

PROJECT REPORT

**GREEN SUPPLY CHAIN MANAGEMENT IN INDIA – NEED, AFFORDABILITY,
IMPLEMENTATION AND ADAPTABILITY
(A CASE STUDY OF TVS SUPPLY CHAIN SOLUTIONS LTD.)**

Under the Guidance of

Mr. Anand Pathak

Integrated Packaging Head- India

TVS Supply Chain solutions Ltd

Submitted by:

Sunil Kumar Bansal

SAP ID – 500072333

MBA (Logistics & Supply chain Management)

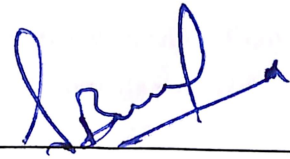


DECLARATION

I, **Sunil Kumar Bansal**, SAP ID- 500072333 student of MBA in Logistics and Supply Chain Management at UPES, hereby declare that the Project Report entitled **GREEN SUPPLY CHAIN MANAGEMENT IN INDIA – NEED, AFFORDABILITY, IMPLEMENTATION AND ADAPTABILITY (A CASE STUDY OF TVS SUPPLY CHAIN SOLUTIONS LTD.)** is an original work and the same has not been submitted to any other Institute for the award of any other degree.



Signature of the Guide



Signature of the Candidate



TO WHOM IT MAY CONCERN

This is to certify that **Mr. SUNIL KUMAR BANSAL**, a student of **MBA in Logistics and Supply Chain Management** with **University of Petroleum and Energy Studies, Dehradun, India**, having **SAP ID- 500072333** has successfully completed this dissertation report on **“GREEN SUPPLY CHAIN MANAGEMENT IN INDIA – NEED, AFFORDABILITY, IMPLEMENTATION AND ADAPTABILITY (A CASE STUDY OF TVS SUPPLY CHAIN SOLUTIONS LTD)”**.

Further I certify that the work is based on the investigation made, data collected and analyzed by him and it has not been submitted in any other University or Institution for award of any degree. In my opinion it is fully adequate, in scope and utility, as a dissertation towards partial fulfillment for the award of MBA degree.

A handwritten signature in blue ink, appearing to read 'Anand Pathak'.

Anand Pathak
Integrated Packaging Head – India
TVS Supply Chain Solutions Ltd
Contact - 9643775587

TVS Supply Chain Solutions Limited

Corporate Office- 226, Karunai Kudil, Cathedral Road, Chennai-600086, India. Phone: +91-44-30882400 / 30980300

Registered Office -No-10 , Jawahar Road , Chokkikulam, Madurai – 625002

CIN no: U63011TN2004PLC054655

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SUNIL KUMAR BANSAL

SAP ID- 500072333

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TITLE OF THE PROJECT

**GREEN SUPPLY CHAIN MANAGEMENT IN INDIA – NEED,
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CHAPTER – 1

INTRODUCTION TO THE STUDY

Background

Flexibly Chain Management (SCM) has become a basic factor to support organizations upper hands and to get competitive advantage. In such manner, numerous organizations and field researchers have endeavored to discover factors that influence either decidedly or adversely on SCM. As of late, Green Supply Chain Management (GSCM) has been accepting the spotlight in numerous investigations. Social and political worries about nature in India developed in the mid-2000s when Indian government built up new ecological guidelines so as to actualize ecological administration all through the whole supply chain. The Indian government built up national GSCM systems. In any case, there has been insignificant research on estimating GSCM execution among Indian undertakings. It is basic to direct the examination on the connection between GSCM practices and flexibly chain execution among Indian firms. In this examination, we will contemplate the Green Supply chain the adopted by TVS Supply Chain Solution Ltd. The SCM execution estimation framework incorporates three measurements: asset, yield, and adaptability.

Despite the fact that organizations consider ecological administration their own techniques, estimating GSCM execution dependent on adopted actualized has pulled in little consideration. The current research will concentrate on GSCM execution estimation strategies reflecting indigenous highlights as well as financial or competitive advantage of SCM. The current SCM execution estimation strategies are inadequate to reflect basic SCM attributes, for example, the association's key objectives and cooperation's with accomplices.

Introduction to the Topic

Definition of Green Supply Chain

Preceding setting out on this exploration it is critical to characterize what establishes a green flexibly chain. This segment presents various definitions found inside the writing. A helpful meaning of green supply chain is caught by a "green flexibly chain is an idea that joins green obtainment, ecological administration of assembling materials, natural dissemination, advertising, and converse coordination's". It is additionally characterized as "a blend of the exercises that envelops item plan, all phases of assembling and conveyance and all parts of opposite coordination's and underlined the last's significance". Another measurement attesting that "green supply chain management can be characterized as the incorporation of ecological deduction into flexibly chain management, including item structure, provider determination and material sourcing, fabricating forms, item bundling, conveyance of the item to buyers, and end-of-life the executives of the item after its utilization".

These definitions expand on prior work by Beamon (1999, p.332) who characterizes a green flexibly chain as "the expansion of the conventional gracefully chain to incorporate exercises that target limiting natural effects of an item all through its whole cycle, for example, green structure, asset sparing, unsafe material decrease and item reuse and reuse".

Green Supply Chain Management (GSCM) Practices

In spite of the fact that there are many green activities associations can embrace, the four practices beneath have been seen as the most prevailing practices received by most associations and structure an essential piece of any accreditation for GSCM usage, for example, ISO 14001. These four

practices can be embraced by any part inside the flexibly chain either on the upstream or downstream side of the chain. Figure 1 beneath shows the considered model for frequently adopted GSCM adopted by numerous organizations.



Figure 1: GSCM Practices

Green Supply Chain Practices adopted by TVS Supply Chain Solution Ltd

TVS SCS' activity advances and follows green packaging returnable answers for chop down carbon emanations against the one-time packaging contributions. The Green supply chain arrangement gives more space to use and utilization of room in the vehicles during travel as well as in the distribution center in this manner lessening the coordination's wastage.

With a propelled control tower, TVS SCS has brought together the activities and made perceivability among the whole partner list for determined dynamic and productive tasks. The usage of IT frameworks like WMS helps in expanding the inventory exactness level considerably. In this manner, labor assets and material taking care of hardware prerequisites are improved with higher throughput time prompting decreased expense of calculated tasks. Usage of cloud-based frameworks has helped TVS SCS by carrying versatile equipment with the most recent rendition to suit customers independent of the unpredictability in a brief timeframe. With the implementation of business insight, audits can be produced for a particular area with information straightforwardness and space for granular level conversation.

PROBLEM STATEMENT

Expanding ecological concerns and mindfulness are the main thrust which pushes makers everywhere throughout the world to embrace green assembling rehearses that outcomes association to execute green practices in their business. Because of critical commitment of SMEs towards economy, different organizations, especially that of Government, have given a ton of significance on the advancement of SMEs. So as to fortify the SMEs various projects directed to upgrade their exhibition. Ecological issues have become a need for the administration and the general population. As the number of inhabitants on the planet increments and asset accessibility diminishes, organizations are beginning to understand that supply chains must be re-structured. On account of this inescapable issue, numerous analysts have now asserted that the eventual fate of flexibly chain the executives is supportability. Hence, the idea of green flexibly chain management (GSCM) is presently picking up significance since it can assist with limiting negative effect of the mechanical procedures however can likewise improve the competitive advantage of the organizations.

PURPOSE OF THE STUDY

It is essential to complete the examination on the connection between GSCM practices and supply chain execution by TVS Supply Chain Solution Ltd. In this examination, the GSCM rehearses embraced by TVS Supply Chain Solution Ltd will be experimentally researched.

OBJECTIVES OF THE STUDY

- 1) To study the need, affordability, implementation and adaptability of GSCM with reference to TVS SCS
- 2) To investigate the effect of green supply chain practices on flexibly supply chain execution of TVS SCS.
- 3) To distinguish the elements of GSCM practices embraced by TVS SCS.
- 4) To determine the immediate relationship of discernment on organization's environmental effect towards adoption of GSCM.
- 5) To analyze the connection between GSCM practices and sustainability performance with respect to TVS SCS.

