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It is believed according to many authors that the practice of reverse Logistics has expanded over the last decade due to increased awareness about the potential economic, environmental and social benefits of product, packaging and material recovery. Reverse Logistics involves material management and physical distribution at all levels of supply chain. These levels are included somewhere within the supply chain subcategories of design, manufacture, distribution and recovery. Advancement of reverse logistics (RL) concepts and practices are more relevant now than ever before due to Green Energy concerns economic, regulatory and consumer pressure. It has also gained momentum because of fierce global competitiveness, heightened customer expectations, pressures on profitability and superior supply chain performance. The growing concerns about environmental issues, sustainable development and legal regulations have made organizations more responsive to RL. Increased competition, growing markets and a large base of product users in developing countries imply that buyers are getting more power in the supply chain even in these countries. Thus, managing product returns in an effective and cost-efficient manner is of increasing interest in business as well as in research. It leads to profits and at the same time increased customer service levels and higher customer retention. (Srivastava & Srivastava)In the first major study of reverse logistics published by the council of Logistics management (Kopicki, 1993) focused on adding " substitute" to this framework to give – Reduce, substitute, reuse and recycle. The council of Logistics management published another review of reverse logistics programs which identifies some activities which are specific to reverse logistics, which is also known as the six R’s (Stock 1998)One of the main activities in reverse logistics is the collection of the products to be recovered and the redistribution of the processed goods. Although this problem resembles the standard forward distribution problem, there are also some differences. There are usually many points from which goods need to be collected, the product packaging is generally problematic, cooperation of the sender is much more needed and the goods tend to have a low value. As reverse logistics is quite new, in many cases new networks need to be constructed. Major issues in creating new networks are the determination of the number of layers in the network, the number and location of depots or intermediary points, the use of drop points in the collection, the issue of integrating the reverse chain with the forward chain and finally the financing of the network. (Stock 1998)The products or the items that are returned can be classified based on the reasons for which they are returned. Some of the common reasons are due to commercial returns, service returns, end-of-use returns and end-of-life returns.

## Commercial returns

Commercial returns occur in a wholesaler - retailer or in a retailer - customer setting, where the buyer has a right to return the product, usually within a certain period. The reason behind the return option differs between the cases. In the first setting, the retailer faces the problem of how much he might sell and giving him a buy-back option lowers this risk for him. The returns are likely to be in bulk at the end of the season. In the second case the reason for the return option is that the buyer might not be sure whether the product (or the amount of products) really meets his/her requirements.

## Service return cases

Service returns generally arise due three reasons. First of all the products themselves may be brought or sent to a center for repair. If the repair is successful, they are brought back, else a new product or system needs to be bought and the failed one is discarded. Secondly, if one needs a continuous functioning of the product or system, one may directly replace the system or part by a spare one. The part will be repaired later, after which it will enter the inventory of spare systems or parts. Finally, in order for such a replacement scheme to be successful, service engineers need to have replacement parts with them to do the repair. This requires a sophisticated logistic system for ordering and delivering the parts (frequently using in night services). Beforehand however, it is not always clear which new parts are needed and as a result often the engineers order more parts than needed. The leftover parts then need to be returned to the parts warehouse. This is the third stream of returns. (Stock 1998)

## End- of-use returns cases

This type of returns is basically concerned with items or products that are temporarily needed by the consumer. The product may either be leased, rented or temporary given into the authority of the recipient. The latter is the case with distribution items, that is, products like containers, bottles, railcars and crates, which are used for distribution purposes. The main issue that can arise due these kinds of returns is that there can be a mismatch between returns and demands in time and place. How much are needed at which location and how much should be relocated within a certain time interval. Most items issued come back, but it is not always known when. (Stock 1998)

