

A STUDY ON PROBLEMS AND BENEFITS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN POWER SOAPS PVT.LTD, CHENNAI

Submitted in partial fulfilment of the requirements for the award of

MASTER OF BUSINESS ADMINISTRATION

by

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SCHOOL OF MANAGEMENT STUDIES

SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

**Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE
JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600 119**

MAY 2023



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **ASHIKA SAJEEVAN 41410038** who carried out the project entitled "A STUDY ON PROBLEMS AND BENEFITS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN POWER SOAPS PVT.LTD,CHENNAI" under my supervision from February 2023 to April 2023.

Mr. Robin Brahma,

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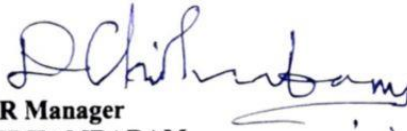
09.04.2023

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This is to certify that **Ms. ASHIKA SAJEEVAN**, Reg. No. 41410038, II year MBA student of **Sathyabama Institute of Science and Technology, Chennai** has undergone **PROJECT WORK** in the title of "**A Study on Problems and Benefits in Green Supply Chain Management Practices in Power Soaps Pvt. Ltd, Chennai**" from **09.02.2023 TO 09.04.2023**.

Thanking You,

For **Power Soaps (P) Limited**,


HR Manager
D.CHIDHAMBARAM

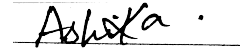


DECLARATION

I **ASHIKA SAJEEVAN (41410038)** hereby declare that the Project Report entitled “**A STUDY ON PROBLEMS AND BENEFITS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN POWER SOAPS PVT.LTD, CHENNAI**” done by me under the guidance of MrRobin Brahma is submitted in partial fulfilment of the requirements for the award of Master ofBusiness Administration degree.

DATE: 05/05/2023

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A handwritten signature in black ink, reading 'Ashika', followed by a period and a horizontal line.

ASHIKA SAJEEVAN

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ASHIKA SAJEEVAN

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ABSTRACT

'Green supply chain management' (GSCM) refers to the concept of integrating sustainable environmental processes into the traditional supply chain. This can include processes such as product design, material sourcing and selection, manufacturing and production, operation and end-of-life management. The biggest impediment to environmentally-conscious supply chains is poor vendor visibility. Given the modern supply chain, this is understandable. The benefits are reduced environmental impact, there is a common misconception that reducing the environmental impact of a business comes at a cost, Protecting against reputational damage. The objective of the study is to analyze the study on problems and benefits of green supply chain management practices in Power Soaps Pvt. Ltd, Chennai. The study is based only on the opinion expectations of employee total number of a samples taken for the study is 150 respondents. Descriptive research design and Convenience sampling techniques were used for the study. Primary data and secondary data have been used in the study. Simple percentage analysis, chi square analysis and correlation analysis have been applied in this study to reach the finding of the study. It is found that there is positive relationship between the gender of the respondent and the benefits in implementing green supply chain management practices and 53.3% majority of the respondents said that strongly agree towards lack of appropriate technology needed to implement. It is suggested that there must be appropriate technology to implement green supply chain management practices in the company. It is concluded that Supply chain management can improve financial performance; lead to satisfied customers; reduce delivery times; and build trust, confidence and commitment among suppliers

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CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION OF THE STUDY

Supply Chain Management can be defined as the management of the flow of products and services, which begins at the origin of products and ends at the product's consumption. It also comprises the movement and storage of raw materials that are involved in work in progress, inventory and fully furnished goods.

Oliver and Webber (1982). "Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible.

Introduction to Green supply chain management

The term 'Green supply chain management' (GSCM) refers to the concept of integrating sustainable environmental processes into the traditional supply chain. This can include processes such as product design, material sourcing and selection, manufacturing and production, operation and end-of-life management.

GSCM is the process of incorporating environmental concerns into supply chain management including product design, material sourcing and selection, manufacturing, delivery of final products, and the management of product's end-of-life"

According to Handfield et al, Green Supply Chain Management is as, "Application of environmental management principles to the entire set of activities across the whole customer order cycle, including design, procurement, manufacturing and assembly, packaging, logistics, and distribution".