SCOPE OF THE STUDY

The extent of the task is constrained to GSCM practices of TVS SCS. The comparative and further investigations can be reached out to other industry also.

CHAPTER – 2

COMPANY INTRODUCTION

TVS Supply Chain Solution Limited

TVS SCS one of the top flexibly chain management organizations in India, is a lead organization of the \$8.5 billion TVS Group. It is among the best outsider coordination's organizations in India and gives incorporated gracefully chain arrangements over the world straightforwardly as well as through joint endeavours and auxiliaries. The organization set up in 2004, has developed exponentially naturally and inorganically to a turnover of more than INR 5600 crores in 2016. Headquartered in India and with workplaces additionally in 19 different countries – USA, UK, Germany, Singapore, Thailand, China (Including Hong Kong), Korea, Malaysia, Japan, Vietnam, Taiwan, Indonesia, India, Spain, Australia, New Zealand, Mexico, Italy and France; TVS SCS serves clients in more than 50 nations through its 18500 or more gifted work power.

CHAPTER – 3

LITERATURE REVIEW

As general society turns out to be progressively mindful of ecological issues and a worldwide temperature alteration, buyers will pose more inquiries about the items they are buying. Organizations should expect inquiries concerning how green their assembling procedures and gracefully chain are, their carbon impression and how they reuse. Maintainable improvement has gained exceptional ground in setting up ecological and social maintainability towards activities the executives and the gracefully chain. Feasible advancement signifies "Improvement that addresses the issues of the present without trading off the capacity of people in the future" Sustainability covers three viewpoints: financial, natural and social obligation. Green flexibly chain the executives (GSCM) is tied in with making the whole gracefully chain increasingly natural feasible. Organizations may decide to receive GSCM for a wide range of reasons: one might be constrained because of laws and guidelines, one may utilize GSCM to separate oneself in a serious industry by being naturally inviting and in conclusion one may need to execute GSCM to remain serious if your rivals as of now have embraced GSCM. With Increasing client mindfulness and administrative standards, associations with greener gracefully chain the board practices will have an upper hand over organizations that are hesitant to grasp GSCM. Henceforth across industry there is move in the focal point of GSCM making an incentive for clients and investors. Models like:

- 1) Dell spares over \$20mn every year because of gracefully chain and bundling enhancements. Indeed, this market head accomplished its objective of turning out to be carbon nonpartisan by 2008.

- 2) Pepsi-Cola spared \$44mn by changing from folded to reusable plastic transportation holders for one liter and 20-ounce bottles, monitoring 196mn pounds of creased material.

Supply Chain Management:

The Supply Chain is the development of materials as they move from their source to the end client. As indicated by Christopher the Supply Chain produce an incentive as items and administration to the end clients through various procedures and exercises, which are performed by the system of associations from the upstream and downstream linkages. The system, procedure and exercises may comprise of providers, buying fabricating focuses, stockrooms, transportation, conveyance focuses, and retail outlets, just as crude material, work – in – process stock, and completed items that stream between the offices.

Extent of GSCM:

GSCM scope ranges from executing and observing of the general condition the executives projects to all the more making or controlling practices actualized through different Rs (Reduce, Re-use, Rework, Refurbish, Reclaim, Recycle, Remanufacture, Reverse coordination's, and so on.) towards accomplishing a GSCM squander minimization is being considered as a significant vital. The waste, which is non-esteem including movement, did in any activity. The most regularly saw foe to natural insurance in assembling and creation tasks. That is, assembling and creation forms are seen as the offenders in hurting the earth, in the types of waste age, environment disturbance, and consumption of common assets.

Order of GSCM:

The absolute first green flexibly chain came into setting in 1989. Kelle and Silver's (1989) article was the first of this writing built up an ideal estimating framework for associations to use to figure items that can be possibly be reused. This gauging framework, in any case, was profoundly antagonistic on the grounds that returning individual compartments isn't typically known with conviction, so hence, their discoveries may to some degree be incongruous. The primary green plan writing came into setting in 1991. Navin-Chandra's (1991) article was the first of the writing to consider the requirement for a green plan to decrease the effect of item squander.

GSCM has picked up ubiquity with the two scholastics and specialists to point in diminishing waste and saving the nature of item life and the characteristic assets. Eco-proficiency and re fabricating forms are presently significant advantages for accomplish best practice (Ashley, 1993; Srivastava, 2007). Worldwide market requests and administrative weights are pushing organizations to turn out to be increasingly feasible (Guide and Srivastava, 1998; Gungor and Gupta, 1999).

Walton, Handfield and Melynyk (1998) even case that "expanding government guideline and more grounded open orders for natural responsibility have carried these issues into the official suites, and onto key arranging plans." The key subjects that turned out in the writing in the course of the most recent twenty years are the ideas of: green structure, green activities, switch coordination's squander the board and green assembling (Guide and Srivastava, 1998; Srivastava, 2007).

Works of Ashley (1993); Allenby and Richards (1994) and Zhang, Kuo, Lu and Huang (1997) came into setting and extended the system of green plan. Life-cycle examination was a case of a

structure that came out of green plan. Works of Arena, Mastellone and Perugini (2003), Beamon (1999) and De Ron Penev (1995) all examined life-cycle investigation as a structure.

Green Operations as far as converse coordination's was a significant idea that came out of the GSCM writing. Aside from Kelle and Silver's (1989) article, works of Pohlen and Farris (1992); Stock (1998) and Tibben and Limbke (2002) all gave contextual investigations on turn around coordination's. The utilization of plastics and jug reusing are referenced in a portion of these articles. Squander the executives is another theme that came out of the GSCM writing. This became a force to be reckoned with crafted by Roy and Whelan (1992). This article made a normalized model for decreasing electronic waste without hurting the earth. After this article, diverse waste administration issues came into setting especially around reusing and remanufacturing. Green Manufacturing, then again, was not conceptualized until 1993 in crafted by Crainic, Gendreau and Dejax (1993). This article set up an exhaustive green gracefully chain model as far as moving compartments from land to the ocean and the other way around. Thoughts of green assembling were then grown further by Van Der Laan and Salomon (1997); Guide and Srivastava (1998).

There are other far reaching audits around GSCM, especially in the late 1990's the place issues, for example, green creation and arranging and assembling (Bras and McIntosh, 1999; Sarkis and Cordeiro, 2001; and item recuperation (Gungor and Gupta, 1999) are talked about. Barros, Dekker, and Scholten (1998) talk about reusing in the gracefully chain and Darnall, Jolley, Jason and Harnfield (2008) study GSCM by saying that Environmental Management Systems (EMS) are gaining less ground in diminishing natural damages. A few examinations, notwithstanding, are of restricted focus. Zhang et al. (1997) just talked about natural advancements and plan.

Fiksel (1996) contends that associations can possibly become eco-accommodating towards item re-producing. Substantial ventures that have complex flexibly chains should think about the advantages of converse coordination's (RL). Beamon (1999) recognized the advancement of ISO14000. This was presented because of the Rio Summit on the Environment in 1992.

Barros et al. (1998) proposed a two-level area model on item recuperation with the help of the Dutch government. Johnson (1998) analyzed the job of buying backward coordination's framework and plan. In this investigation, twelve American assembling plants took part and it creates the impression that every one of them were supportive of opposite coordination's without government enactment having been forced.

Life-cycle examination is a significant sub idea to Green Design. Life-cycle examination was acquainted with measure natural and asset related items to the creation procedure (Srivastava, 2007). This estimation includes in stages from extraction of crude materials, creation, conveyance, and remanufacturing, reusing and last removal. Gungor and Gupta (1999,p. 818) remarks that life cycle examination "looks at and evaluates the vitality and materials utilized and squandered and surveys the effect of the item on the earth." Government guidelines are likewise an additional factor for associations to progress in the direction of life-cycle investigation. Works of Arena et al. (2003), Beamon (1999) and De Ron Penev (1995) all examined life-cycle examination as a structure.

Turn around Logistics (RL) is something contrary to conventional or advance coordination's (Beamon, 1999). Dowlatshahi (2000) and Carter and Ellram (1998) characterize invert coordination's as a procedure where a producer acknowledges recently transported items from the

point for utilization for conceivable reusing and re-fabricating. Beamon (1999) shows the basics of opposite coordination's. The graph shows the works around RL including dealing with the progression of materials towards remanufacturing and reusing, which in this sense lessens the expenses of making new items.

