

THE IMPACT OF VALUE CHAINS ON APPAREL INDUSTRY IN SRI LANKA

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Abstract-Apparel is one of the oldest and largest export industries in the world. The Apparel Industry of Sri Lanka has faced many ups and downs throughout its carrier due to many trade barriers and other inefficiencies. This study is conducted to find a way of regaining the lost position in the International Apparel market which was dominated by our local apparel industry. The main Objective of this study is to investigate the Impact of the Value Chains on the Apparel Industry. In previous studies Kokemuler has stated that when a closer look is given to the primary activities of the value chain, Inbound Logistics is one variable that influence customer satisfaction. (Kokemuller, 2013). Ingram has also stated that Understanding the differences and correlation between inbound and outbound logistics can provide insight for developing a comprehensive supply-chain management strategy (Ingram, 2009). In this research, the sustainability of apparel industry and customer satisfaction are the Dependent Variables whereas Inbound and Outbound Logistics activities are considered as Independent Variables. The study was based on Primary data collected through questionnaires from 30 firms selected out of the total population of apparel firms in the Colombo District. Collected data was analyzed using SPSS software (Version 22) The Sample Adequacy of the current study is 0.648. Reliability of variables according to cronbach's alphas 0.741. The R square value of the study is 0.702. Validity of data was measured using the expert validity test using the supervisor. The Co-relation, Co-efficient, and significance is measured using 95% of confidence interest. As for the research findings, the researcher identified that there is Positive relationship between Value Chain activities and Customer Satisfaction which ultimately leads to Sustainable development.

Keywords: Value Chain, Customer Satisfaction, Efficiency, Sustainability

I BACKGROUND OF THE STUDY

Apparel is one of the oldest and largest export industries in the world. It is also one of the most important global industries because most of the nations produce for the international textile and apparel market. Apparel production is a springboard for national development, and often is the typical starter industry for countries engaged in export-oriented industrialization due to its low fixed costs and emphasis on labor-intensive manufacturing (Gereffi, 1999). This is the same scenario which is common to all the countries including Sri Lanka.

When our little island is taken into consideration, the apparel industry of Sri Lanka has faced many ups and downs throughout its carrier due to many trade barriers and other inefficiencies. The apparel sector came into establishment in the 80s whereas during the years 1995 to 2000 it was named as the golden era for the apparel industry of Sri Lanka where it competed with other leading nations shoulder to shoulder. With time due to different trade agreements and other quotas Sri Lanka was badly affected which lead to the downfall of the apparel industry and winding up of many garment factories. Figure 01 depicts the decline of the export trends in apparel industry compared to other countries. However the exports of the Apparel industry declined from 48 percent to 38 percent having a major impact on the Gross Domestic product of the country with a 1 percent decline. Figure 01 shows the clear drop of exports of Sri Lanka compared to other nations engaged in the apparel industry.

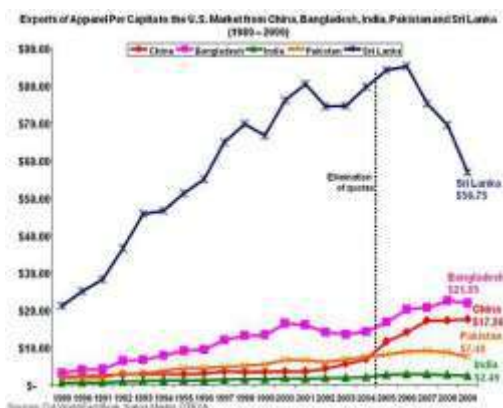


Figure 01: Exports of Apparel per capita to the US market

Source- CIA World Fact Book

When consideration is given to figure 01 it can be closely monitored that there is a vast decline in the exports of Sri Lanka compared to the countries such as Bangladesh, China, Pakistan and India. Though the exports of apparel is considerably higher than the other countries, there is a massive decline in Sri Lankan exports while other countries have a consistent or rather an increasing trend of exports. Other countries had been able to develop their apparel industry whereas Sri Lanka has kept a step backward rather than keeping a step forward. The increase of the efficiency of the apparel industry to increase the exports yet again is important for the economy of Sri Lanka to rise again with its lost market powers.

Previous researches done on the apparel industry indicates that the development of the apparel industry leads to the development of the entire nation increasing a country's GDP. There are many factors that influence the upgrading and development of the apparel industry and one of the main factors is the Value Chain. Understanding the importance and the impact of the value chain on the apparel industry and what role it plays for the development of the whole of the apparel industry creates a huge positive impact over the whole country.

The research "The impact of Value Chains on Apparel Industry" will be conducted to understand the role of activities such as Inbound Logistics, Operations, Marketing and sales, Outbound Logistics, Services, Firm Infrastructure, Human Resource Management, Technology and Procurement activities which will help the

organizations to monitor on these key activities and to increase competitive advantage over the other firms. Therefore in this research the researcher will base this study on a very important aspect of the apparel industry which is the value chain activities which will have a significant contribution to regain its position in the world as one of the leading garment producers in the world yet again. Minimizing wastages, increasing productivity, lower costs and other benefits which is achieved through proper conduct of value chain activities also which drives for customer satisfaction will be the main focus that will make the apparel industry a market leader again in the world regaining its market powers in the apparel industry.

I. STATEMENT OF THE PROBLEM

The massive competition in the apparel industry nowadays had led to the better performance of the apparel industry all around the world. Therefore Sri Lanka is faced with many challenges due to this competition from countries mainly like India, Bangladesh, Nepal and Pakistan. This is where the nations look into all the minority details to gain competitive advantage over the other. This is where the value chain activities play a major role. Conducting these activities at the optimum possible way will allow the industry to reduce costs and increase profits.

The apparel Industry which was once considered one of the major industries in Sri Lanka and which was also highly recognized in the world has faced many ups and downs. Previous studies have explained how these problems affect the apparel industry relating to the productivity of some factories. However in this study the researcher focuses on the improvement of value chain activities and its impact which has currently not been studied by anyone but which plays a massive role in gaining competitive advantage which will drive the apparel industry for its lost position in the world market.

