-performing business model. SCM is concurrent with the processes of sourcing commodities, planning and scheduling manufacturing, processing orders, managing inventories, warehousing and logistics, delivering products to clients, and providing after-sale support services (Carter et al. 2017). Management of procurement, operations, and logistics as well as information technology are all included in the scope of supply chain management, which seeks to take an integrated approach (Luo et al. 2018).

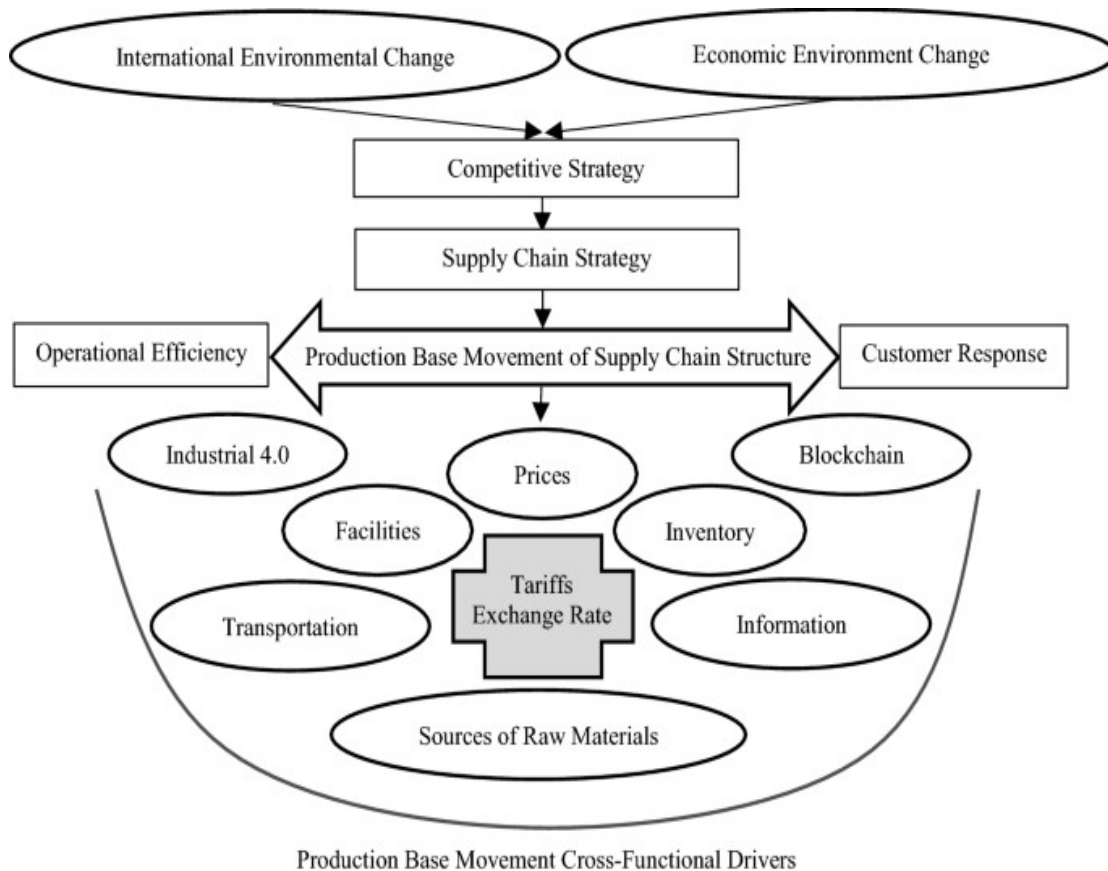
SCM is the comprehension of planning, organizing, coordinating, and management of all activities across the supply chain. These activities include the sourcing and procurement of materials, the manufacturing of products, and all logistics management activities to enable the goods or services of required quantity and quality to reach the customer on scheduled time at the minimum cost as determined by the customer's satisfaction. SCM practices are any practices that are implemented by an organisation with the goal of improving its supply chain

management capabilities. The very volatile nature of the leather footwear industry in India, which results in the bullwhip effect, and the price elasticity of the market both contribute to the complexity of the situation. The footwear business is known for two types of goods: (a) trendy, new items that are produced in low volume and high diversity, and (b) traditional products that are produced in large volume and low variation. Because footwear is considered to be part of the lifestyle category, there is a significant amount of variation in the demand forecast provided by brands and retailers (both locally and internationally) for the leather footwear products. This variation causes a cascading effect as it makes its way upstream into the operations of the supply chain in the leather footwear industry. Because of the nature of the business, the development potential of the sector, and the competition from other nations, the performance of the supply chain throughout the value chain of the Indian footwear sector has to be improved. The performance of the supply chain of the industry as a whole improves along with the improvement of the SCP of the many businesses that are involved in the value chain of the sector. Effective supply chain management has become a pathway to augment the supply chain performance of the firms, and thereby gain a competitive advantage and improve organizational performance. Firm performance is positively influenced by the supply chain performance of the organisations, and this is why effective SCM is so important (Li et al. 2006).