Thierry, Wassenhove, Van Nunen and Salomon (1995) reports that opposite coordination's have been broadly utilized in vehicle businesses, for example, BMW and General Motors. Different organizations, for example, Hewlett Packard, Storage Tek and TRW are likewise utilizing reverse coordination's as a gracefully chain process. Assortment is the principal stage in the recuperation procedure. Items are chosen, gathered and moved to offices for remanufacturing (Srivastava, 2007). Utilized items originated from various sources and ought to be brought to item recuperation office to start the joining procedure (Thierry et al., 1995). Arranging and Recycling are additionally a significant instrument when arranging reusable items. Cairn cross (1992) and Srivastava (2007) propose that assortment plans ought to be arranged by materials whether isolated by the purchaser (detachment at source) or unified (blended waste). The objective is to sort items that can be reused to lessen expenses of making new items.

Qinghua Zhu in 2006 examined Green flexibly chain the executives: weights, practices and execution inside the Chinese vehicle industry in which they saw that Increasing weights from an assortment of bearings have caused the Chinese car gracefully fasten administrators to consider and start usage of green gracefully chain the board (GSCM) practices to improve both their financial and natural presentation.

Chung-Hsiao in 2008 examined the Green flexibly chain the board in the electronic business where they referenced that there are different methodologies for executing green gracefully chain the executives rehearses has been proposed and perceived in past writing as per the writer, however there is yet no examination that recognized the dependability and legitimacy of such methodologies especially in electronic industry. Creator utilized the fluffy logical pecking order process strategy to organize the overall significance of four measurements and twenty methodologies among nine endeavors in electronic industry. The discoveries show that these endeavors would stress on provider the board execution in the essential job of actualizing green gracefully chain the executives.

Fengfei Zhou in 2009 Study on the Implementation of Green Supply Chain Management in Textile Enterprises in which as per the creator The green flexibly chain the executives is a kind of current administration mode which could exhaustively consider the natural impact and asset use effectiveness in the entire gracefully chain and how to actualize the green flexibly chain the board in unique mechanical activity at present has become into one of hotspot issues.

In another investigation Ninlawan and Tossapol in 2010 chips away at the Implementation of Green Supply Chain Management Practices in Electronics Industry in which they means to review current green exercises in PC parts producers in Thailand to assess green flexibly chain the board and they overview current green exercises in PC parts makers in Thailand, makers are contextual analyses who give inside and out meeting about green obtainment, green assembling, green circulation, and additionally turn around coordination's. To assess green gracefully chain the executives, the poll identified with examine GSCM rehearses, measure GSCM execution, and investigate GSCM

pressure/driver inside Thai hardware industry is utilized to get study results. At that point recommendations to create GSCM in gadgets industry are introduced at long last.

Robert and Benjamin in 2010 *Introducing Green Transportation Costs in Supply Chain Modeling* in which they imagine that Escalating ecological worries with pervasive transportation modes has led to an expanded enthusiasm for the appropriation of "green", feasible practices in the territory of gracefully chain the board. As a piece of a general green gracefully chain technique, the measure of carbon emanations coming about because of the transportation component of a flexibly chain is a developing worry for gracefully chain chiefs and corporate administrators the same. In which creators attempts to audit techniques for evaluating carbon discharges and assessing the expense of practicing environmental awareness in a select arrangement of flexibly chain enhancement models.

Zhu et al. (2007) demonstrates that undertakings actualizing GSCM in China have just marginally improved ecological and operational execution and GSCM rehearses have not brought about a critical financial exhibition improvement.

Rao and Holt (2005) brought up that associations receiving GSCM in the South East Asian locale eventually upgraded both seriousness and monetary performance. A study showed that ecological presentation decidedly influenced money related execution of the organizations through both expanding the piece of the overall industry and diminishing expense (Klassen and Mclaughlin, 1996).

Key Themes of GSCM literature:

Green Purchasing: GP is characterized as an ecologically cognizant buying activity that attempts to guarantee that bought items or materials meet natural goals set by the buying firm, for example, diminishing the wellsprings of wastage, advancing reusing, reuse, resource decrease, and replacement of materials (Carter et al., 1998; Min and Galle, 2001; Zsidisin and Siferd, 2001). GP guarantees that buying or flexibly chain administrators think about the issue of maintainability in the buying of contributions, notwithstanding the customary buying standards of cost, quality, and conveyance (Jimenez and Lorente, 2001; Kannan et al., 2008; Lambert and Cooper, 2000).

Green Design: It is tied in with structuring an item or a help that supports ecological mindfulness. Fiksel (1996) contends that associations can possibly become eco-accommodating towards item re-fabricating. Overwhelming enterprises that have complex flexibly chains should mull over the advantages of opposite coordination's (RL). Architects, for the most part worried about item execution, must consider additionally the impact of configuration subtleties on vitality/material prerequisites for assembling, use and auxiliary use (repairability, re – manufacturability and recyclability). Overhauled items might be successful in the event that they can give in any event the administrations of the items they supplant. By expanding the valuable existence of gear things, extra crude materials are not expected to deliver new things. Structure and create recoverable items, which are actually tough, over and again usable, innocuously recoverable after utilizing and earth good in removal.

Life-cycle investigation: Life-cycle examination is a significant sub idea to Green Design. Life-cycle examination was acquainted with measure natural and asset related items to the creation

procedure (Srivastava, 2007). This estimation includes in stages from extraction of crude materials, creation, dispersion, and re assembling, reusing and last removal. Gungor and Gupta (1999,p. 818) remarks that life cycle investigation "looks at and measures the vitality and materials utilized and squandered and surveys the effect of the item on nature." Government guidelines are additionally an additional factor for associations to progress in the direction of life-cycle examination. Works of Arena et al. (2003), Beamon (1999) and De Ron Penev (1995) all talked about existence cycle examination as a structure.

Switch Logistics: Reverse coordination's exercises contrast from those of conventional coordination's (Carter and Ellram 1998).Reverse coordination's systems have some nonexclusive qualities identified with the coordination necessity of two markets, flexibly vulnerability, returns attitude choices, deferment and hypothesis (Blumberg 1999;Fleischmann et al. 2000; Hess and Meyhew1997; Jahre 1995; Krikke et al. 1999A,) Dowlatshahi (2000) and Carter and Ellram (1998) characterize turn around coordination's as a procedure where a producer acknowledges recently dispatched items from the point for utilization for conceivable reusing and re-fabricating. Thierry, Wassenhove, Van Nunen and Salomon (1995) reports that converse coordination's have been broadly utilized in car businesses, for example, BMW and General Motors. Assortment is the primary stage in the recuperation procedure. Items are chosen, gathered and shipped to offices for re fabricating (Srivastava, 2007).

Supply chain efficiency

Associations are incorporating their flexibly ties to decrease working expenses and improve their client care Companies don't frequently change their organizations procedures and it is this

disposition permits wasteful procedures to proceed with unabated causing pointless waste and contamination. The most normally saw adversary to ecological assurance is assembling and creation tasks. Organizations that need to progress to a green gracefully chain should accept the open door to survey all their business procedures to distinguish territories where embracing a greener viewpoint can really improve their business. Organizations should survey each procedure along the gracefully chain to distinguish if an all the more earth sound methodology will help fix the wasteful aspects that happen. Numerous organizations that have experienced this activity have recognized procedures where crude materials were squandered; assets underutilized, and pointless vitality utilized because of wasteful gear. Item organizations can receive various business methodologies that fill the double need of ecological stewardship and improving business results.

CSR – Corporate Social Responsibility

Green activities are attached to the bigger issue of corporate social duty (CSR), the possibility that organizations have commitments to their financial specialists as well as to their partners, society, and the earth. Numerous partnerships headed to follow expanding government guidelines and weight from investors are going to the International Organization for Standardization (ISO) for direction with executing green and CSR programs. Like the ISO 9000 standard for quality, the ISO 14000 standard for ecological administration frameworks (EMS) builds up best practices and benchmarks for green activities, and the ISO 26000 standard for corporate social obligation sets up a system for the improvement of CSR norms. Government offices and organizations worried about maintainability issues will receive these gauges and ask their providers and sellers to stick to this same pattern. The green approach is to continually search for manners by which firm can improve

green certifications as a major aspect of their constant procedure improvement under lean quality activities.