## End-of-life returns cases

The difference between end-of-life and end-of-use may seem to be smaller but it not the case. End-of-life refers to the intension of recovering valuable parts only whereas in the end-of-use case similar products were made with the returned products. Products and systems not only age intrinsically, but also because their environment puts higher requirements on them. This can be seen in computers and electronic equipment. End-of-life returns are products that are aged and that their functionality (if available) is far below actual standards. Yet they may still function satisfactorily and hence they can be used as source for spare parts for similar systems. One study by an expert describes the dismantling of returned, end-of-life computers into useable spare parts with IBM. This source nicely combines with return obligations and it s a cheap source for spare parts for systems on which one does not want to spend too much. The problems identified were a lack of knowledge of what actually was in the computers as well as an insufficient information system to handle the operations. According to Klausner &Hendrickson product take-backs of consumer products is generally expensive, especially reverse logistics. Usually in take-back programs the cost exceeds revenues for recycling the products itself. The best way to make profits is to combine proﬁtable remanufacturing and unproﬁtable materials recycling. The Proﬁt from remanufacturing could cover the loss from recycling as well as the costs of reverse logistics, allowing the manufacturer a Proﬁt. Since Remanufacturing requires a continuous ﬂow of returned postconsumer products. Firms could control the ﬂow of returned products, by buying back end-of-life products. (Klausner & Hendrickson)According to Dennis and Chwen Sheu the practice of reverse logistics involves three stages each stage has a set of people or organizations involved with the reverse logistics process, each having their own special interests. Stage 1: RetrievalThis stage is described as the process of collecting and removing goods from a customer. This stage is affected by the type of product picked up and who does the retrieval from the customer. There are several different operations of the retrieval process. These operations include: Store level returns retrievals—Store level returns are those returns that are retrieved from any type of store/outlet. This type of return is made up of product recalls, inventory returns, warranty returns, core returns, reusable containers, damaged goods, seasonal items, hazardous materials (HAZMAT) and stock adjustments. Consumer returns retrievals—Consumer returns are collected from the ultimate consumer. These returns include product recalls, warranty returns and damaged goods. Collection center retrievals— these retrievals involve product recalls, warranty returns, inventory returns, core returns, reusable container returns, damaged goods, seasonal items and hazardous materialsStage 2—TransportationThe second stage of the reverse logistics process is considered to be the actual movement of goods from one location back to another location. The transportation stage is extensively involved in all aspects of reverse logistics, since manufacturers are often unwilling to be the final destination of their returned goods. Instead, they prefer to have an outside source or third party logistics company dispose of these goods. As a result, transportation companies are often left holding the goods waiting for disposition information. These companies are recognizing the profitable situation of handling otherwise unwanted returned goods. Stage 3—DispositionThe final process involves decisions and actions associated with the fate of a product once a customer demonstrates product dissatisfaction. There are two types of disposition, on-site and off-site. Onsite disposition involves activities that take place at the customer’s facility to handle issues related to product concerns. The product may be repaired or replaced on-site. Off-site disposition involves shipping the defective product to a different facility for repair, replacement, or disposal. Reverse Logistics is one of the five processes in Reverse supply chain as mentioned by C. Prahinski, C. Kocabasoglu, the five processes are organized sequentially as product acquisition, reverse logistics, inspection and disposition, reconditioning, and distribution and sales.

## Reasons for Returns

In a survey, customers were asked why they returned their productsEighty-nine percent of online buyers say return policies influence their decision to shop with an e-retailer •The three leading products returned were clothing (27 percent), computer software (20 percent) and books (15 percent). Source: RLprofessional