The companies compete with one another based on their supply networks and the degree to which they are able to successfully manage those supply chains in order to distinguish their

levels of organizational performance. Supply chain performance and, as a result, the business performance of an organisation can be improved through effective supply chain management have detailed the role of TQM principles and their positive association with the adoption of technological innovation in the Portuguese footwear industry). Sellitto et al. (2015) developed a Supply Chain Operations Reference based model for the measurement of supply chain performance for the Brazilian footwear industry. Within this model, he considered cost, quality, delivery, and flexibility to be the SC performance measures. This model was designed for measurement of supply chain performance for the Brazilian footwear industry.



### Statement of the Problem

The absence of sufficient implementation guidelines that are tailored to the leather footwear sector, which are necessary for realizing the advantages of supply chain management methods, is the issue that inspired the current investigation and serves as its foundation. This insufficiency discourages the leather footwear sector from adopting a scientific approach in order to bring about an improvement in the performance of the supply chain of the footwear sector. This would allow the leather footwear sector to gain a competitive advantage and continue operating globally.

### Scope of the Study

The overarching goal of this project is to investigate and disseminate appropriate management knowledge concepts that are related to supply chain strategies with the intention

of bringing about an improvement in the SCP of the leather footwear industry. Through this research study, an effort is being made to determine the critical factors that influence SCM and the relationship between those factors and supply chain operational performance in relation to the Indian leather footwear industry. This is being done as part of an effort to categorize the critical players that effect supply chain performance.

**Supply Chain Management Model**

SCOP measures (Rij) were found to have an inter-relationship with leanness enabling SCMPs (Tki), and the experts of the industry had the same evaluated by the team of experts. Due to the subjective nature of the HOQ's measurements, fuzzy logic was used to avoid issues with ambiguous and imprecise occurrences (Vinodh & Kumar Chintha 2011; Zarei et al. 2011; Theagarajan & Manohar 2015; Haq & Boddu 2017). Findings in linguistics were transformed into numerical values of objectivity in order to grasp the relative relevance of leanness, relationships, and correlation matrices. In the HOQ matrix, the Triangular Fuzzy Numbers (TFNs) were used to describe the link between leanness-enhancing SCOP measures and leanness-enabling SCMPs. In addition, TFNs in the fuzzy HOQ represented the degree of connection between leanness and SCMPs.