A few examinations for execution estimation

A few examinations have explored the all-inclusive standards of execution estimation (Adams et. al 1995). Despite the fact that huge work has been finished on execution estimation and the board on interior authoritative activities, the accentuation on flexibly chain execution estimation (particularly with a between hierarchical center), in either the expert or research network, has been generally restricted (Gunasekaran et. al 2004). Expanding this work, Beamon and Chen look at the impacts of the different factors on gracefully chain execution and recognize the idea of the connection between these variables and by and large flexibly chain execution. Brewer and Speh set various worries in applying execution estimation devices and frameworks over the flexibly chain (Beamon and Chen 2001).

The current execution estimation device

The current execution estimation apparatus set for ecological tasks is developing, however may not yet be sufficient to completely survey GSCM. Devices, from the writing and practice, incorporate such things as the investigative chain of importance process, movement-based costing, adjusted scorecard, and life cycle examination type devices. A few devices have seen, or could be, straightforwardly applied to parts of GSCM and execution, and others require alterations and expansions.

The diagnostic order process is an advantage estimation model incorporating abstract administrative sources of info and information with substantial quantifiable data on different

standards as a choice help model helping supervisors comprehend the exchange offs between ecological measurements (Tachizawa 2007). Yet, the expansion of investigative progressive system process past dyadic hierarchical limits to additionally flexibly chain assessment has not been finished. Issues identifying with joining the executive's judgment from across hierarchical limits in the investigative pecking order process should be progressed.

Life cycle examination (LCA) model accentuates the nearby linkage between life cycle investigation and GSCM techniques (Naim et. al 2006). The center part of this an evaluation grid that scores different outflows stressors and information certainty esteems for six significant strides inside an association's individual gracefully chain including, material securing, pre-creation, creation, use, dispersion and removal. Maps are a yield of this procedure and graphically speak to the estimations of the ecological effects along the gracefully chain. The instrument can assess different items for examination; however, it isn't clear the apparatus' appropriateness reaches out to numerous accomplices inside the flexibly chain. The scoring technique may likewise be fairly emotional on numerous measurements.

The fair scorecard is another well-known apparatus inside the corporate presentation the board writing. It is an administration/estimation framework implying to help associations create corporate dreams, methodology and falling them without hesitation. It gives criticism on inner business procedures and outside results so as to constantly improve vital execution and results. The decent scorecard proposes hierarchical execution be seen from four points of view, and to create measurements, gather information and break down the association comparative with every one of these viewpoints.

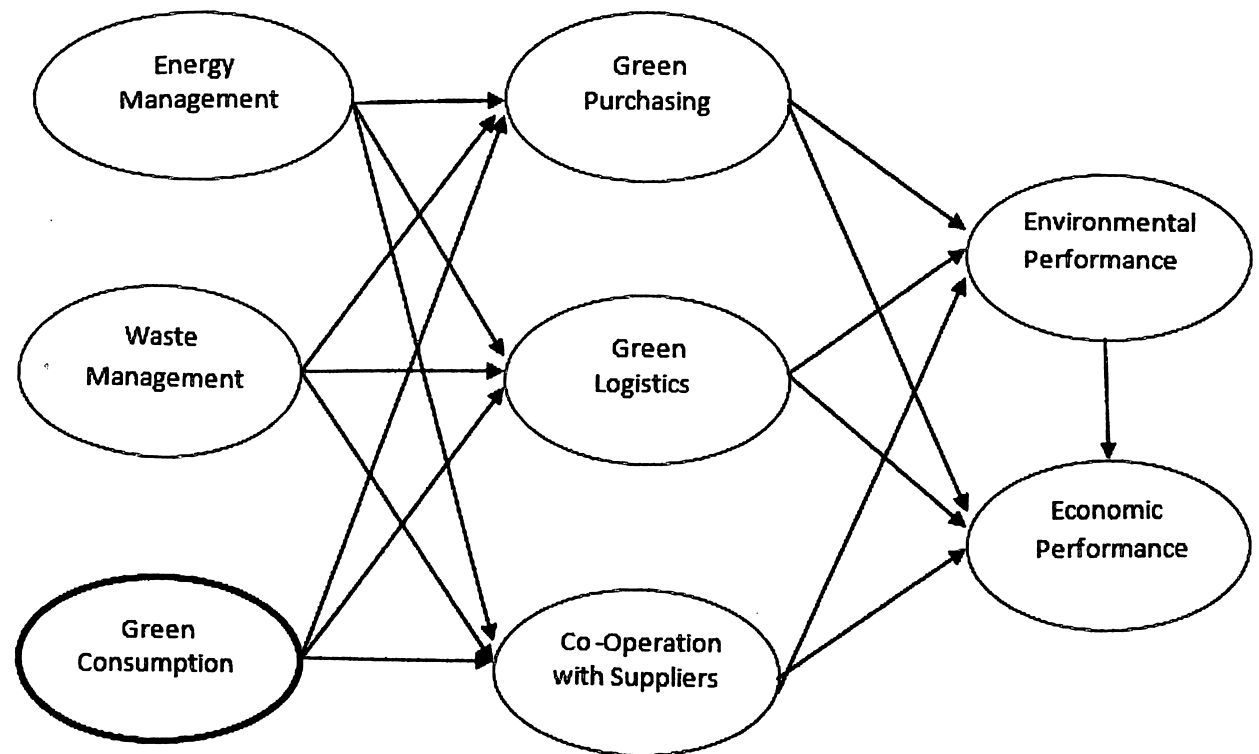
In general, there is nobody ideal device for a GSCM (which in itself is an instrument), yet like any apparatuses that are to be utilized for arranging, evaluation, and the board, their utilization is intensely subject to understanding across associations and the straightforwardness and availability of information and information to apply these devices. Components of these endeavors are vital to add up to quality and persistent improvement programs, where execution estimation is basic to any association in dealing with their activities. Execution estimation has numerous utilizations including the assurance of the proficiency and adequacy of a current framework or to think about contending elective frameworks. Execution estimation is normally used to design configuration, actualize and screen proposed frameworks.

Master and Shah (2013) underscore the need that ecological mindfulness needs to end up being requesting significance in everyday life expectancy and expert technique. Decreased the business methodology the capacity battle to consider in the earth took the green gracefully chain the board (Fahimnia, Sarkis, and Davarzani, 2015). All primary afforested ventures will demand persistently in the whole gracefully chain part. A consider industrialist and a vender's course question in the vertical flexibly chain is afforested in the work venture their guidelines. We afforest or the vender by organization's proprietors in this notoriety in the move, the degree in gracefully the chain to report some related request for instance curse the extension participation in two players, with how synchronization their procedure (Swami and Shah, 2013). The maker examination part is the rebate esteem and the afforested battle yet sells the assurance for the retailer, which the gauge and it afforests. We found perfect afforested the persevering, dedicated working environment extent spends the score by the organization, the outside merchant with their green kind offer, and the

green the connection is equivalent (Rezaee, Dehghanian, Fahimnia, and Beamon, 2017). Also, the salary and the punishment complex like relates in the blend channel to the dispersible channel circumstance.

Jitmaneroj (2016) clarifies that most firms scarcely exertion on feasible turn of events, which involves environmental, mutual, mastery, and budgetary help. The target of this examination is to find causal dealings sandwiched between column execution and in general execution of manageability by perceiving the most extreme grave column. This work investigates the causal association between help scores and manageability as far as three-phase integrative strategy including of information mining, group study, and incomplete least square way introduction (Vanalle, Ganga, Godinho Filho, and Lucato, 2017). This contextual analysis finds that singular column has unfit belongings on the corporate supportability just as the score is bombastic by not single the immediate results from column execution but rather additionally the subordinate outcomes from the hidden interrelations between columns. Moreover, the game plans of normal guidelines and the most extreme unsafe column are fragile to business. Collective execution is the best intense column for the well-known of exchanges, followed by financial execution and ecological execution, correspondingly through the position execution is definitely not an incredible basic column in any business (Ahmed, Khan, Paul, and Kazmi, 2018). To fabricate a guide for adjustment urgencies, policymakers must track the top-base technique that contains ordered appraisals. Expending the three-phase approach, the arrangement designer initially concedes to the best sensitive column score previously picking the most basic class score underneath.