II. JUSTIFICATION OF THE PROBLEM

The impact of value chain on apparel industry will give reasons for the significance of these components which will allow the organizations to know their capacities and to minimize errors in order to develop the organizational activities by minimizing costs and by maximizing profits. Also having the opportunity to satisfy the customers

better. Knowing whether the value chain has a remarkable impact will help the organization to carry out its activities effectively.

The unnecessary wastages, higher costs, labor inefficiencies, and other reasons has caused the ineffectiveness and lesser contribution of the value chain activities on the apparel industry. These issues should be overcome for the better and smooth flow of the production process which will ensure customer satisfaction and better market share.

III. OBJECTIVES OF THE STUDY

The primary or rather the core objective of this research is set in order to address the main problem statement of the research. The core objective of the research is to see the impact of the value chains on the apparel industry.

The following secondary objectives are set in order to achieve the core research objective of this research. The secondary objectives of the research are,

- The factors affecting the apparel industry value chain activities.
- The relationship between value chain components and customer satisfaction.
- The effect of value chain on cost and profit of the organization.
- And also to give suggestions and recommendations on the improvement of value chain activities to ensure the sustainability of the apparel industry.

The secondary objectives are to see what are the factors that influence the success of the value chain, what relationship persist with each value chain activities and customer satisfaction, to see what impact the value chain as a whole has on the cost and the profit of the organization and finally to give recommendations from the drawn conclusions.

IV. EMPIRICAL REVIEW

This section of the research is arranged in order to address the research objectives set by the researcher in conducting the study "The impact of Value chains on Apparel Industry" based on previous studies.

There have been researches conducted on the first objective of the study that is the factors affecting the apparel industry value chain activities. According to a research conducted by Gereffiet *al* on the "Global

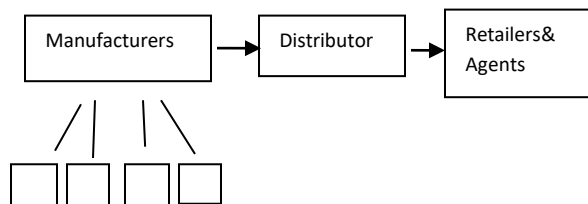
Apparel Value Chain: What prospects for upgrading by developing countries" in year 2003, the researches has focused on the value chain and other aspects which can be improved to upgrade the apparel industry in developing countries. The main aim of this research had been to see under what conditions can trade-based growth be a vehicle for genuine industrial upgrading, given the frequent criticisms of low wage, low-skill, assembly-oriented export activities? Do Asia's accomplishments in trade-led industrialization contain significant lessons for other regions of the world? The researches Gereffiet *al* introduces the value chains in two aspects in this research namely the buyer driven value chain which is mainly focused on the apparel industry and the product driven value chains. The researchers have developed the value chain of the apparel industry as given in figure 2. Accordingly this research confirms that innovation in the global apparel value chain is primarily associated with the shift from assembly to full-package production. Full-package production changes fundamentally the relationship between buyer and supplier giving more autonomy to the supplying firm and creating more possibilities for innovation and learning. For the purpose of collection of data the researcher has used the secondary data collection method where he should have also used primary data collection techniques to ensure that the information provided are more accurate and relevant with the experiences of customers and other apparel industry businessmen. Meeting and interviews with experts in the apparel industry helps to identify industry problems that varies from regional and geographically. As different regions have different issues related to apparel industry this study lacks to address problems specifically. (Memedovic, 2003)

Analysis that takes the entire chain of productive activities into account has been variously referred to as value chain, commodity chain, value network, activities chain, production network, and input-output analysis. While these terms have a great deal in common, an important distinction can be made by contrasting the various "chains" to the various "networks," where a "chain" maps the vertical sequence of events leading to the delivery, consumption, and maintenance of a particular good and service, while a "network" maps both the vertical and horizontal linkages between economic actors, i.e., recognizing that various value chains often share common economic actors and are dynamic in that they are reused and reconfigured on

an ongoing basis. A researcher Sturgeon of the Massachusetts Institute of Technology has stated this when doing a research on “How Do We Define Value Chains and Production Networks?” in the year 2000. The main of this research had been to see the impact of the value chains on different product networks. The researcher has mainly used the component value chains for his findings is because of Industry-level analysis of economic activity, especially one that uses a “value-chain” approach, works well in studies of cross-border economic integration because it takes a significant but still manageable slice the world economy as its object of study. What is revealed in studies of industry value chains are the concrete actors in the global economy as well as the linkages that bind them into a larger whole. The researcher states that, we must agree on what the critical dimensions of value chains are before having a discussion on how various industries and various pls differ along them. Here the researcher has layed out one possible set of critical value chain dimensions: organizational scale, geographic scale, productive actors, and governance style. For the purpose of collection of information the author has used primary data collection methods such as interviews to find the information needed for the research. (Sturgeon, 2000)

The use of a global commodity chains perspective to analyse the social and organizational dimensions of international trade networks. In linking international trade and industrial upgrading, the article by Gereffi specifies: the mechanisms by which organizational learning occurs in trade networks; typical trajectories from assembly to OEM (Original Equipment Manufacturing) and OBM (Original Brand name Manufacturing) export roles; and the organizational conditions that facilitate industrial upgrading moves such as the shift from assembly to full-package networks. The empirical focus had been the apparel industry, with an emphasis on Asia. This article had been conducted by Jereffi on the research topic ‘International trade and Industrial upgrading in the apparel commodity chain” in the year 1999. The main objective of the research had been to see the value chains related to the International trade. For this purpose the researcher had used secondary data to find information regarding the trade patterns of USA and other countries in relevance. Gereffi had been able to construct two structures relevant to the commodity chain of the apparel industry.