**Triangular Fuzzy Number (TFN)**

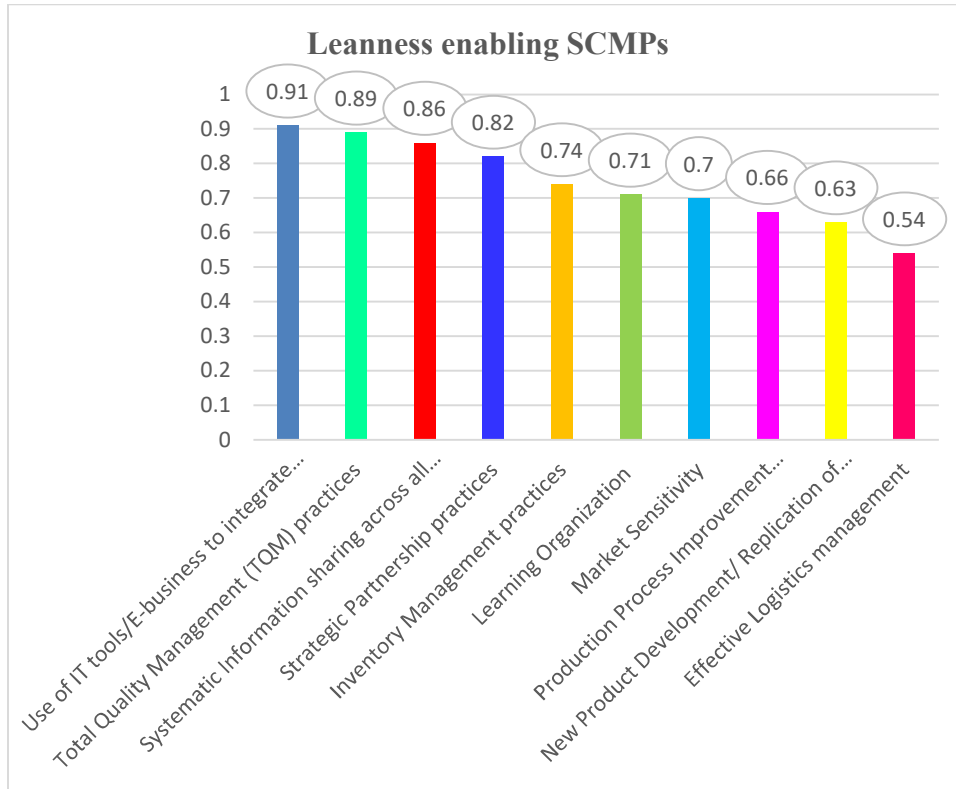
Priority weights and relative importance (Raj) of leanness-enabling SCMPs were computed in order to identify the leanness-enabling SCMPs that had the greatest influence on leanness-improving SCOP metrics. Then, using fuzzy set algebra, each RI was normalized by dividing it by the highest one (Zimmermann 1991). De-fuzzing the normalized scores of RI\* was also done so that the leanness allowing SCMPs may be prioritized. Priority weights and the relative relevance of leanness permitting SCMPs, RI Leanness-enhancing SCOP measures were prioritized, the link between leanness-enabling SCMPs and leanness-enhancing SCOP measures were taken into consideration, as well as the correlation between leanness-enabling SCMPs using Equation (5.6). (5.7). after that, the RI\* was normalized in order to get the NRI' values. Utilizing Equation, we were able to get the exact values (5.8).The leather footwear industry's SC operational performance may be improved by using leanness-enabled SCMPs with high crisp values. The leather footwear industry's SC performance may be improved by using these leanness enabling management strategies.

**Table 3**  
**Leanness enabling SCMPs in the order of their Crisp Values**

S.No.	Leanness enabling SCMPs	Crisp Values
1	Use of IT tools/E-business to integrate activities in Design, Development, Manufacturing, and SCM	0.91
2	Total Quality Management (TQM) practices	0.89
3	Systematic Information sharing across all supply chain partners	0.86
4	Strategic Partnership practices	0.82
5	Inventory Management practices	0.74
6	Learning Organization (includes multi-skilled labor and cross-functional	0.71

	teams)	
7	Market Sensitivity	0.70
8	Production Process Improvement Technologies	0.66
9	New Product Development/ Replication of Model Shoe	0.63
10	Effective Logistics management	0.54

**Fuzzy QFD based Agile Supply Chain Management Model**



Agility enabling SCMPs and agility-enhancing SCOP measures (Rii) and the technical correlation among agility enabling SCMPs (Txj) have been determined and reviewed by an industry team of specialists. With subjective descriptions of the HOQ's measurements, fuzzy logic was used to avoid dealing with issues with ambiguous and imprecise phenomena (Bottani 2009; Nejatian et al. 2018; Theagarajan & Manohar 2019). It was important to convert the verbal results into objective numerical values in order to comprehend the relative relevance of agility-enabling SCMPs, relationships, and correlation matrices These (TFNs) were used to prompt the strength of the association between agility-enhancing SCOP measures and agility-enabling SCMPs in the HOQ matrix. In addition, TFNs in the fuzzy HOQ represented the degree of connection between leanness and SCMPs.

Aiming to establish which agility enabling SCMPs have the greatest impact on SCOP measurements, the RI and priority weights (RIX) of agility enabling SCMPs are computed. The relative weights and relevance of agility in allowing SCMPs, RI We used priority weights for agility-enhancing SCOP measures and the Equation to calculate RI\* by relating agility-enabling SCMPs to agility-enhancing SCOP measures and by correlating agility-enabling SCMPs. After

that, the RI was normalized in order to get the NRI values. In order to improve the SC operational performance in the leather footwear industry, SCMPs that enable agility and have high crisp values must be actually implemented. In order to improve the leather footwear industry's SC operational performance, certain agility-enabling management strategies must be used.