Lin et al. (2001) defines green supply chain management, "It is also connected to Environmentally Conscious Manufacturing (ECM) of which they viewed it as involving developing and putting into operation manufacturing processes that curtailing and getting rid of all forms of waste, improve material utilization efficiency and improving operational safety as well as reducing energy consumption across the supply chain".

ELEMENTS OF GSCM

A. Green Procurement

Green procurement is defined as environmental purchasing consisting of involvement in activities that include the reduction, reuse and recycling of materials in the process of purchasing. Besides green procurement is a solution for environmentally concerned and economically conservative businesses, and a concept of acquiring a selection of products and services that minimizes environmental impact in a multinational investigation identified key factors for green purchasing including providing design specifications to suppliers that include environmental requirements for purchased items, cooperation with suppliers for environmental objectives, environmental audits for supplier's internal management, and suppliers' ISO14001 certification.

B. Green Design

Green design has been used extensively in the literature to denote designing products with certain environmental considerations. It systematically considers design issues associated with environmental safety and health over the full product life cycle during new production and process development. Its scope encompasses many disciplines, including environmental risk management, product safety, occupational health and safety, pollution prevention, resource conservation and waste management. A common approach is to replace a potentially hazardous material or process by one that appears less problematic. This seemingly reasonable action can sometimes be undesirable if it results in the rapid depletion of a potentially scarce resource or increased extraction of other environmentally problematic materials.

C. Green Operations and Reverse Logistics

Green operations relate to all aspects related to product manufacture/remanufacture, usage, handling, logistics and waste management once the design has been finalized. Some of the key challenges of GSCM such as integrating remanufacturing with internal operations, understanding the effects of competition among remanufacturers, integrating product design, product take-back and supply chain incentives, integrating

remanufacturing and reverse logistics with supply chain design in this define reverse logistics as „the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal. Reverse logistics activities differ from those of traditional logistics. Reverse logistics networks have some generic characteristics related to the coordination requirement of two markets, supply uncertainty, returns disposition decisions, postponement and speculation. Green distribution consists of green packaging and green logistics. Packaging characteristics such as size, shape, and materials have an impact on distribution because of their effect on the transport characteristics of the product. Better packaging, along with rearranged loading patterns, can reduce materials usage, increase space utilization in the warehouse and in the trailer, and reduce the amount of handling required.

D. Green Manufacturing and Remanufacturing

Green manufacturing is defined as production processes which use inputs with relatively low environmental impacts, which are highly efficient, and which generate little or no waste or pollution. Green manufacturing can lead to lower raw material costs, production efficiency gains, reduced environmental and occupational safety expenses, and improved corporate image. Green manufacturing aims to reduce the ecological burden by using appropriate material and technologies, while remanufacturing refers to an industrial process in which worn-out products are restored to like-new condition. Remanufacturing is defined as recycling integrated manufacturing. Industries that apply remanufacturing typically include automobiles, electronics and tyres. Product recovery refers to the broad set of activities designed to reclaim value from a product at the end of its useful life.

E. Waste Management

Waste management can be said as the reduction of perilous waste which is generated as a by-product of the production process and operations and subsequently treated, arranged or disposed off. Waste reduction can be done at source or prevention

of pollution at every step of the organization's procedures. Waste management helps to prevent the formation of waste rather than managing it after it is generated. Effective waste management needs to focus on „preventing' pollution at the source in products as well as manufacturing processes rather than „removing' it after it has been created. Firms can control waste through efficient usage of water instead of having to wait until the waste has accumulated. In addition, disposal cost, especially for equipment has always been a compelling problem and has led to green consciousness. Firms need to ensure that they utilise whole life costing when procuring equipment, by taking disposal measure and costs into account.

F. Green Product Development

Consumer marketers are trying to stand out in a growing and diverse eco-committed marketplace. Given the long- term impact of climate change and global warming, the call for the production and consumption of green products becomes even more urgent and necessary. Green product (GP) development has become a key strategic consideration for many worldwide organisations, mainly due to environmental regulations and public awareness of environmentally conscious practices.

Benefits from GSCM adoption

1. Sustainability of Resource- GSCM helps in proper and effective utilization of available productive resources of organizations. Organizations will purchase "green" input resources for environmentally friendly production process to produce desired outputs.