The figure 02 depicts the producer driven commodity chain developed by Gereffi and figure 03 will depict the buyer driven commodity chain developed by Gereffi in this research



Domestic and Foreign Subsidiaries And Subcontractors.

Figure 02: Producer Driven Commodity Chain
Source: Gereffi, Journal of International Economics (1999)

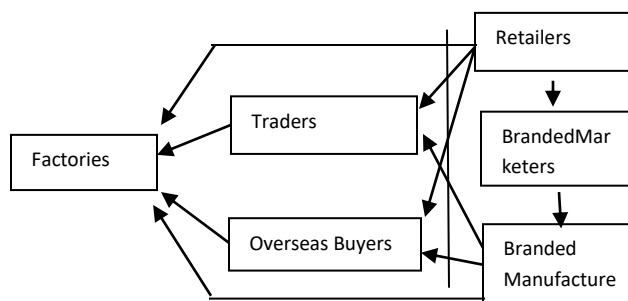


Figure 03: Buyer Driven Commodity Chain
Source: Gereffi, Journal of International Economics (1999)

Accordingly in this research the researcher has finalized that the evolution of the apparel commodity chain in Asia, which utilized East Asian NIE apparel manufacturers as the hubs of triangle manufacturing networks that knit together suppliers from countries at different levels of development throughout the region, the coordinating agents in the North American apparel commodity chain are likely to be large US firms located in each of the main segments of the chain (fibers, textiles, apparel production, marketing and retailing). The main reasons for such a different outcome are various.

First, Mexico and the CBI countries are both geographically and culturally closer to the United States than are Asian suppliers. This allows US firms to play a far more dominant role in the North American chain. Second, the role of trade policies is key here. The NAFTA pact provides Mexico at least a temporary edge over CBI suppliers, who thus far have not been granted NAFTA parity with Mexico. Even if parity is granted, Mexico has a big edge in developing a full-package supply capability because textile production in Central America and the Caribbean is virtually non-existent. Finally, they have predicted that sourcing intermediaries will emerge in Mexico to perform the same kind of 'full package' services that trading companies and integrated manufacturers provided in East Asia. Although the apparel commodity chain in North America remains buyer-driven, suppliers are likely to form rival networks across supply-chain segments to compete for large orders. This research would have been more successful if the researcher were able to conduct interviews or questionnaires with specific owners of garment companies which would have given him a better picture on the research. However the researcher Gereffi had been successful in meeting his primary objective and collecting data. (Gereffi, 1999)

When the second objective of the research which is to see the relationship with value chain and customer satisfaction is considered the following researches have been conducted in relation to that. Accordingly, Fashion markets are said to be synonymous with rapid change and, as a result, commercial success or failure in those markets is largely determined by the organisation's flexibility and responsiveness. Responsiveness is characterised by short time-to-market, the ability to scale up (or down) quickly and the rapid incorporation of consumer preferences into the design process. In the research "Creating agile supply chains in the Fashion Industry" it is argued that conventional organisational structures and forecast-driven supply chains are not adequate to meet the challenges of volatile and turbulent demand which typify fashion markets today. Instead, the requirement is for the creation of an agile organisation embedded within an agile supply chain. This research had been conducted by Christopher *et al* in year 2004 with the aim of finding solutions in creating a flexible supply chain system for the fashion industry. In this research they have defined fashion markets as

typically exhibiting the following characteristics: Short life-cycles – the product is often ephemeral, designed to capture the mood of the moment: consequently, the period in which it will be saleable is likely to be very short and seasonal, measured in months or even weeks, High volatility – demand for these products is rarely stable or linear. It may be influenced by the vagaries of weather, films, or even by pop stars and footballers, Low predictability – because of the volatility of demand it is extremely difficult to forecast with any accuracy even total demand within a period, let alone week-by-week or item-by-item demand, and High impulse purchasing – many buying decisions by consumers for these products are made at the point of purchase. In other words, the shopper when confronted with the product is stimulated to buy it, hence the critical need for 'availability'. Also in this research it has been suggested (Hoeket *al*, 1999) that an agile supply chain has a number of characteristics. Specifically the agile supply chain is: market sensitive, it is closely connected to end-user trends, virtual – it relies on shared information across all supply chain partners, network-based – it gains flexibility by using the strengths of specialist players, process aligned – it has a high degree of process interconnectivity between the network members. The findings of this research had been that Fashion supply systems are characterised by three critical lead-times: time to-market, time-to-serve and time-to-react. All three of these factors stress the importance of agility in fashion supply networks. Agility does, however, necessitate radical changes in organisational structures and strategies and a move away from forecast-driven supply. Market sensitivity, virtual integration, networked logistical systems and process alignment all become fundamental prerequisites to achieving the ultimate agility, a Quick Response capability. It would have been more accurate if the researchers used primary sources such as questionnaires and interviews in collecting information. As it would enabled the researches to gather more up to date information. (Christopher, 2004).

The research conducted by Bruce *et al* of Manchester Business School, Manchester, UK and also Neil Towers Textiles and Paper Science, UMIST, Manchester, UK had been to find a solution for supply chain management in the textiles and clothing industry. They have concluded that the textiles and apparel industry has been neglected in terms of supply chain management research.