Table 2  
Agility enabling SCMPs in the order of their Crisp Value

Agility enabling SCMPs	Crisp Values
Use of IT tools/E-business to integrate activities in Design, Development, Manufacturing, and SCM	0.95
Systematic Information sharing across all Supply chain partners	0.92
Taking Leverage on Core competencies of Supply chain partners	0.86
Total Quality Management (TQM) practices	0.79
Learning Organization (includes multi-skilled labor and cross-functional teams)	0.70
Vendor Managed Inventory (VMI)	0.68
Market Sensitivity	0.70
Effective Logistics management	0.62
Collaboratively Joint Product Development across the supply chain partners	0.60
Centralized/Collaborative Planning of Production	0.57
Production Process Improvement Technologies	0.51
New Product Development/ Replication of Model	0.45

## Conclusion

The term "Supply Chain Management," refers to a process that coordinates the movement of information, raw materials, finished goods, and finished goods, respectively, from a company's suppliers to its final consumers. In addition to that, it takes into account the movement of funds and information from customers back to the providers. The activities of sourcing and procurement of commodities, planning and scheduling of manufacturing, processing of orders, administration of inventories, storage and logistics, delivery, and after-supply services to consumers are all related with supply chain management (SCM). Additionally, it is emphasized the purpose of supply chain practices must shift from being operative to becoming universal, collaborative, and shifting from independent practices to integrative practices. SCM is a serious problem that will lead the route toward sustainability for every sort of industry that you can think of right now. It is very vital to use SSCM methods in the leather sector in order to upgrade the current circumstances of industries and to elevate the economic conditions of the nation. This research shed light on the significant obstacles that must be overcome in order to successfully adopt SSCM in the leather and footwear industries.



After conducting a comprehensive literature analysis and soliciting the input of industry professionals, the researchers in this study first uncovered a number of obstacles

### Reference

1. Agus, (2011),“Supply Chain Management, Supply Chain Flexibility, and Business Performance, Journal of Global Strategic Management”, Vol. 5, (1), pp. 13W145
2. Beamon (1999), ‘Measuring supply chain performance’, International Journal of Operations and Production Management, Vol. 19, (3), pp. 275-292.
3. Carter Kosmol, & Kaufmann (2017), “Towards a Supply Chain Practice View , Journal of Supply Chain Management”, vol. 53, (1), pp. 114—122
4. Carter,Rogers and Choi, (2015),”Toward the Theory of the Supply Chain, Journal of Supply Chain Management”, Vol.51,pp. 89-97.
5. Deb Shaikh Sarker and Hossain (2018). “Assessment of influential factors for purchasing gent’s shoes—Understanding the basic comfort properties. Leather and Footwear Journal”, Vol.18,(1), pp.13–24
6. Eckstein (2015), “The performance impact of supply chain agility and supply chain adaptability: The moderating effect of product complexity’, International Journal of Production Research. Taylor & Francis”, Vol. 53, (10), pp. 3028-3046.
7. Gligor Esmark & Holcomb, (2015), “Performance outcomes of supply chain agility: When should you be agile?’ Journal of Operations Management”. Elsevier Vol. 3-34, pp. 71-82
8. Hudnurkar, M, Jakhar, S & Rathod, U 2014, ‘Factors Affecting Collaboration in Supply Chain: A Literature Review’, Procedia - Social and Behavioral Sciences. Elsevier , Vol. 133, pp. 189-202.
9. Luo, Shi & Venkatesh, VG 2018, ‘Exploring the factors of achieving supply chain excellence: a New Zealand perspective’, Production Planning and Control. Taylor & Francis, Vol. 29, (8), pp. 655-667
10. Paul, Antunes, Covington, Evans and Philips (2013). “Bangladeshi leather industry: An overview of recent sustainable developments”. “Journal of the Society of Leather Technologists and Chemists”.
11. Sarker, Deb Chowdhury Hossain, (2019). “Investigation and evaluation of the quality features related to comfort of casual shoes in Bangladeshi leading retail brands using physical and chemical standard test methods. Leather and Footwear Journal”,Vol. 19,(1), pp.11–20
12. Sellitto (2015), “SCOR-based model for supply chain performance measurement: Application in the footwear industry’, International Journal of Production Research. Taylor & Francis”, Vol. 53, (16), pp. 4917—4926
13. Shah Chandrasekaran & Linderman (2008), “In pursuit of implementation patterns: The context of Lean and Six Sigma, International Journal of Production Research”, V ol. 46, (23), pp. 6679-6699.
14. Vinodh,Devadasan,. Vimal and Kumar (2013), “Design of agile supply chain assessment model and its case study in an Indian automotive components manufacturing organization, Journal of Manufacturing Systems”,Vol. 32, pp.620-631