2. Lowered Costs / Increased efficiency- Effective management of suppliers can reduce transaction and promotes recycling and reuse of raw materials. Also, the production of waste and hazardous substances can be cut, preventing corporations from being fined as a result of violating environmental regulations. Consequently, the relevant handling and operational cost involved can be further reduced and, in the mean time, the efficiency of using resources can be enhanced.

3. Product differentiation and competitive advantages - It helps the organization in

positioning its product differently in customer's minds. Besides attracting new profitable customers for organization, it gives a competitive edge over competitors in market place. It will strengthen the brand image and reputation in market place.

4. Adopting to Regulation and reducing Risk- Organizations adopting GSCM practices can reduce the chances of being prosecuted for anti-environmental and unethical practices.

5. Improved quality and products- organization will produce products which are technologically advanced and environment friendly. This will enhance the brand image and brand reputation in customer's mind.

Besides above, there are following advantages that can be generated by **GSCM:-**
Positive impact on financial performance.

Effective management of suppliers.

Dissemination of technology, advanced techniques, capital and knowledge among the chain partners.

Transparency of the supply chain.

Large investments and risks are shared among partners in the chain.

Increase of sales.

Find beneficial uses for waste.

Disadvantages of Green Supply Chain Management

Going green helps in protecting the natural system of the earth but for business, it means bearing extra prices

Expensive: purchasing wind power electricity or switching to solar power can be costly for your corporation and may incur a premium price.

Data risk: going completely paperless will directly risk your data Record Keeping. The system crash, theft of computers, viruses, and hacking of sensitive information can prove disastrous.

Increased product prices: using green materials in your facility or production process can lead to a higher cost that is passed to the customers or have to be borne by the company's expense.

Customer backlash: if consumers get aware of a company getting involved in greenwashing then it may harm its credibility. Greenwashing is the process by which the company can make a false claim of their product being environmentally friendly.

Motives for GSCM

Bansal and Roth distinguish three different types of motivations for ecological responsiveness: a legitimization, a competitiveness and an ecological responsibility motivation.

Legitimization

A company with a legitimisation motivation looks towards improving corporate environmental management only within established firm regulations, norms, values, or beliefs. They are motivated by longterm sustainability and survival of a firm. They want to have a license to operate and simultaneously avoid fines, decrease risk and achieve employee satisfaction. They do not focus on proactive efforts but on reactions to external constraints made to avoid sanctions. These firms are mainly concerned by what would occur if the firm does not meet the conditions. Hence, they are mainly driven by concerns about sanctions, fines and penalties, bad publicity, punitive damage, avoiding clean-ups, disconnected work force, and risks. Moreover, their goal is to meet standards rather than exceed them. As such, these firms adopt a more passive and imitative stance and will minimise risks by imitating successful competitors on these issues. In summary, these companies focus on compliance, taking risks and cost-benefit analyses with regards to the outcomes of non-compliance.

Competitiveness

According to the competitiveness motivation, having GSCM is both a need and an opportunity. Firms that focus on greening their inbound function and production will benefit from the fact that this leads towards overall supply chain environmental

improvements as well as economic performance and increased competitiveness. Green initiatives improving competitiveness might include energy and waste management, source reductions resulting in a higher output for the same inputs, eco-labelling and the development of eco-products. Moreover, consistent with the resource-based view, firms try to develop ecologically related resources and capabilities to build long-term profit potential such as improved reputation, process efficiencies and product reliability. Subsequently, these firms benefit from increased profits, larger market shares (due to possible differentiation) and lower costs. In summary, environmental initiatives are driven here by the ability to enhance a firm's financial performance.

Concern for the environment

Some firms pursue ecological initiatives because they have an innate concern for the environment. Ecological responsibility as a motivation focuses on improving employee morale and individual satisfaction. These firms act based on values and not on decision rules: they act out of a sense of obligation, responsibility, or philanthropy rather than out of self-interest. These firms, in which top management is responsible for the firms' environmental management leadership, idealise, rather than rationalise, the best course of action.

Challenges of Green Supply Chain Management

Mismanaged Implementation

Changing a supply chain management system takes financial investment, time, and human resources. If not implemented properly, there will be wasted labor, service redundancy, and missed deadlines that result in significant costs.

Complicated

Process of supply chain management involves numerous complexities as it involves several departments within the organization. It may lead to create confusion and hamper the normal functioning of business. Employees may feel hesitant and demotivated to accept this concept as it is new to them thereby giving rise to several other difficulties.