Recently, the industry has undergone a great deal of change, particularly with global sourcing and high levels of price competition. In addition, textiles and clothing has market characteristics, such as short product lifecycle, high volatility, low predictability, and a high level of impulse purchase, making such issues as quick response of paramount importance. This article discusses characteristics of the textiles and apparel industry and identifies the perspectives of lean, agile and leagility (a combination of these) within existing supply chain literature, which have been proffered as solutions to achieving quick response and reduced lead times. Through case studies of textile and apparel companies, different approaches to supply chain management are illustrated. The researches had used secondary data, with the use of transcripts, notes and secondary material had been integrated to produce cases of supply chain management in the textiles and apparel sector. A number of key themes relating to the research objectives had been identified and used to organise the material and then to compare across the cases (Saunders *et al.*, 2000). With the input of two researchers and the research team, it had been possible to identify salient themes and issues. This had been a successful research done in the year 2004 where the researches had been successful in determining the key objectives of the research. (Bruce, 2004)

The research “governance and upgrading: Linking Industrial clusters and global value chains” conducted by Humphrey *et al* which had been a joint project of the Institute of Developing studies and the University of Sussex and the Institute for Development and Peace of the university of Duisburg in the year 2000, had been to see the scope for local upgrading strategies where producers operate in global value chains. This master piece concludes that the dynamics of cluster upgrading depend on whether the lead firms support the repositioning of the cluster. Which one is stronger the allegiance to the local policy network or their customers in the global value chain depend on the way the chain is organized. Also there is no firm correlation between the degree of hierarchy of a chain and the number of buyers. The main conclusion of the research had been that the smaller the number of buyers the more limited the scope for local industrial policy aimed at repositioning local producers in global chain. The proceeding analysis of this research suggests that the proposition that in developing countries the scope for such local

upgrading strategies are smaller than in advanced countries. This research had used secondary data and other research findings to arrive at the desired outcome in finding the objectives of the research. It would have been better if the researchers were able to find more information relevant to value chain clusters in other countries which would have made the research more accurate. (Schmitz, 2006)

Also according to the third objective of the research the effect the value chain activities has on cost and profit of the organization these researchers have been conducted. The research “The global apparel value chain, trade and crisis” research examines the impact of two crises on the global apparel value chain: the World Trade Organization phase-out of the quota system for textiles and apparel in 2005, which provided access for many poor and small export-oriented economies to the markets of industrialized countries, and the current economic recession that has lowered demand for apparel exports and led to massive unemployment across the industry’s supply chain. An overarching trend has been the process of global consolidation, whereby leading apparel suppliers (countries and firms alike) have strengthened their positions in the industry. On the country side, China has been the big winner, although Bangladesh, India, and Vietnam have also continued to expand their roles in the industry. On the firm side, the quota phase-out and economic recession have accelerated the ongoing shift to more streamlined global supply chains, in which lead firms desire to work with fewer, larger, and more capable suppliers that are strategically located around the world. The paper concludes with recommendations for how developing countries as well as textile and apparel suppliers can adjust to the crisis. The research “The global apparel value chain, trade and crisis” is conducted by Fredrick *et al* and the main aim of this research had been to see the challenges and opportunities for developing countries. This research had been conducted in the year 2010 as a work of the World Bank, Development Research group. To conclude the research findings of this research the researcher had taken secondary information such as data and figures to arrive at more accurate provision of research findings. The researcher might have arrived at better findings with the use of more data and figures which would have given an idea on Europe with a sense of more wide range of information which would have given the researchers a better idea. (Frederick, 2010)

The research 'Quality Conventions and the Governance of Global Value Chains' is conducted by Ponte Senior Researcher Danish Institute for International Studies in year 2011. Convention theory helps understanding the dynamics of governance in global value chains through its analysis of 'quality'. This had been particularly relevant as food and user safety awareness, and social and environmental concerns, which are key elements in present consumption patterns in industrialized countries – and as quality content becomes more complex. This article shows that global value chains are becoming increasingly 'buyer-driven' even though they are characterized by different forms of coordination in different segments. In particular, 'lead firms' have been able to shape the functional division of labour along value chains even though they practice relatively 'loose' forms of coordination with their immediate suppliers. This has happened because lead firms have been able to embed quality information into widely accepted standards, certifications, and codification procedures. According to this research Convention theory suggests that quality issues are central in understanding the way 'lead' firms shape the functional division of labour and entry barriers along a value chain. Furthermore, it suggests that 'functional leadership' will not only depend on how well a group of firms are able to shape another group's behaviour, but also on the perceived legitimacy of the mechanisms used to exert 'leadership'. In other words, the legitimacy of the content of quality and tools for managing quality will depend on a set of shared values and on the procedures for measuring quality performance – that is on the quality convention (or combination of conventions) they refer to. Under this light, further debate is needed on clarifying the historical dynamics of global value chains in relation to mechanisms of legitimation and justification of 'leadership', ways of measuring 'success', and the (changing) overlap of quality conventions along value chains. In addition to this, changes in international and domestic regulation need to be more clearly incorporated in discussions of governance. Finally, this concludes that the efforts are needed in terms of better integrating the analysis of standards in value chain studies. This research had been done with the use of secondary data, it would have been more accurate if the researcher was able to use primary data which would have given opinions of people which would

have made the research more presentable. (Ponte, 2011).

The researches Paula Darveyet *al* conducted the research, "Knowledge Management as competitive advantage: lessons from the textile and apparel value chain" in year 2012. The purpose of this research had been to investigate knowledge management in the textile industry specifically through the relationships and interconnections of knowledge management systems, strategy and performance across the value chains. This research had examined the process of acquisition, retention, maintenance, and retrieval of knowledge both within the firm through organizational memory and across the value chains. A series of case studies had examined how invista manages knowledge internally and externally through relationships with downstream partners across a single value chain within the textile industry. Qualitative information had been assessed regarding knowledge management systems. Accordingly the differentiation through knowledge is concluded to be difficult in practice. Invista had taken the first steps to develop knowledge management systems that connect the internal and external knowledge has to gain competitive advantage establishing internal knowledge management systems for organizational memory creates opportunities to minimize knowledge isolation in functional departments and creates a greater base for tactic learning to be leveraged. External knowledge management systems bring value chain members closer together and add value to the product throughout the value chain. This research had been conducted with the use of primary data through surveys and other questionnaires. The researches could have used more surveys and firms to get more information to conduct the research. (Paula Danskin, 2012)