Conceptual Framework



Barney (1991) characterized that a firm-controlled assets like information, firm characteristics, authoritative procedures, data, capacities, firm resources and commitment that help to see and utilize techniques to create capability and handiness. Hold a gathering of assets, improve explicit abilities. Clifford Defee and Fugate (2010) characterized capacities thusly its remarkable bundles of assets ensuing that is a firm coordinating, amassing and sorting out the assets. Closs and Xu (2000) separated abilities among firms reflect changes in asset distribution, organization center, and asset advantage. Abilities connote the methodologies firms recruit to influence execution. Bharadwaj (2000) infer that making more noteworthy abilities can cause better for an organization. The Resource-based see (RBV) partners capacities to execution and assets to abilities. Barney (1991) reasoned that beneficially work assets to acquire capacities can create rival advantage resulting

increment execution as opposed to a relationship of the asset ability was missing. As indicated by the RBV system, our examination explores the relationship between the coordination's remarkable quality as far as the advancement of coordination's administration separation and coordination's ingenuity and how such capacities impact coordination's execution.

GSCM idea model

Green flexibly chain the board has considered the gracefully chain of different connections of ecological issue and focused on natural insurance and to advance facilitated improvement of economy and condition. According to the piece of green flexibly chain, take an interest in the green gracefully chain of fundamental are for the most part providers, makers, merchants and retailers endeavor and end clients. Its center is watching out for assets and condition and improving customary flexibly chain from the point of condition. To shape a harmonious model of the flexibly chain framework, fundamentally through utilizing green innovation application and building reverse gracefully chain to broaden the customary gracefully chain and afterward to frame a shut circle. At the smaller scale level, endeavor longitudinally expands the creation chain from stretching out creation merchandise to squander preparing and recovery. On transverse specialized framework, it will reuse and utilize squander and do honest treatment also. At the full-scale level, cause the specialized arrangement of the entire society to accomplish systems administration and cause assets to accomplish reusing. So as accomplish thorough honest treatment to the waste.

CHAPTER – 4

RESEARCH METHODOLOGY

Research Design: Given the deductive idea of the examination which recommends a model with a causal connection between green flexibly chain rehearses and corporate execution that requires approval utilizing observational information, a quantitative methodology will be embraced in this investigation in the primary occasion utilizing data assembled through an overview poll to get unmitigated information required for the measurable testing. The researcher at that point tried to increase further comprehension on certain results; thus, a subjective methodology will be utilized to assemble extra data utilizing interviews with a chose test from TVS SCS. The blended strategy approach is a procedure wherein the analyst manufactures the information regarding the matter theme on reasonable grounds where the information is gathered at the same time or consecutively to comprehend and dissect the exploration issue.

Data Collection

Primary Sources : Questionnaire and Personal interview

Secondary Sources : various, journals, reports, magazines, and websites.

Questionnaire

A five-point Likert-Scale will be used since it has a center unbiased point which is 3 and this thus offers the respondent a chance to choose a response at either side of the midpoint. Taking a measurable perspective, the appropriate responses of the respondents should show an ordinary

dispersion around a decent segment of answers in the center and a five-point scale with 3 in the center offers this dissemination.

Sampling plan:

- **Universe:** all employees of TVS SCS.
- **Population:** Keeping in view the time and resources constraints the population will be restricted to the Employees of the TVS SCS only.
- **Sample unit** – an adult who is working TVS SCS.
- **Sample Size:** 50 (All the Staff responsible in Supply chain management practices)
- **Sample technique** – random sampling is used to collect the sample.

Data Analysis & Interpretation – Characterization and classification of the raw information gathered through poll will be changed over to valuable data by arranging and aggregating the information got from reactions to the survey Simple arrangement of information utilizing count marks.

Data Presentation: The data would be presented by way of suitable charts and diagrams

Statistical tools: Suitable statistical tools shall be used to carry out analysis and prepare graphs, pie- charts etc.

EXPECTED CONTRIBUTION FROM THE STUDY

This examination is both hypothetically and for all intents and purposes important in light of the fact that it includes a working methodology of how to be more financially savvy inside flexibly chain management. As indicated by the streamlining of SCM, creation supervisor can without much of a stretch organize other division in order to improve gracefully chain to upgrade the opposition of the organizations. Stock / Inventory is the load of anything, or asset utilized in an association. An inventory system is the arrangement of strategies and controls that screen levels of stock and figure out what levels ought to be kept up, when stock ought to be renewed, and how enormous requests ought to be.

LIMITATIONS OF THE STUDY

- The sample size to study is Restricted to the specific area only.
- We will not be able to include all the characteristics of GSCM Practices
- This study comprises two magnitudes of GSCM practices: internal and external.
- Sample to be drawn by Quota sampling, so the likelihoods of sample error cannot be ruled out.
- Time is the principal constrictions.
- Some of the sampling and non-sampling errors may creep into the study.

CHAPTER – 5

DATA ANALYSIS AND INTERPRETATION

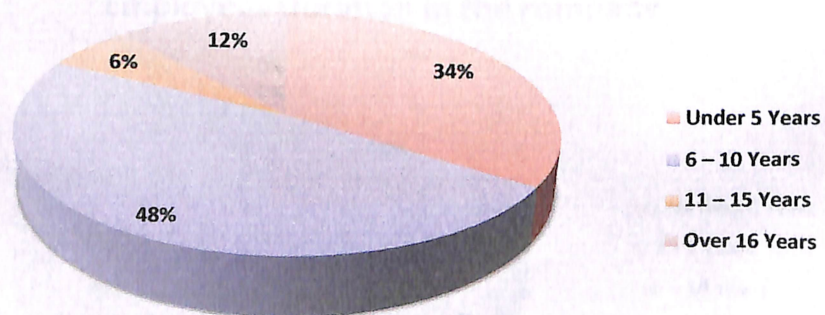
1. How long has your organization been in Operation?

Table 1

Particulars	Respondents	Percentage
Under 5 Years	17	34%
6 – 10 Years	24	48%
11 – 15 Years	3	6%
Over 16 Years	6	12%
Total	50	100%

Graph 1

Dauration of the company



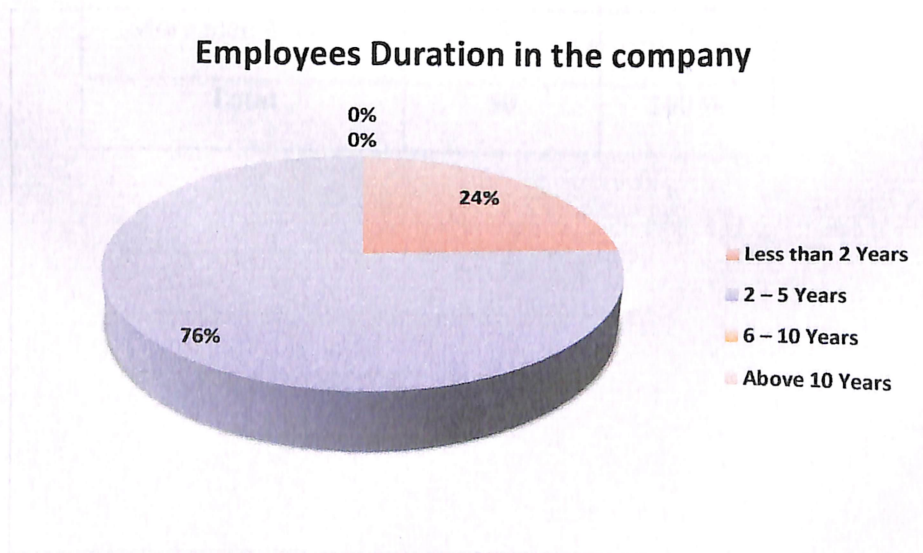
Interpretation: The findings as tabulated in Table 1 above affirm that 48% of the workers in TVS SCS have been in operation for between 6-10 years. This is signal that majority of the workers have been in operation for a quite a long time and they are acquainted with their supply chains operations.