## 2. 1 How does effective reverse logistics reduce costs or increase profits?

How reverse logistics increases profits for the organization is explained by Joseph & Daniel. According to their study the flow of product returns is becoming a significant concern for many manufacturers. In many cases the Cost efficient supply chains are not necessarily fast; and, as a result, returns undergo a lengthy delay until they are re–used, either as–is or remanufactured. The longer it takes to retrieve a returned product, the lower the likelihood of economically viable reuse options. Their research suggests that significant monetary values can be gained by redesigning the reverse supply chain to be faster and reduce costly time delays. These monetary values are higher in fast clock- speed industries such as consumer electronics, where the average life cycle of a personal computer (PC) is expressed in months, as opposed to a slow clock speed industry such as power tools, with life cycles of around six years. The research highlights the process of handling returns for ABC Company in USA with volumes over 100, 000 units of products such as PCs and computer peripherals are returned every month. The company estimates the annual total cost of product returns to be between 2 and 4 percent of total outbound sales, where the cost of product returns is defined as the value of the return plus all reverse logistics costs minus revenue recovered from the product. The study highlights that the flow of returned products represents a sizeable asset stream for many companies, but much of that asset value is lost in the reverse supply chain, For $1000 of product returns nearly half the asset value (> 45%) is lost in the return stream. Most of the loss in asset value falls into two categories: the returned product must be downgraded to a lower-valued product––a product once valued as new must be remanufactured, salvaged for parts, or simply scrapped as not repairable or obsolete; or, the value of the product decreases with time as it moves through the pipeline to its ultimate disposition. Of these two loss categories, much of the first is unavoidable because only a fraction of returns can be restocked as new items (20% in the example). However, the loss due to time delays represents a significant opportunity for asset recovery? These losses include not only the deterioration in value of a returned product with time, but also the force downgrading of product due to obsolescence. (Joseph & Daniel)20% new restock product ($190)Loss in Asset Value > 45% Value15% Scrap ($0)Flow of Returns($1000)10% Salvaged Components10%" Low Touch" Refurbished ($ 75)45% Repair &Remanufacture ($250)According to Joseph & Daniel the other main challenge while increasing profits or reducing losses is the effect of time delays and product downgrading on asset loss in a return stream. The upper line in the Figure below represents the declining value over time for a new product. The lower line indicates the declining value over time for a remanufactured version of the same product. In the example, only 20% of product returns would remain on the upper curve, losing value due to time delays; 80% of the returns would drop to lower values and the product that is ultimately scrapped would fall to values near zero. Products near the end of their life cycle will show sharp increases in the rate of value deterioration. Joseph & Daniel represented time value of returns in percentage terms to facilitate comparisons across products and product categories with different unit costs. The research carried out by them shows that the time value of returned products varies widely across industries and product categories. Time-sensitive, consumer electronics products such as PCs can lose value at rates in excess of 1% per week, and the rate increases as the product nears the end of its life cycle. They highlight the fact that, at these rates, returned products can lose up to 10-20% of their value simply due to time delays in the evaluation and disposition process.

## Value of Returned

## Product ($)

Product ReturnProcessing delay$ Cost of delayNew ProductReturn stockRemanufacturesValue after RemanufacturingT T TimeStart Shipping Begin ProductPhase outThe other factor mentioned by Joseph & Daniel in their study in order to minimize losses in the asset value is marginal value of time. Because products are broadly classified into functional and innovative, roughly corresponding to products with low and high marginal values of time respectively. Innovative, short life-cycle products such as laptop computers have a high marginal value of time, whereas products such as power tools or disposable cameras are said to be less time-sensitive and are considered have low marginal values of time. (Fisher’s strategic model)Therefore when products classified by time value, Joseph & Daniel consider using Fishers supply chain structure to maximize the value of recovered assets in the return stream. And since the objective is to maximize the net value of recovered assets, the cost of managing the reverse supply chain must also be considered. To use Fisher’s terminology, efficient supply chains sacrifice speed for cost efficiencies and, in a responsive chain, speed is usually achieved at higher cost. The study explains how reverse supply chain design is a tradeoff between speed and cost efficiency. For products with high marginal time values (such as laptop computers), the high cost of time delays tips the tradeoff toward a responsive chain. For products with low marginal time values, delays are less costly and cost efficiency is a more appropriate objective. They also suggest a supply chain design structure similar to the one Fisher proposes for forward supply chains; it is displayed as a two-dimensional matrix below. (Joseph & Daniel, RSC for comm. returns)Time-Based Reverse Supply Chain Design Strategy