V. JUSTIFICATION OF THE RESEARCH GAP

There had been many studies done relevant to the field of apparel industry and also other researches relevant to the value chain. These researches include the research done by Gereffi and Memodevic on "The Global Apparel Value chain: What prospects for upgrading by developing countries", the research done by Sturgeon on "How Do We Define Value Chains and Production Networks?", the research done by Gereffi on "Local Clusters in Global chains:

The causes and consequences of Export Dynamism in Torreon’s Blue Jean Industry”, the research done by Gereffi on “International trade and industrial upgrading in the apparel commodity chain”, the research done by Pecket *al* on “creating agile supply chains in the fashion industry”, the research “Lean or agile is a solution for lean management in the textiles and clothing industry? International Journal of Operations and Production Management” conducted by Lucy Daly and Neil Towers. The research by John Humphrey and Hubert Schmitz on “Governance and Upgrading: Linking Industrial cluster and global value chain research”, the research done by Gereffiet *al* on “The global value chain, trade and crisis”, the research ‘Quality Conventions and the Governance of Global Value Chains’ done by the researcher Stefano Ponte and also the research conducted by Danskin on “The knowledge management as competitive advantage: lessons from the textile and apparel value chain.

Though there have been many studies conducted it is quite clear that to conduct the study on the “Impact of Value chains on Apparel Industry” in Sri Lanka there is a very clear gap. This is mainly because of the conduct of the prevailing researches done long ago and also the researches not being relevant to the specific country in consideration to the current research which creates a research gap. This research gap allows the researcher to do the research findings of this current study more effectively and efficiently.

VI. CONCEPTUALIZATION

This study will be mainly be focused on the role of the value chain activities on the apparel industry of Sri Lanka. The research will study on the impact these activities and what factors effect on customer satisfaction which will later strive for apparel industry sustainability. These factors will influence the production of low cost and higher quality products making it easier to face challenges. Conceptualization of the problem and the researches approach is represented in the given figure 05.

The figure 04 is developed by the author on the conceptualization to better understand and conduct the research.

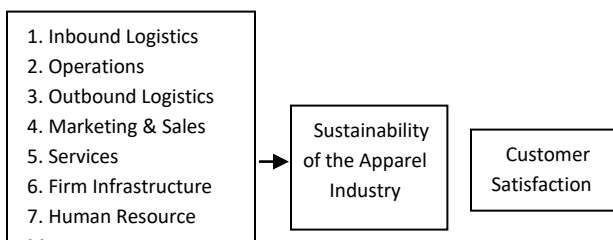


Figure 04: Conceptualization
Source: Developed by author (2015)

According to the research done by Gereffi, the researcher discusses how these functions of value chain leads to trade and crisis in his research “The Global Apparel Value chain: Trade and crisis”, also the research “Quality Conventions and the governance of global value chains” conducted by Ponte discusses ways and methods on which the quality of the value chain can be improved. Likewise many researches have been conducted on value chain and ways to improve its activities. Whereas in this specific research the researcher deals in finding the relationship of the value chain activities to customer satisfaction and the impact it has on the whole apparel industry.

VII. FORMULATION OF THE RESEARCH

$$x = f(y)$$

$$y = f(a, b, c, d, e, f, g, h, i)$$

Where *x* = Sustainability of Apparel Industry.

y = Customer Satisfaction

a = Inbound Logistics

b = Operations

c = Outbound Logistics

d = Marketing & Sales

e = Services

f = Firm Infrastructure

g = Human Resource Management

h = Technology

i = Procurement

In this, x is the sustainability of apparel industry, whereas y is the customer satisfaction which is a function of a, b, c, d, e, f, g, h, i which indicates Inbound logistics, Operations, Outbound Logistics, Marketing and sales, Services, Firm Infrastructure, Human Resource Management, Technology and procurement. This is based on the conceptual framework shown in figure 04.

variable factors such as inbound logistics, outbound logistics, supplies etc. effecting the quality of the product, time, wastages, delivery etc. which will decide the performance of the apparel industry.

VIII. OPERATIONALIZATION

The dependent variable of the research the customer satisfaction is affected by the independent

Table 01: Operationalization

The Variables	The Determinants	The Indicator
Inbound Logistics	The storage facilities for goods The frequency of purchase The methods of transportation	Efficiency of Logistic activities
Operations	The layout of the firm The frequency of production The designing of the business	Time taken for operational activities
Outbound Logistics	Transportation services provided The delivery services adopted	Efficiency of Logistic activities
Marketing and Sales	The marketing strategy The frequency of sales The sales capacity	Marketing and Sales utility
Services	After services provided for customers Services provided for workers The cost incurred for services	Efficiency of services provided.
Firm Infrastructure	The internal infrastructure layout The total value of infrastructure The infrastructure not pertinent to the firm	Utility of firm Infrastructure
Human	The number of	Labor turnover of the organization

Resource Management	workers in the firm The Number of managers The provisions for workers	
Technology	The technology adopted The types of machines The adaptation to technology	Efficiency of technology
Procurement	The frequency of buying goods The security given for products	Time taken for procurement activities.

Source: Developed by author

IX. SAMPLE PROFILE

The research will be primarily based on Primary data which will be collected through questionnaires of 30 firms whom will be selected out of the total population of apparel firms in the Colombo District. And also managers and employees will be interviewed from 10 apparel firms. This method of data collection is in consistent with the researcher Gary Gereffi who also collected data using questionnaires. This sample will be selected as it is convenient to conduct interviews and gather more specific data with the support and contribution of the selected managers and employees.

X. DATA COLLECTION

The data will be collected according to the Primary method by conducting a survey using questionnaires and interviews as this method helps to get more accurate and up to date data which was also adopted by the researcher Gary Gereffi to conduct his research.

The relevant data and variables will be evaluated through multiple regression analysis, percentage analysis, and coefficient of correlation and factors analysis with the use of SPSS software.

XI. DATA ANALYSIS

Analysis of data relevant to the study “The impact of value chains on apparel industry” will begin as soon as the data collection is finalized. The relationship between independent variable and the dependent variable will be identified and calculated in this

process according to the significance of the study. This process will be conducted using the analytical tool such as MS excel, Statistical Package for Service Solutions (SPSS version 20), which were also used by Gereffi *et al* in 2010.