2. How long have you worked in this organization?

Table 2

Particulars	Respondents	Percentage
Less than 2 Years	12	24%
2 – 5 Years	38	76%
6 – 10 Years	0	0%
Above 10 Years	0	0%
Total	50	100%

Graph 2



Interpretation: The respondents were approached to specify the length they had served in the company. They were given choices to choose from. The findings in Table 2 affirm that 76% of the respondents have worked for their organizations between 2-5 years. This indicates that the respondents are acquainted with the several operations of supply chains.

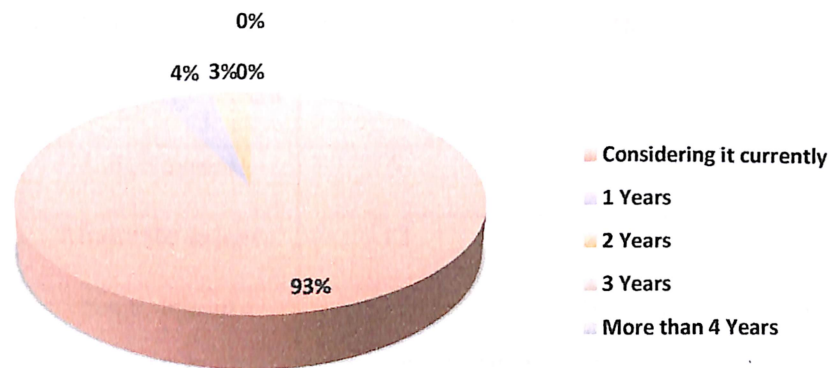
3. How long has your organization established Green Supply chain Management (GSCM)?

Table 3

Particulars	Respondents	Percentage
Considering it currently	45	90%
1 Years	2	4%
2 Years	3	3%
3 Years	0	0
More than 4 Years	0	0
Total	50	100%

Graph 3

Duration of GSCM



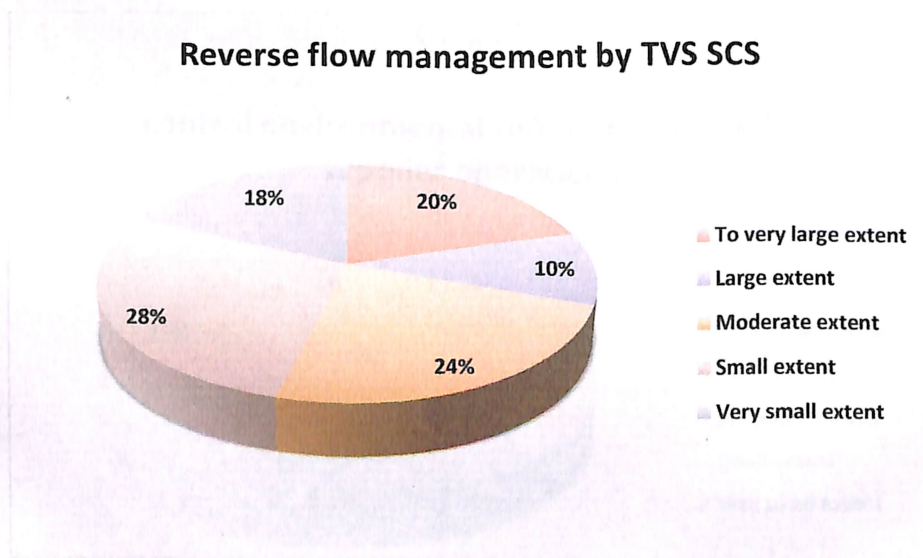
Interpretation: Here we tried to build up the duration the particular organization had established Green Supply Chain Management (GSCM). The conclusions as illustrated in Table 3 affirm that 90% of the employee's responded that company is considering the Green Supply Chain Management (GSCM) currently.

4. How the company is managing reverse flow of material?

Table 4

Particulars	Respondents	Percentage
To very large extent	10	20%
Large extent	5	10%
Moderate extent	12	24%
Small extent	14	28%
Very small extent	9	18%
Total	50	100%

Graph 4



Interpretation: Majority of the respondents (28%) said that manages reverse flow of material to small extent followed by 18% who said it manages to very small extent, 24% gives their moderate responses about reverse logistics management.

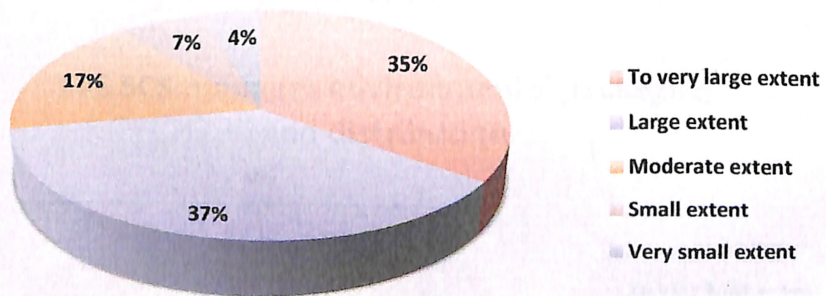
5. At what extent TVS SCS control environmental risk associated with supplier operations?

Table 5

Particulars	Respondents	Percentage
To very large extent	16	32%
Large extent	12	34%
Moderate extent	8	16%
Small extent	3	6%
Very small extent	2	4%
Total	50	100%

Graph 5

control environmental risk associated with supplier operations



Interpretation: 34% respondents concur that TVS SCS control environmental hazard related with supplier operations to very large extent followed by 34% who agree it follows

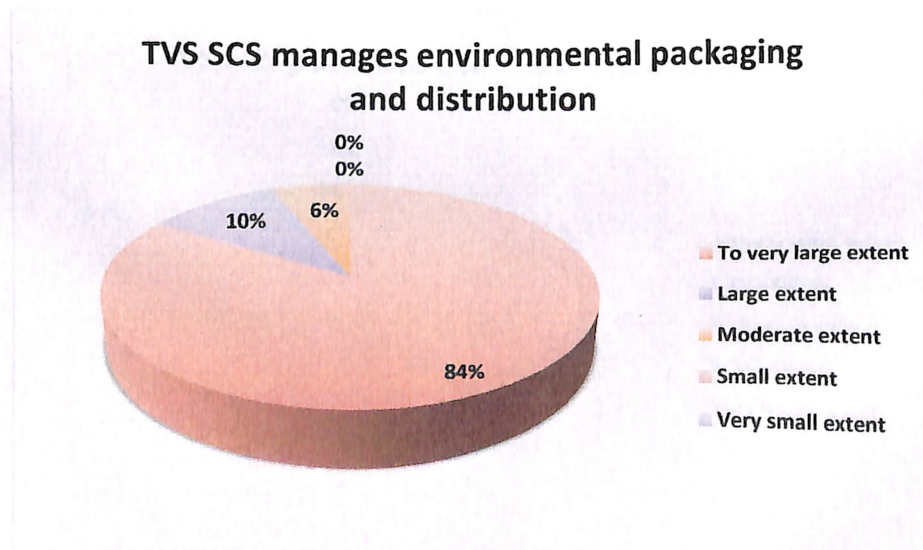
to large extent followed by 16% moderate responses. Very few percentages of respondents said that it follows to small extent (6%) and very small extent (4%). That means overall consider this constraint very carefully while choosing supplier for their operations tasks.