Lack of Reliability

Supply chain management lacks of reliability as it is completely dependent upon the mode of information exchange among several departments. If there is any instance of inaccurate information sharing by any of the department, then it will have adverse effects on performance of whole supply chain.

Marginal Impact

While going green is focused on reducing harm to the environment, the impact that any specific individual can have on the environment by going green is often negligible. The theory is that if everyone were to go green, it would have a significant and noticeable impact, but not everyone can be convinced to go green and many believe that doing so has no real impact outside of the economics. This makes going green a personal choice for many, which does not necessarily result in concrete economic or environmental benefits.

1.2 INDUSTRY PROFILE

Soap Industry

Soap is a salt of fatty acids in the form of a solid shape that is used as a surfactant for washing, bathing and cleansing. Soaps can be made from natural plant oils or acids derived from animal fat. They also have the ability to kill microorganisms such as any bacteria during the cleaning process. In addition, soap functions as a thickener in industrial settings, an element in the composition of lubricants, and as a precursor to catalysts.

The soap manufacturing industry is one of the oldest industries operating in the FMCG sector in India, and accounts for more than 50% of the consumer goods sector. The soap and detergent industry covers laundry and toilet soaps, and synthetic detergents in the form of liquid, powder, and bar. Bar soaps can be classified into three sections—premium, popular, and economic.

The Soap Industry in India is comprised of about 700 companies, which generate a combined annual revenue of approximately \$17 billion US dollars. Soaps are distributed to

all of India's major metropolitan cities, and an estimated 50 percent of the soaps that are produced in the country are sold in rural markets. The size of India's soap market is expected to grow at a moderate rate over the next few years.

The soap industry plays a key role in the economy of India. Though soaps were once products that were only used by the elite, today, the increase of disposable incomes throughout India has led to an increase demand for soaps. The soap products that are produced in India are not only distributed and used by residents of the country, but they are also distributed and sold to various regions throughout the world.

Around 50% of soaps produced are sold in rural markets. Increasing awareness of hygienic standards in rural areas is providing growth opportunities to several players. Manufacturers are introducing soaps in different sizes and ranges, targeting consumers from low-income groups. Currently, there are around 5 Mn retail outlets in India which sell soaps, out of which 3.75 Mn operate in rural areas.

Herbal soap is the fastest growing category in the soap market in India. Margo and Medimix dominate the herbal and medicinal soap segment. Government initiatives like Swachh Bharat Mission, which promotes health and hygiene, has led to the growth of the soap manufacturing industry. During FY 2017, the United Arab Emirates (UAE), Nepal, and the United States of America (U.S.A.) were the top three export destinations of soaps.

Size of India's Soap Industry

There are about 700 companies that act as key vendors in India's soap industry. Together, these companies have combined yearly revenue of an estimated \$17 billion US dollars. The key vendors in this market include Unilever, P&G and Dial, among others. The soap industry in India is highly concentrated. An estimated 50 companies hold approximately 90 percent of the shares of this market.

Market segment insights:

The soap market in India is segmented based on brands, (Lux, Dove, Pears, Santoor, etc.), category (beauty soaps, health soaps, and others), and players operating in the market (Hindustan Unilever, ITC, Wipro, and others). During FY 2017, the beauty soaps segment had a market share of ~50%, followed by the health soaps segment. Popular beauty soap

brands operating in the market are Lux, Dove, Pears, Santoor, and Vivel. During the same period, Lux was the leading soap brand with a market share of ~13.5%, followed by Santoor, Vivel, and other brands.

Bathing soaps with cooling agents and herbal ingredients are attracting more customers. People these days prefer herbal soaps because of their therapeutic value. Nearly 315 Mn users in rural areas will be connected to the internet by 2020. Increased internet penetration will help rural consumers to explore the market and avail offers online. Growing awareness about sanitation and increasing disposable income in rural India will be key drivers for the growth of the soap market.

Major Soap Manufacturing Companies

1. Colgate Palmolive (India) Ltd.
2. Godrej Consumer Products Ltd.
3. Hindustan Unilever Ltd.
4. ITC Ltd.
5. Jyothy Laboratories Ltd.
6. Wipro Ltd.
7. Cholayil Pvt. Ltd.
8. Karnataka Soaps and Detergents Ltd.
9. The Himalaya Drug Company
10. Reckitt Benckiser (India) Pvt. Ltd.