The modal fit of the research is R Squared, significance of ANOVA table. Sample adequacy is measured by by KMO test. Reliability was tested by cronbach alpha which is an inbuilt feature of SPSS. Validity of data is measured using the expert validity test using the supervisor. Data is analyzed descriptive, quantitative and qualitative methods. Data is univariial, bivariial and multivariable. The correlation, co efficient, and significance is measured using 95% of confidence interest.

Estimation of Empirical Model

When it comes to multivariate analysis there are several useful matrixes and indicators which gained through the help of SPSS (Version 20). Some of them are correlation matrix, KMO test or sample adequacy, Cronbach’s Alpha for reliability test, R square to identify how far the independent variable influence the dependent variable, ANOVA significance and coefficients of variable.

Sample adequacy mean how much the sample can be used to generalize the population. To find the value for sample adequacy KMO test is used under factor analysis. Table 4 shows the calculations of KMO test.

Table 02: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.648
Bartlett's Test of Sphericity	Approx. Chi-Square	86.776
	Df	45
	Sig.	.000

Source: Developed by the author (2015)

According to the KMO table shown in table 02 the value gained for sample adequacy through KMO test is 0.648. This value shows that this sample is adequate enough to conduct the current research. However the researcher believes that the value for sample adequacy should be a greater value than what is achieved, but as stated in section 1.3 of chapter one

the research will be conducted in the geographical boundaries of Colombo district. Therefore it

restricts of reaching apparel organizations out of Colombo district and also with the constrain in reaching to location out of the city with a limited time frame the researcher is satisfied with the sample adequacy for this specific research.

Next the reliability of the sample will be accessed with the help of the Cronbach's alpha. This is shown in Table number 03.

Table 03: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.751	.741	9

Source: Developed by author (2015)

According to the Cronach's alpha table the reliability value of this survey is 0.741. This indicates good reliability and states that the data set can be generalized with the population.

And then to measure the goodness of the fitness of the sample the R square is used from the model summary. The calculation is done using the SPSS (Version 20). Table 4 shows the model summary in the measurement of goodness.

Table 04 :Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.838 ^a	.702	.568	.718	.702	5.241	9	0	.001

a. Predictors: (Constant), Proc, Opera, Servi, In Log , Hum Re M, Out Log, Firm Inf, Mark & s, TechnSource: Developed by the author (2015)

In the regression analysis which is measured using R square the Independent variables are 70% effective on the Dependent Variable. The R square value is considered to be effective by the researcher as it has a good relationship over the Independent variable and the dependent variable.

Also to find whether the independent variables really affect in order to influence the dependent variable the researcher have used the ANOVA significance. Table 05 shows the ANOVA test which is used to find the ANOVA significance.

Table 05: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.344	9	2.705	5.241	.001 ^b
	Residual	10.323	20	.516		
	Total	34.667	29			

a. Dependent Variable: Customer Sat

b. Predictors: (Constant), Proc, Opera, Servi, In Log, Hum Re M, Out Log, Firm Inf, Mark & s, Techn

Source: Developed by the author (2015)

By analyzing the ANOVA table we can conclude that the Independent Variable is really influential to the dependent variable as the ANOVA significance of the current research is .001.

Then the relationship of the Independent variables to its dependent variable is analyzed using the Coefficient analysis. The coefficient analysis is depicted in table 06

Table 06 : Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error				Beta	Lower Bond
1	(Constant)	1.555	1.911		-.814	.425	-5.540	2.431
	In Log	.190	.123	.200	1.539	.139	-.067	.447
	Opera	.058	.137	-.057	-.421	.678	-.344	.229
	Out Log	.088	.161	-.084	-.549	.589	-.424	.248
	Mark & s	.00	.163	.217	1.224	.235	-.141	.541
	Servi	.232	.151	.232	1.533	.141	-.084	.547
	Firm Inf	.250	.141	.292	1.768	.092	-.045	.545
	Hum Re M	.167	.187	.127	.892	.383	-.224	.558
	Techn	.056	.186	.053	.299	.768	-.332	.443
	Proc	.332	.176	.333	1.888	.074	-.035	.699

a. Dependent Variable: Customer Sat

Source: Developed by the author (2015)

There is a clear cut positive impact over customer satisfaction. Outbound Logistics shows a positive impact over customer satisfaction showing a value of 0.88. Marketing and Sales indicates a value of 0.200 declaring its positive relationship over customer satisfaction. Services takes a value of 0.232 indicating that there is a positive relationship over customer satisfaction. Firm Infrastructure values 0.250 indicating its positive relationship over customer satisfaction. Also Human Resource Management is positively

related to customer satisfaction with a value of 0.167. Technology also has a positive influence over the increase in customer satisfaction as it has appositive value of 0.567. And finally the independent variable Procurement also has a positive relationship with customer satisfaction as it is valued as 0.332.

When correlation matrix is taken into consideration it shows how independent and dependent

variables influence together. The Table 07 shows the correlation matrix of the study.