## Efficient Chain Responsive Chain

MatchNo MatchNo MatchMatch

## Low MVT Product

## High MVT Product,

" Reverse Logistics is a process whereby companies can become more environmentally efficient through recycling, reusing and reducing the amount of materials used. Viewed narrowly, it can be thought of as the reverse distribution of materials among channel members. A more holistic view of Reverse Logistics includes the reduction of materials in the forward system in such a way that fewer materials flow back, reuse of materials is possible and recycling is facilitated". (Carter and Ellram, 1998,) The fact of reducing materials used in the processes according to some authors is (Rogers and Tibben-Lembke, 1998) considered as Green Logistics and not Reverse Logistics, although the same authors agree in that the bound line between both concepts is not always clear. On the other hand, Carter and Ellram seem to keep tight to the same channel in which the forward flow was generated, against the more broad view in which other companies outside the business chain could be favored from the returns flows. But at some point, preventing returns becomes more costly than it would be to handle them. Getting good at handling returns is the better option. It can lead to more sales because customers know they can return unwanted merchandise easily. It can also improve customer relationships across the supply chain, improve profits through reduced costs, and lead to greater efficiency and higher recovery rates for returns. Managing returns wisely means thinking about the returned goods not as costly mistakes but as products still waiting to be sold profitably-an opportunity to be exploited. (James Stock, Thomas Speh, and Herbert Shear, Many Happy Product Returns)

## 2. 2 How Reverse Logistic increases customer satisfaction?

Firstly to satisfy a customer Parasuraman identified the service quality gaps in satisfying the customer. Particularly relevant gaps in managing returns are the gap between customer expectations and customer perceptions of service quality, and the gap between customer expectations and managerial perceptions of those expectations. He further explains that the gaps in service quality lies in the retailers’ recent shift to more restrictive return policies and the customers’ perceptions of a business are based on past experiences, media promotions and word-of-mouth discussions. When the customer becomes aware of a more restrictive return policy, the policy shift could negatively inﬂuence their perceptions of service quality. Consequently, the changes in the policies are likely to widen the gap between customer expectations and their perceptions of the quality of the service. In addition, the more restrictive return policies could be due to managers’ lack of perception as to how their customers view return policies and how it inﬂuences their expectations, thus widening the gap between customer expectations and managers’ perceptions of those expectations. (A. Parasuraman, Valarie)

## Research Design

## 3. 1 Statement of the Problem

Many companies are not aware of the benefits on managing their returns, which could increase customer satisfaction. Companies have failed to understand the fact that for many products, a customer’s relationship with the product’s manufacturer does not end with product purchase. In fact, this relationship can be significantly influenced by the activities that occur during product returns, during the entire period of product ownership. After sales services through activities like customer support through training; product warranties; maintenance and repair; product upgrades; sales of complementary products; and product disposal will increase customer satisfaction and thereby increasing repeat purchases. Management of these service activities can form an important part of corporate strategy as well. A product that is returned for repair and maintenance represent important opportunities to create and strengthen customer loyalty and satisfaction. In general customer satisfaction can be increased by(a) Reducing the cycle time of customer receipt of the refund or exchange, and(b) Increasing the convenience of sending a return. A well-managed RL network cannot only provide important cost savings in procurement, recovery, disposal, inventory holding and transportation but also help in customer retention. Reverse logistics is often an overlooked process that can help companies Improve profit and reduce waste. Many a times reverse logistics activity has been neglected by managers and executives dealing with returns and is considered to be ugly and a costly process especially in India. Indian consumers to large extent are still price sensitive and to a little extent quality sensitive (quality for a given price) but not environment sensitive in its buying and promotion behavior. Reverse logistics activities are generally carried out by the unorganized sector for some recyclable materials such as paper and aluminum in India. (Srivastava & Srivastava)One of the factors that is contributing to this kind of thinking is the lack of government support, poor logistics infrastructure and poor supply chain efficiency and the Indian infrastructure comprising roads, railways, airports, seaports, ICT and energy production is poorer as compared to many other countries. And the fact that effectively managing the complex reverse logistics operations require considerable skill and integration which is lacking