India Bathing Soap Market Overview, 2020-2025

Traditional bathing soap and bath product companies are striving to meet the need of these new types of consumers. Bathing soap retailers that are previously resided firmly in niche markets are rapidly moving to the forefront of the soap and bath products industry. Companies have been rolling out the products with cheap price value is attracting the largest consumer base especially the rural regions.

Bathing soap products is a prominent segment of countries' overall bathing products market. The market has been segmented in various ranges of soap types like premium, Standard, Herbal, Deo and Baby soaps. Due to this varied range of products the market

has been growing leaps and bounds and further expected to show healthy and positive growth with an Expected CAGR of above 7% in the coming years. In the last couple of years bathing soap, the market has got a boost with the government of India's swachh Bharat mission. Every soap maker in the country has gained from the initiative and encroached on the category to capitalize on growth current market scenario.

Brands like Dettol have actively participated in the initiative by making the rural peoples aware of their range of cheap products. The bathing soap products have their availability in pan India irrespective of urban or rural and have flexible pricing which ranges from as low as Rs 10/piece, Rs 11/piece - Rs 20/piece to more than Rs 100/piece.

Such reasons have played a huge role in increasing the adaption of products. Another reason for its adaption is that bathing soaps are distributed widely through the general retail stores as such products are easy to afford and have high availability. Standard soap segment dominates the market as these soaps are of the lowest price range which values not more than Rs 20 - 24/piece Lifebuoy, santoor, lux, etc are some of the prominent brands in this category.

Whereas the market has the fastest growing product in the form of baby soaps such as Johnson & Johnson, Himalaya with a CAGR of over 18%. To attract more sets of consumers the companies have been manufacturing the soap products with a range of fragrances such as Lemon, sandal, glycerine, menthol, rose, lavender, etc.

Major Soap Companies

- ITC Limited - Vivel, Fiama Di Wills, Superia
- Hindustan Unilever Limited - Lux, Lifebuoy, Dove
- Godrej Consumer Products Limited (GCPL) - Cinthol, Godrej No.1
- Reckitt Benckiser (India) limited - Dettol
- Karnataka Soaps and Detergents Limited - Mysore Sandal

1.3 COMPANY PROFILE

Power Soaps Limited

Power Soaps is a household name in the detergent and bathing soap segment in South India. The brand stands proud as a triumph of entrepreneurial spirit, vision and a customer-centric business. Power Soaps are one of the leading manufacturers, exporters and suppliers of handmade soap engaged in manufacturing and export of Toilet soap, Luxury soaps, Beauty soap, Herbal and Scrub soap and Laundry soaps. Leveraging on its extensive industry experience of about more than forty years (established in 1970), we have developed our expertise in catering the customized demands of our customers. A trusted brand in home care and skin care products since 1970 The Power soaps have been bringing out the queenly feel in all women since 1970's. The brand Power soaps has been built on the philosophy of delivering trusted quality in home care and skin care products by introducing a number of varieties. Experience our lovely scented and rich lathering soaps for a refreshing and exfoliating shower.

Power Soaps Private Limited is a Private incorporated on 25 April 1997. It is classified as Non-govt company and is registered at Registrar of Companies, Chennai. Its authorized share capital is Rs. 75,000,000 and its paid up capital is Rs. 54,000,000. It is involved in Manufacture of other chemical products. Ensuring high quality in its range of soaps, it has been globally recognized by its patrons. Further, it has requisite technical and chemicals know how related with the products, which boost it to manufacture of safe and pure products. Further, its endeavours are directed towards meeting the growing demands of this industry and offering its clients with complete customer satisfaction.

A Dream Unfolds

Started in the 1970's, Power Soaps was established as the Gold Company and operated with a single unit at Kodai Road, Dindigul Dist, Tamilnadu. It was founded by Krishna Nadar, a visionary entrepreneur who believed that there existed a great demand for quality yet affordable detergent soaps. His sharp business acumen and astute strategies paved the way for the rapid growth of the brand. He built the business on the strong foundation of ethics and building enduring customer relationships.