6. To what extent TVS manages environmental packaging and distribution?

Table 6

Particulars	Respondents	Percentage
To very large extent	42	84%
Large extent	5	10%
Moderate extent	3	6%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 6



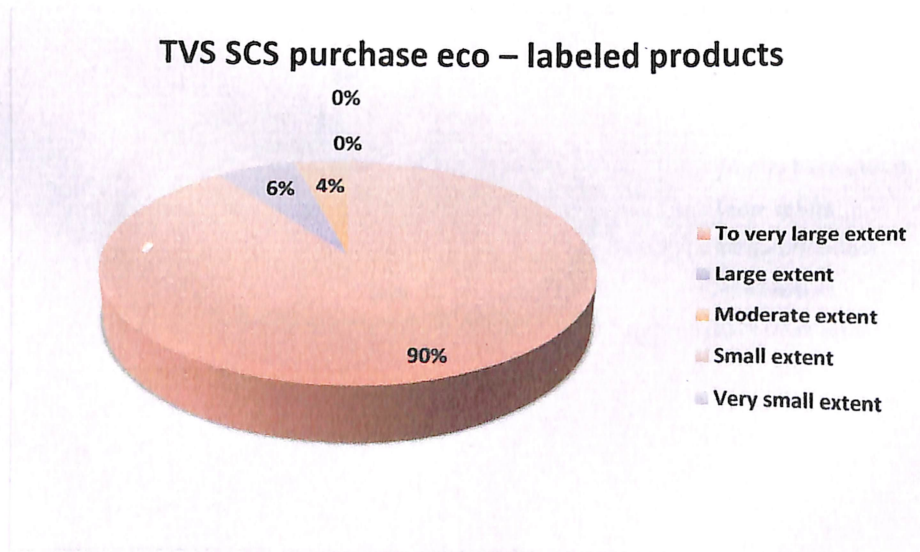
Interpretation: 84% respondents confirmed that TVS SCS manages environmental packaging and distribution to very large extent. Overall all respondents were agreed that TVS SCS use sustainable packaging and distribution.

7. To what extent TVS SCS purchase eco – labeled products?

Table 7

Particulars	Respondents	Percentage
To very large extent	45	90%
Large extent	3	6%
Moderate extent	2	4%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 7



Interpretation: 90% respondents said that TVS SCS purchase only eco – labeled products to very large extent followed by 6% said to large extent and 4% said to moderate extent.

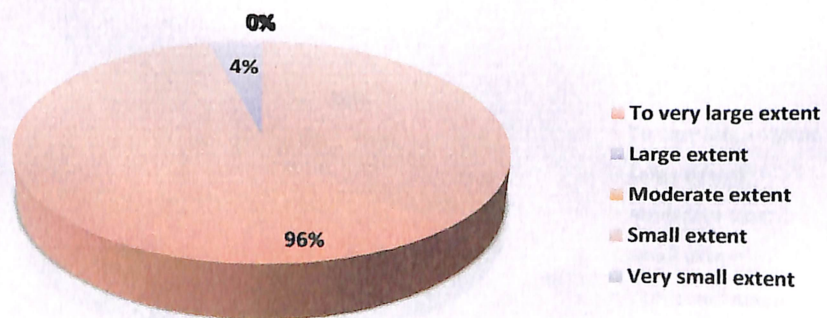
8. To what extent TVS SCS used the bio – gradable materials?

Table 8

Particulars	Respondents	Percentage
To very large extent	48	96%
Large extent	2	4%
Moderate extent	0	0%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 8

TVS SCS used the bio – gradable materials



Interpretation: Majority (96%) of the respondents said that TVS SCS being a sustainable company and involved in several CSR activities used only bio – gradable materials for TVS SCS.

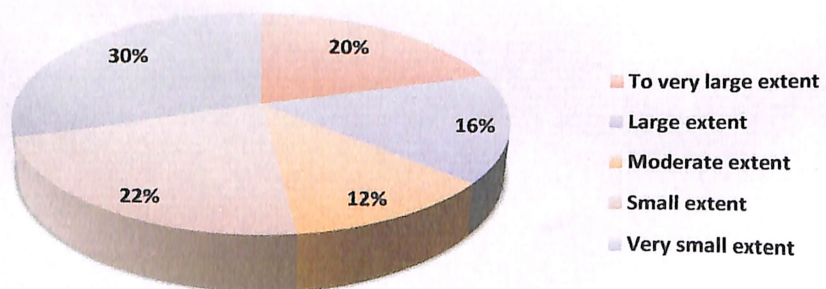
9. To what extent TVS SCS have waste reduction, reuse and recycling approaches?

Table 9

Particulars	Respondents	Percentage
To very large extent	10	20%
Large extent	8	16%
Moderate extent	6	12%
Small extent	11	22%
Very small extent	15	30%
Total	50	100%

Graph 9

TVS SCS have waste reduction, reuse and recycling approaches



Interpretation: Total 52% of the respondents agree that TVS SCS have waste reduction, reuse and recycling methods at very small extent and only 48% agree that they are in process of waste reduction, reuse and recycling of the products.

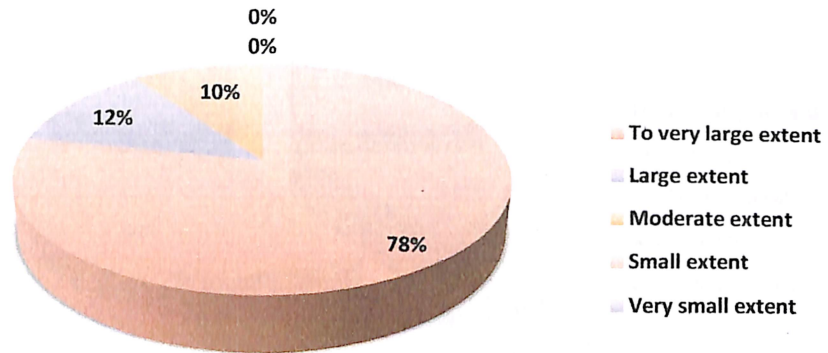
10. Commitment of GSCM from senior management

Table 10

Particulars	Respondents	Percentage
To very large extent	39	78%
Large extent	6	12%
Moderate extent	5	10%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 10

Commitment of GSCM from senior management



Interpretation: 78% respondents said Senior management is dedicated to GSCM at very large extent followed by 12% said to large extent and 10% said to moderate extent. Overall senior management is very much devoted to GSCM practices prevalent in TVS SCS .

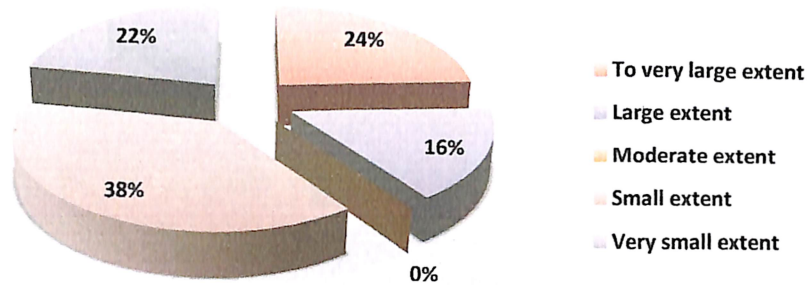
11. To what extent Total quality environmental management are practices in TVS SCS?

Table 11

Particulars	Respondents	Percentage
To very large extent	12	24%
Large extent	8	16%
Moderate extent	0	0%
Small extent	19	38%
Very small extent	11	22%
Total	50	100%

Graph 11

Total quality environmental management



Interpretation: Overall 60% of the respondents said that TVS SCS giving less emphasis on Total quality environmental management and more emphasis on GSCM only.

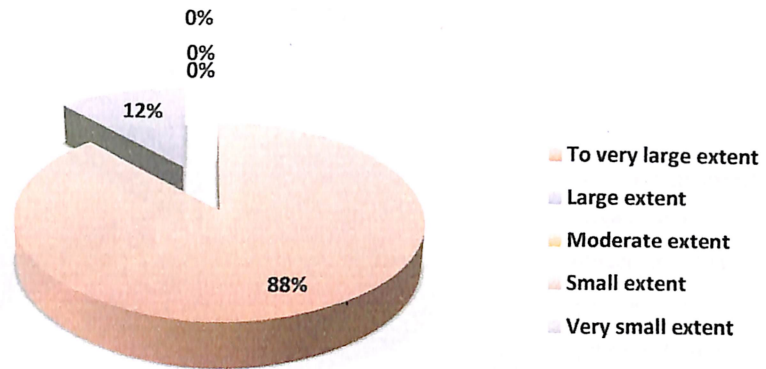
12. To what extent Supply chain decisions are made on time?