## 3. 2 Need and importance of the Study

Sharma, Panda, and Sahu in their study pointed out that even though India is well endowed with both technology and human resources. The concept of Reverse logistics is yet not widely accepted because of lot many barriers for its successful implementation. Some of these barriers are lack of systems, management inattention, financial resources, personal resources, company policies. (S. K. Sharma, B. N. Panda, S. S. Mahapatra, and S. Sahu) Since reverse logistics activities are not that popular among Indian companies there is greater need to highlight its importance and the opportunities that it can generate in terms of profits and favorable customer experience. Reverse logistics can be used as strategic weaponCompanies today have started recognizing logistics capabilities as strategic. Gone are the days were the only strategic variables a firm was likely to emphasize were business functions, such as finance or marketing. For example: The case of McNeil laboratories division of Johnson & Johnson a few years ago. Secondly the goal of almost every business is to lock customers in so that they will not move to another supplier that is increase repeat purchases. An important service a Supplier can offer to its customers is the ability to take back unsold or defective merchandise quickly, and credit the customers in a timely manner. In order to make sure customer do not shift to another supplier companies make sure their customers are satisfied, which they consider is the most important asset. Part of satisfying customers involves taking back their unwanted products or products that the customers believe do not meet needs. So the competitive pressures have also made companies to take reverse logistics activities seriously. (Rogers and Tibben-Lembke)The study focuses on how reverse logistics can help retailers and wholesalers develop a strategic vision and it highlights the fact that if retailers and wholesalers do not have a strategic vision of reverse logistics today, it is likely that they will be in trouble tomorrow. High-return categories such as electronics can easily go out of business if they do not have a strong reverse logistics program. The two main areas the study focuses is, firstly on how reverse logistics can help a company distinguish itself from another firm by doing well for other people which would eventually be a result of good customer satisfaction and will show the company as Good corporate citizenship. Secondly the focus is on recapturing value and recovering assets which would increase the profits for the company. Firms that have begun asset recovery programs found that a surprisingly large portion of their bottom-line profits is derived from asset recovery programs. These programs add profit derived from materials that were previously discarded, which makes them essentially free. Since many companies have yet to recognize the strategic potential of efficient reverse logistics programs there is need to highlight its importance and the study aims to do so.