Table 07 : Corelation

	Op ra	Out Log	Mark & s	Servi	Firm Inf	Hum Re M	Techn	Proc	Customer Sat
Op er a N	1 . 30	-.176 .353 30	.332 .073 30	-.047 .807 30	.171 .365 30	-.051 .789 30	.100 .599 30	.076 .691 30	.097 .609 30
Op er a N	1 . 30	-.176 .353 30	.121 .524 30	.218 .248 30	.395* .031 30	.146 .443 30	-.017 .929 30	.296 .112 30	.283 .130 30
M ar k &a m p; s N	.332 .073 30	.121 .524 30	1 . 30	.372* .043 30	.486** .006 30	-.128 .500 30	.513** .004 30	.266 .156 30	.550** .002 30
Se rvi N	-.047 .807 30	.218 .248 30	.372* .043 30	1 . 30	.059 .756 30	.038 .843 30	.429* .018 30	.092 .629 30	.403* .027 30
Fir m Inf N	.171 .365 30	.395* .031 30	.486** .006 30	.059 .756 30	1 . 30	.102 .590 30	.240 .201 30	.458* .011 30	.576** .001 30
Hu m Re M N	-.051 .789 30	.146 .443 30	-.128 .500 30	.038 .843 30	.102 .590 30	1 . 30	-.013 .945 30	.415* .023 30	.277 .138 30
Te ch n N	.100 .599 30	-.017 .929 30	.513** .004 30	.429* .018 30	.240 .201 30	-.013 .945 30	1 . 30	.447* .013 30	.525** .003 30
Pr oc N	.076 .691 30	.296 .112 30	.266 .156 30	.092 .629 30	.458* .011 30	.415* .023 30	.447* .013 30	1 . 30	.633** .000 30
Cu st o m er Sa t N	.097 .609 30	.283 .130 30	.550** .002 30	.403* .027 30	.576** .001 30	.277 .138 30	.525** .003 30	.633** .000 30	1 . 30

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

According to Table 05 The correlation of Customer satisfaction is positively related over the value chain factors of Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, Services, Firm Infrastructure, Human Resource Management, Technology and Procurement. And also according to table 05 there is a very significant relationship to customer satisfaction over Outbound Logistics with a value of 0.550, A significant relationship with Marketing and sales with customer satisfaction with a value of 0.403, the relationship of Services takes a very significant

According to this research Inbound Logistics is positively influenced by the customer satisfaction which takes a value of 0.190. Operations also takes a value of 0.058 making a

XII. QUALITATIVE ANALYSIS

The Apparel Industry of Sri Lanka is one main industry which plays a major role in the economy of Sri Lanka having a major impact through its exports and imports over the GDP of the nation, employment, export earnings and balance of inequality. Therefore improving and focusing more on the apparel industry will lead the Nation to newer heights. In this specific study the researcher focuses on the aspect that has a main impact over the apparel firms, and that is the value chain. Each of these factors such as Inbound Logistics, Operations, Outbound Logistics, Marketing and sales, Services, Firm Infrastructure, Human Resource Management, Technology and procurement activities will be closely monitored with customer satisfaction which ultimately lead to the sustainability of the apparel industry.

After conducting surveys these specific facts were found in relation to the Value chain. Most of the managers of the organization declared that Inbound Logistics plays a major role while Outbound Logistics plays a major role in the organization which are mostly outsourced by the most of the apparel organizations that were taken into consideration, even though the researcher was unable to get the facts that was expected. Also most of the organizations stated that Operations play a massive role in the organization carrying out its activities in the fields of Designing, Cutting, Stitching, Manufacturing, Packing, Transportation and Distribution for other than the administrative functions which will ultimately decide the quality of the final product that is delivered to the customers. The Human Resource Manager of Rusirumal (PTE) Ltd stated that,

"Operations is the heart of any organization, carrying out properly coordinated

Operations ensure that customers are given a quality product with a lower cost

Which determines the value paid for the product"

All the managers of the organizations stated how important Operational activities is for the organization in satisfying the basic customer wants.

Marketing and sales were stated to be about the product price and the selection of a target market by most of the companies using their strategies to capture customers. Most of the managers stated that advertising activities are not carried out by the organizations. Services were also stated to be of importance as this determines the services provided to customers even after product delivery which satisfy their need. Also the managers stated how important firms infrastructure is which is different from one firm to another according their capacities, the human resource was said to be managed by a Human resource manager by most of the organizations. The technological barriers were said to be the difficulty of transferring and adopting into new technology, the difficulty of finding skilled workmen and the higher costs incurred to implement and maintain machines and other equipment which determine the efficiency of the production process by quickening the activities ensuring a timely delivery to its customers. And also most of the managers stated that procurement activities are mostly done through agents to ensure the more accurate carrying out of activities.

When customer satisfaction is considered in the perspective of the managers of the organization they stated that customers are acquired and retained by giving them a quality product appropriate for the value paid by them. Also the manager of Fantasia Pvt Ltd, Mr Mohamed Hameed stated that,

"Customer is the king, without the customers there is no industry"

All these organizations believe that customers play a major role and that all the value chain activities individually plays a significant role as they are interconnected to one another. However through this survey it is understandable that most of the apparel firms had a sound knowledge on the value chain activities and that they are properly coordinated to satisfy the customer needs and wants ensuring the development of their individual firms.

XIII. DISCUSSION

As stated previously the apparel industry is a main industry that plays a massive role in the economy of Sri Lanka. Sri Lanka once was the market leader for apparel manufacturing when it comes to the International market, but over time with the influences of other countries who managed to win the markets with strong and focused strategies were able to put down the position of Sri Lanka to a lower

point. The downfall of exports over time is shown using table 01 of chapter one. For a country to be economically successful it should ensure the expansion of all its industrial activities, this includes the better conduct of the apparel industry too. To regain the lost position in the apparel international markets and to defeat the currently leading countries in the field such as China, India, Bangladesh and Pakistan, it is important that the government and organizations maintain strategies, and try to gain competitive advantage over other firms to win the customers. Looking deeply at this perspective, the researcher believes that gaining competitive advantage is important for any industry which was also proved by researches such as Ponte and Gereffi in their previous studies. Therefore this specific research is conducted in order to provide the organizations an opening eye on how they should manage their activities in order to regain its lost position in the market. For this the researcher has selected "The value Chain" which is not given much attention in the current scenario.