Moving to The Next Level

After R Krishnan Nadar's regime, the mantle was taken over by his son K.Dhanapal who took it to newer heights and the company expanded. In 1998, detergent powder was introduced and this was an extremely successful venture too. Three more manufacturing units Power Soaps Limited at Puducherry, Abirami Chemicals Pondicherry and Praveen Chem Industry at Karaikal were added to meet the increasing demand for Power products.

MILESTONES

1970- A dream unfolds started in the 1970s.

1994- They renamed the brand name as "POWER".

1995 - The production touched 3,000 tonnes with a turnover of Rs.2 lakhs.

1996 - The Company expanded by building toilet soap plant of a capacity of 20,000 tonnes per annum, at cost total cost of Rs. 17.21 crore.

1997 - Power Soaps Private Limited is a Private incorporated on 25 April 1997

1998, detergent powder was introduced and this proved an extremely successful venture.

1999- Krishna Nadar Dhanapal appointed as Managing Director on 22 July 1999.

2000 - Detergent Plant started its function.

2001- Punitha Thangadurai appointed as Director on 22 July 1999.

2008 - Samuel Thomas Gnanadoss appointed as Director on 04 February 2008.

2009- Production capacity of soaps was increased to 26,000 tonnes per annum.

2010 – Various flavor of Nature Power bath soaps are introduced like papaya, lime, rose, sandal, herbal etc.

2010- The company secured ISO 14001 certificate.

2012 - Subalakshmi appointed as Director on 10 October 2012.

2013- Gio Power Diswash gel is introduced.

2015- Ultimate Power Liquid detergent is introduced.

2017- ICWAI National Award for Excellence in Cost Management.

BOARD OF DIRECTORS

Krishna Raja- Director

Punitha Thangadurai - Director

Subalakshmi - Director

Samuel Thomas Gnanadoss - Director

Krishna Nadar Dhanapal - Managing Director

The Growth Spurt

The consistent success of the company inspired it to diversify into various segments. It ventured into the personal care industry too, with hair care products like the Nature Power range of shampoos and skin care products like the Nature Power range of beauty soaps, Clora Toothpaste, Laa Talc and Laa Fair Fairness cream.

The company also diversified into the soft drink market with Powersoft Drinks Pvt Ltd., formerly Elanjikal Soft Drinks Chennai Pvt. Ltd., at Padappai, 14 kms from Tambaram in Tamil Nadu. The Mango Dice brand was manufactured here. Hello Water and Power Water mineral water brands were also introduced.

Taking on a New Identity

The next step was to consolidate all brands under one umbrella and this was done through creating the Power Soaps identity. This created a leap in brand value and image. Later, Power exited the soft drink and water business to sharpen the focus on detergents and personal care.

Powering Today's World

Power Soaps with its huge bouquet of detergent and personal care brands has a huge presence across South India and exports to countries like the Gulf. The quality products have been appreciated by customers making it a household name. The brands are backed by a strong manufacturing infrastructure with plants in Sembiapalayam. Gummudipoondi, Periyapalayan, Silvassa and Karaikal.

INFRASTRUCTURE

Power Soaps has always stayed at the forefront of technology, innovation and quality built on a backbone of a strong infrastructure. State-of-art technology and equipment are the norm at every plant. Quality processes and the Best Practices ensure that what reaches each customer is world class quality at an affordable cost.

It has its own manufacturing plants at Sembiapalayam. Gummudipoondi, Periyapalayan, Silvassa and Karaikal. This allows them to control the quality and maintain the consistency of products. Its plants are manned by dedicated and efficient technical personnel with domain expertise who keep operations moving smoothly.

PRODUCT PROFILE

BATH SOAP

Nature Power Beauty Soap

Nature Power Beauty Soap – Lime

Nature Power Beauty Soap - Rose

Nature Power Beauty Soap - Sandal

Nature Power Beauty Soap - Lavender

Nature Power Beauty Soap – Herbal

DETERGENT CAKE

Triple Power Detergent Cake – Blue

Active Power Detergent Cake - Blue

Active Power Detergent Cake – Yellow

HI POWER

Hi Power Detergent Cake – Blue

Hi Power Detergent Cake – Yellow

Hi Power Detergent Cake – Pink

3d Neam Metal

Active Power Breeze 1kg

Active Power Breeze 500g

Active Power DC 180 Pink
Active Power DC 180g Tellow
Active Power Detergent Cake
Blue Front Fabric Conditioner
Gio Dish Wash Bar
Gio Dish Wash Round
Gio Power DW Liquid 750ml