## 3. 3 Research Gap

Because the reverse logistics field is just in its infancy, there has not been a lot of academic research on this topic especially by Indian Authors. Practitioner related articles and process improvement guides have been at the forefront of informing firms how to be environmentally conscious, meet customer returns needs, and develop effective remanufacturing processes. Even though many manufacturer are working hard to roll out their Reverse Logistics programs to their worldwide operations not much of Indian operations are documented. These initiatives are often providing significant challenges in the Indian context. Many of the global regions including India are much less capable in key reverse logistics areas such as logistics and technology. The result is large increases in cycle time due to issues such as slower transport, a need to consolidate to reduce higher transportation costs, or slower end to end processing. Logistics costs are estimated to account for approximately 10. 7 percent of the U. S. economy. However, the exact amount of reverse logistics activity in India is difficult to determine because most companies do not know how large these are. Even though there some kind of a process that companies follow while managing returns it is not well structured and organized as in case of forward logistics. But money isn’t the only reason why companies should effectively manage their return supply chain. Companies sometimes fail to understand that they are only as good as the relationships they establish with their clients, and the management of customer returns is a significant contributor to the satisfaction of a company’s clientele. One frustrating experience with a poorly-handled reverse logistics process can result in the loss of a key client, which can significantly hurt a business’ bottom-line. The options that are available in Online-retail have also contributed to the increased awareness levels and highlighting the importance of reverse logistics. As more and more on-line vendors offer easy, no-fault returns, an ever-greater amount of merchandise ordered online will be sent back, potentially flooding a company’s reverse logistics supply chain. From the initial studies and through some of the visit to the companies I found out that there is a need for academics to gain a stronger and clearer understanding of the reverse logistics constructs, performance measures, and is some necessary levels of resource commitment required of logistics managers and top management within an organization. Customers are the driving force behind any firm especially in the online retail industry without the customer the organization has no purpose or need to exist. The customer is the driver of demand on the organization and this means that the firm must be able to adapt to the needs of the customer, especially if the organization wants to remain competitive. To do this, organizations need to be able to measure and quantify how they are performing and meeting their various customer’s needs. Developing and utilizing proper metrics for the information requirements needed to make sound decisions is essential. Very little research has been accomplished regarding the proper metrics and measures of reverse logistics performance. Also, research is lacking in determining what the key factors customers desire in a reverse logistics process. Determining what the customer thinks is important can be key to aligning your processes to meet that expectation, which may be different than what the organization initially planned. Therefore my research is aimed at studying thoroughly ways to satisfy the needs of the customer and measuring customer satisfaction. Other challenge factors include customs, inventory overstock of both defective and replacement items, and the need to understand or report to meet local regulatory requirements.

## 3. 3 Objectives of the Study

The objective of my research is to show that reverse logistics can enable organizations to, improve customer satisfaction and minimize liabilities and find hidden profits. And through my research prove that reverse logistics is a critical part of the supply chain that is worth developing. The main directions of research are determined bySearch of reasons and causal relations of Reverse logistics decisions making for customer satisfaction which can improve profits. Analysis what impacts Reverse logistics process decisions bring on the Retail and E-commerce Industry. What are the future challenges and opportunities for reverse logistics in India? To study the effect (1) Response Time, (2) return policy, (3) customer effort, and (4) Legal Disposal on customer satisfaction. To create awareness among the business world about Reverse logistics.