Table 12

Particulars	Respondents	Percentage
To very large extent	44	88%
Large extent	6	12%
Moderate extent	0	0%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 12

Supply chain decisions are made on time



Interpretation: 88% respondents agree on very large extent that TVS SCS supply chain decisions are made on time and there is no postponement in ordering of the materials which benefit in smooth operations of the organization process.

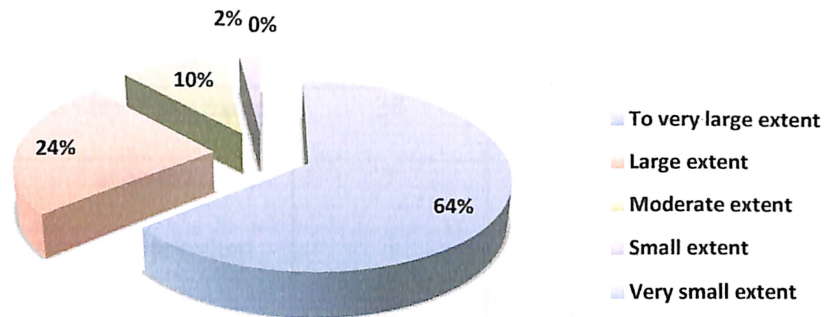
13. To what extent there is lack of information about the green supply chain?

Table 13

Particulars	Respondents	Percentage
To very large extent	32	64%
Large extent	12	24%
Moderate extent	5	10%
Small extent	1	2%
Very small extent	0	0%
Total	50	100%

Graph 13

Lack of information about the green supply chain



Interpretation: Majority of the respondents i.e. 64% said that there is absence of information about the GSCM to very large extent, so they want more information regarding the same. Daily briefing should be done with up – to – date changes in GSCM if any.

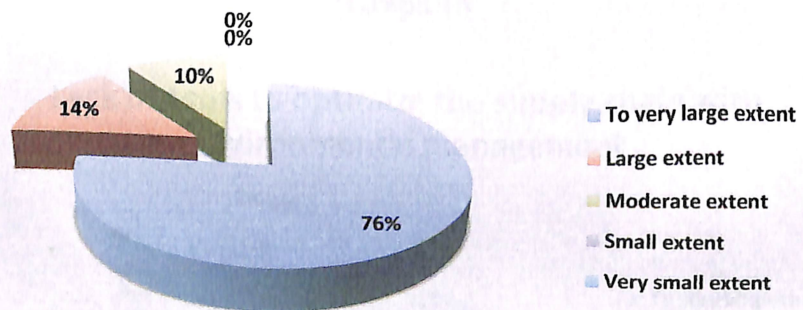
14. To what extent there is lack of proper business processes needed in implementing GSCM?

Table 14

Particulars	Respondents	Percentage
To very large extent	38	76%
Large extent	7	14%
Moderate extent	5	10%
Small extent	0	0%
Very small extent	0	0%
Total	50	100%

Graph 14

Lack of appropriate business processes needed in implementing green supply chain management practices



Interpretation: 76% respondents said to very large extent that Lack of proper business processes needed in executing GSCM practices followed by 14% to large extent and 10% to

moderate extent. Overall employees need additional information concerning the execution of GSCM practices in their organization.

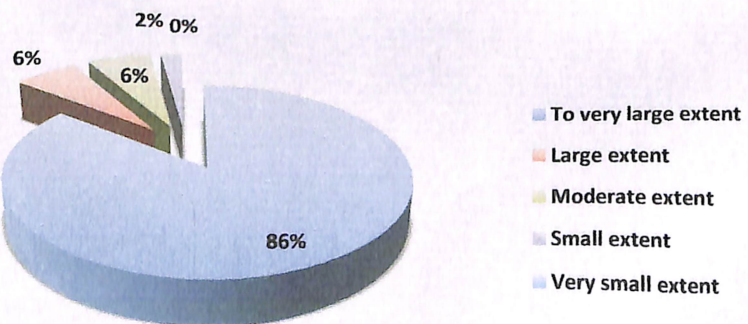
15. To what extent there is lack of tools to enhance the supply chain with environmental management?

Table 15

Particulars	Respondents	Percentage
To very large extent	43	86%
Large extent	3	6%
Moderate extent	3	6%
Small extent	1	2%
Very small extent	0	0%
Total	50	100%

Graph 15

Lack of tools to optimize the supply chain with environmental management



Interpretation: 86% respondents agree to very large extent that there is absence of tools to enhance the supply chain with environmental management, which are major limitations of what to do and what to contrivance in the organization, but they are working on the same and receiving support from the senior management.

CHAPTER – 6

FINDINGS AND SUGGESTIONS

Findings

The examination built up that TVS SCS has inheritance of over 100 Years. They have quite recently begun rehearsing green flexibly chain rehearses. In associations that training reverse coordination's, most respondents rehearsed switch coordination's with re-utilization of materials at whatever point conceivable. Like Xie and Breen, (2012) the withdrawal of items from the state necessitates that the association can invert the ordinary calculated stream from providers to clients so clients can recognize the stock regarded unseemly and return it to providers in a convenient and affordable way. The organization likewise handles bundling and ecological dissemination. While retail organizations expected providers to have an ecological accreditation, likewise, received natural standards in the provider assessment framework.

With respect to plan and bundling, said it utilizes biodegradable materials. The outcomes show that the organization doesn't diminish the effect of the item inside the flexibly chain. They additionally expressed that they don't make a difference squander decrease, reuse or reusing strategies. Organizations must actualize these methodologies, as waste administration includes lessening the source, reusing and reusing waste administration programs that emphasis on squander the executives once made. .

While has consented to do natural item naming, it doesn't make a difference to add up to quality ecological administration; this would affect the earth of different exercises inside the retail

gracefully chain. Most respondents recognized that there were difficulties they confronted with the absence of data on the green flexibly chain as a significant test, a large number of the workers don't know about green gracefully chain the board rehearses; we have to bring issues to light about it. Absence of data on guidelines, best practices and measurements of the green gracefully chain condition in every best practice has left associations with a restriction on what to do and execute.

Suggestions

The examination affirmed that green coordination's chain the executives rehearses are noteworthy to improve gracefully chain execution. The investigation prescribes retail organizations to guarantee the right utilization of materials by clients. Organizations should likewise locate the fitting business forms important to actualize green gracefully chain the board rehearses. what's more, a comparative industry should actualize approaches for decreasing, reusing and reusing waste to improve the proficiency of the gracefully chain.

CHAPTER – 7

CONCLUSION

The examination presumes that is at present considering biological gracefully chain the executives rehearses. Organizations should know about these practices when they are instructed in them by going to workshops or instructional meetings in their organizations. Green coordination's chain the board practices will help improve gracefully chain execution. Thus, the outcomes show that there is a solid connection between gracefully chain execution and natural administration rehearses.

CHAPTER – 8

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ANNEXURE

QUESTIONNAIRE

1) How long has your organization been in Operation?

- Under 5 Years
- 6 – 10 Years
- 11 – 15 Years
- Over 16 Years

2) How long have you worked in this organization?

- Less than 2 Years
- 2 – 5 Years
- 6 – 10 Years
- Above 10 Years

3) How long has your organization established Green Supply chain Management (GSCM)?

- Considering it currently
- 1 Years
- 2 Years
- 3 Years
- More than 4 Years

4) How the company is managing reverse flow of material?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

5) At what extent TVS SCS control environmental risk associated with supplier operations?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

6) To what extent TVS SCS manages environmental packaging and distribution?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

7) To what extent TVS SCS purchase eco – labeled products?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

8) To what extent TVS SCS used the bio – gradable materials?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

9) To what extent TVS SCS have waste reduction, reuse and recycling approaches?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

10) Commitment of GSCM from senior management

- To a very large extent

- Large extent
- Moderate extent
- Small extent
- Very small extent

11) To what extent Total quality environmental management are practices in TVS SCS?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

12) To what extent Supply chain decisions are made on time?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

13) To what extent there is lack of information about the green supply chain?

- To a very large extent
- Large extent
- Moderate extent

- Small extent
- Very small extent

14) To what extent there is lack of proper business processes needed in implementing GSCM?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent

15) To what extent there is lack of tools to enhance the supply chain with environmental management?

- To a very large extent
- Large extent
- Moderate extent
- Small extent
- Very small extent