According to the surveys and studies carried out previously surveys state what an important role the value chain plays on any organization, *"Convention theory helps understanding the dynamics of governance in global value chains through its analysis of 'quality'. This is particularly relevant as food and user safety awareness, and social and environmental concerns, are key elements in present consumption patterns in industrialized countries – and as quality content becomes more complex. The global value chains are becoming increasingly 'buyer-driven' even though they are characterized by different forms of coordination in different segments. In particular, 'lead firms' have been able to shape the functional division of labour along value chains even though they practice relatively 'loose' forms of coordination.* (Ponte, 2011). Also many researches done by researches such as Gereffi states that Value Chain is more of a buyer driven strategy which has an impact over the customer satisfaction in a massive way. Believing that the "Customer is the King" all the organizations engage in a massive competition trying to fulfill their customer needs and wants. Since the Value Chain is believed to play a major role in the apparel industry on customer satisfaction as proved through many researches. *"The apparel industry is identified as a buyer-driven value chain that contains three types of lead firms: retailers, marketers and branded*

manufacturers. (Memodevic, 2003) As stated by Memodevic in his research the value chain itself is believed to be buyer driven.

However taking a closer look at the research "The impact of Value Chains on apparel Industry" the researcher was able to find what impact the value chain activities such as Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, Services, Firm Infrastructure, Human Resource Management, Technology and procurement activities plays on customer satisfaction which ultimately decides the sustainability of the apparel industry. Customer satisfaction is believed to be the main drive for the success of any organization. If the organization is successful in meeting the customer requirements as desired, the organization in consideration have a massive advantage of retaining customers which is a main goal of any organization. Therefore to draw conclusions and to see what impact the value chain activities has on the sustainability of the apparel industry the researcher uses the "Value Chain" as the independent variable and also the "Customer Satisfaction" which is derived through the activities of the value chain as the dependent variable. As stated in figures and tables in chapter four, section 4.3, 4.4, and 4.5 it interprets the relationship of these Independent Variables over the Dependent Variable of the study. And as stated and explained in chapter four there is a very clear cut relationship with the Independent variables and the Dependent Variables. There is a positive relationship with Inbound Logistics and Customer Satisfaction, Operations and customer satisfaction, Outbound Logistics and customer satisfaction, Technology and customer satisfaction, Marketing and sales and customer satisfaction, Services and customer satisfaction, Firm Infrastructure and customer Satisfaction, and lastly Procurement and customer satisfaction. From the conclusions that can be drawn by using the software for the data base it can be accessed that there is a more significant relationship of Outbound Logistics, Operations, Services, Technology, Marketing and Sales and Procurement over customer satisfaction. By analyzing the correlation table developed by the author it can be stated that the efficiency of activities such as Outbound Logistics, Operations, Services, Technology, Marketing & Sales and Procurement will impact customer satisfaction more. This indicates that there is a very significant relationship and that the improvement of these

activities will improve customer satisfaction more compared to the other value chain functions. However it is impressive to see the relationship of these value chain activities and the customer satisfaction as it has significant positive relationship proving us that that improvement of these activities will lead to better serving its customers.

Also when the qualitative analysis is taken into consideration it states what an important role all these activities play on the success of the organization. How these functions contribute to the development of the organizational activities is stated in section 4.4. From this analysis we can conclude that many factors such as customers, employees, organizational structures, legal environment, the costs and the economic conditions all together influence all these value chain activities in general. The organizations held great regard to customers' satisfaction and is highly educated on what kind of a role it plays on the wellbeing and the development of their organizations. Most of the managers declared that retaining loyal customers is far more important than attracting them. When the costs and profits pertinent to the organizations are taken into consideration according to the statements given by managers of the firms, the researcher can conclude that the carrying out of activities of the value chain effectively and efficiently reduces cost of production and also increases quality. This enables the apparel firms to keep a higher profit margin or increase sales by giving a lower product to the customers. By implementing efficient value chain activities the apparel firms can counter on their sales while increasing profits.

Therefore from this analysis the researcher can conclude that all the value chain activities such as inbound logistics, operations, outbound logistics, marketing and sales, services, firm infrastructure, human resource management, technology and procurement has a positive relationship over customer satisfaction as the relationship of these functions were accessed individually keeping the other factors affecting customer satisfaction constant in section 4.3. As the efficiency of these functions are increased in relation the customer satisfaction will also be increased. The more unsuccessful an organization carries out value chain activities the more it will lose its customers. The customer satisfaction is the main drive that will drive the organization to success. It is clear that all these

activities are interrelated. Where the proper conduct of value chain activities will determine customer satisfaction which will influence the organizational success which will then influence the apparel industry of Sri Lanka finally impacting the International apparel markets. Therefore the root to the success of the apparel industry can be said to be the Value chains. Conducting these Value Chain activities properly will also ensure the reduction of costs and wastages of the organization enabling the firms to increase their costs creating competitive advantage over other firms. The data analysis of this chapter indicates the significant and the positive relationship the value chain activities has on the customer satisfaction. Therefore from this analysis the researcher can conclude that the value chain is the main determinant which includes all primary and secondary activities of the organization that drives the firm towards success, which will help the industry to develop with the development of small, medium and large firms giving the opportunity for Sri Lanka to be significant in the world yet again and get a geographical indication as the "Worlds Apparel Leader".

XIV. CONCLUSION

The main focus of the conduct of this study is to gain competitive advantage from an aspect which is not given much focus that is the "value chain". The mastering on these activities will ensure that the organizations activities are carried out more effectively and efficiently reducing the costs and wastages of the firm and enabling them to increase their sales and profits. The impact the value chain functions of Inbound Logistics, Operations, Outbound Logistics, Marketing & Sales, Service, Firm Infrastructure, Human Resource Management, Technology and Procurement over customer satisfaction as they are all positively related where the increase of the efficiency of value chain activities will end up increasing customer satisfaction. As stated in the section 4.5 all these variables are inter related when the apparel value chain influence the customer satisfaction, which then influence the firm's success, which then influences the apparel industry of Sri Lanka ultimately allowing the industry to play a major role in the International Apparel markets. Therefore if the foundation of something is laid properly the outcome of it would also be impressive. In this study the foundation is the value chain which determines the success of the apparel

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