## 3. 4 Hypothesis/ Hypotheses

3. 41When a customer return products to the reseller, Diagnostic tests will determine what disposal action recovers the most value from the returned product. Products are remanufactured, Refurbished and serviced if deemed cost effective; some firms may simply treat all product returns as defective. Some returned products may be new and never used; these products are returned to the forward distribution channel. Products not reused, or remanufactured are sold for scrap or recycling, usually after physically destroying the product. End-of-life product returns are remanufactured or recycled depending on their condition and are sent back to the manufacturers and recycled products are used as raw materials. After remanufactured products are sent back to the manufacturers, some are sold in secondary markets for additional revenue, often to a marketing segment unwilling or unable to purchase a new product. Returns may also be used as spare parts for warranty claims to reduce the cost of providing these services for customers. The study is basically going to focus on how a company can make profits through remanufacturing, refurbishing and recycling a product that is returned by the consumer. The study is going to test whether reusing certain high value components from some products returned and remanufacturing or refurbishing a fraction of the return flow will increase profits or not and how the volume of products returned has an effect on the profits. The total profit of product take-back is the sum of the profit from remanufacturing plus the (Negative) profit from materials recycling minus the costs of reverse logisticsThe main focus is on how reverse logistics process is effective while managing returns and is the amount of money spent on managing this element justified. The hypothesis is based on studying the effects of efficient reverse logistics process and how it influences customer satisfaction. Many studies suggest that better reverse logistics would increase customer’s perception of firm’s service quality, which in turn would increase customer’s satisfaction to the firm. By carefully reviewing the literature, the following four factors that related to reverse logistics are believed to have relation with customer satisfaction and therefore are chosen to be studied in my thesis. These factors are: (1) Response Time, (2) return policy, (3) customer effort, and (4) Legal Disposal. These four factors are all considered contributing to the customer satisfaction. In the section below, these four factors will be reviewed thoroughly and the reason why they are relevant to customer satisfaction will be further explained. Response time is the time taken by the company to respond to a request by the customer to return a product. How quickly the company handles this process will have an impact on the minds of the customer. If the company has a standard operating procedure for reverse flow of goods it will clearly provide instructions to their customers clarifying queries like. How the product is to be shipped? Who pays for the shipping costs? Where to return the product? Therefore solving these queries will significantly reduce the response time. Return Policy: - With the advent of E-commerce and Online purchases many online retailers and manufacturers have a very flexible return policy. Liberal return policies are standard marketing practice at many firms. Customers are often allowed to return products for any reason, no questions asked. Retailers and manufacturers who clearly communicate their returns policy to their consumers provides a signal to consumers about the more intangible aspects of the product and service quality provided (Kirmani & Rao, 2000), this signal therefore could lead to the increase of customer loyalty and eventually increase customer satisfaction. (Padmanabhan & Png, 1995). Competition among companies has also made return policies more transparent and flexible and it is believed that a satisfied customer will grow to be a valuable asset to the company. Since many customers are not very comfortable buying online because of the risks associated with it they expect to receive a liberal return policy. Customer effort: Customer effort indicates the level of efforts that a customer must go through to physically return the product into reverse logistics process. Since, online shopping usually means more risks to take from the customer’s perspective, the chance that a customer is not satisfied with the product purchased online would be apparently higher than the product bought from a bricks-and-mortar store. If the customer received a product he/she does not satisfy with, the product will have a good chance to be returned and thus will be entering the return logistics flow. This study will focus on the type of effort and a certain level of preparation a customer must devote to get the product for return ready to be physically put into the retailer’s or manufacturer’s return system. It is expected that if more customer effort is needed to carry out the return process then it will lead to lower customer satisfaction with the retailer or the manufacturer. Legal Disposal: - Even though legal disposal of products is not greatly followed in India it an issues of much concern nowadays. As landfill fees increase, and options for disposal of hazardous material decrease, legally disposing of non-salvageable materials becomes more difficult. There would always be some percentage of product that would have reached their End-of-life or would be irreparable and these needs to be disposed legally and in way that would not harm the environment. So when a consumer returns such a product the ability of the company to dispose it in a safe way would have a positive effect in the behavior of the consumer and it will also make way to clean out customer inventories, so that those same customers can purchase more new products. These activities when taken care by the retailers and manufacturers will increase customer satisfaction. All these four factors mentioned above are believed to have an effect on customer satisfaction. H1: Reverse Logistics process can improve customer satisfaction

## 3. 5 Conceptual and Operational Definitions of Variables

Hypothesis 1 tests how Independent variables like (1) Response Time, (2) return policy, (3) customer effort, and (4) Legal Disposal will cause an effect in Customer satisfaction which is a dependent variable.

## 3. 5 Scope of the Study

This project intends to define the state of the art in reverse logistics, and to determine trends and best reverse logistics practices. Part of the research charter was to determine the extent of reverse logistics activity in the United States. Most of the literature examined in preparation for this research emphasized the " green" or environmental aspects of reverse logistics. In this project, green issues are discussed, but the primary focus is on economic and supply chain issues relating to reverse logistics. The objective was to determine current practices, examine those practices, and develop information surrounding trends in reverse logistics practices. To accomplish this task, the research team interviewed over 150 managers that have responsibility for reverse logistics visits were made to firms to examine, firsthand, reverse logistics processes. Also, a questionnaire was developed and mailed to 1, 200 reverse logistics managers. There were 147 undeliverable questionnaires. From among the 1, 053 that reached their destinations, 311 usable questionnaires were returned for a 29. 53 percent response rate. A copy of the questionnaire is included in Appendix A