POWER JUMBO

Power Jumbo – Blue
Power Jumbo - Yellow
Power Jumbo - Pink

TYKO

Tyko Extra Detergent Cake – Blue
Tyko Detergent Cake - Yellow
Tyko Detergent Cake - Pink
Tyko Detergent Cake – Blue

DETERGENT POWDER

Triple Power Detergent Powder
Active Power Detergent Powder
Tyko Detergent Powder

DISH WASH BAR

Gio Dish Wash Bar

OTHER PRODUCTS

Papaya Aura
Laa Fair Fairness Cream
Laa Talc - Blossom

Laa Talc – Lavender

Laa Talc – Sandal

Nature Power Shampoo

Nature Power Black Shine Shampoo

Nature Power Jasmine Shampoo

1.4 STATEMENT OF THE PROBLEM

Along with the rapid change in global manufacturing scenario, environmental and social issues are becoming more important in managing any business. Green supply Chain Management (GSCM) is an approach to improve performance of the process and products according to the requirements of the environmental regulations. GSCM has emerged in the last few years and covers all phases of product's life cycle from design, production and distribution phases to the use of products by the end users and its disposal at the end of product's life cycle. GSCM is integrating environmental thinking into Supply Chain Management (SCM). Awareness level of customers of Green practices opted by organizations has got raised in entire industry. So organizations need to focus on the utilization of energy and resources for making environmentally sound supply chain. But there are problems in adopting and implementing Green Supply Chain Management practices in the companies. There is benefits if the organization successfully implements the Green Supply Chain Management beyond its problems. Hence the study focuses on problems and benefits in Green Supply Chain Management Practices in the company Power Soaps Pvt. Ltd, Chennai.

1.5 NEEDS OF THE STUDY

Increased global focus on sustainability and environmental responsibility.

Implementation of green supply chain practices can give companies a competitive advantage and attract customers who prioritize sustainability.

Cost savings can be achieved through the implementation of green supply chain practices.

Challenges such as resistance to change, higher costs, and limited availability of green

materials need to be understood and addressed.

Understanding the problems and benefits of implementing green supply chain practices in Power Soap Private Limited can help the company improve its sustainability and profitability.

1.6 SCOPE OF THE STUDY

The present study is conducted in Power Soaps Pvt. Ltd, Chennai. The sample of this study is 150. The study is confined to problems and benefits in green supply chain management practices in the company. The study is conducted with employees of the company. It helps to understand the problems in adopting and implementing the green supply chain management practices in the company. It throws light on the benefits of implementing in Green Supply Chain Management practices.

1.7 OBJECTIVES OF THE STUDY

Primary objective

To study on problems and benefits in implementation of green supply chain management in Power Soaps Pvt. Ltd, Chennai.

Secondary objectives

To study the level of awareness in green supply chain management practices

To understand the problems in implementing green supply chain management practices

To analyse the benefits in adopting green supply chain management practices

To get suggestions from the respondents to enhance the green supply chain practices in the company

CHAPTER 2

REVIEW OF LITERATURE

2.1 REVIEW OF LITERATURE

1. Maqsood S, Zhou Y, Lin X, Huang S, Jamil I, Shahzad K.(2022), This research evaluates the factors affecting the understanding of the CEO's and managers' intention to adopt practices of green supply chain management (GSCM) and clean innovation technology (CIT) in the manufacturing SMEs of Pakistan. This empirical research identifies key determinants influencing the adoption of GSCM practices. Using structural equation modeling (SEM), we selected a sample size of 350 different manufacturing firms in Pakistan. The results of the study revealed that six factors, namely, environmental, government, organization, suppliers, market, and operational factors, significantly influence the intention to adopt GSCM and positively impact sustainable production. The study's findings reveal that market and operational factors are highly significant for adopting GSCM practices at a p -value of 0.05. Environmental and organizational factors are equally significant to adopt GSCM practices at a p -value of 0.10. This research also analyzed CIT as a moderator between environmental, government, organization, customer, supplier, economic, market, and operational factors in the context of Pakistan. Maqsood S, Zhou Y, Lin X, Huang S, Jamil I, Shahzad K.(2022), Critical success factors for adopting green supply chain management and clean innovation technology in the small and medium-sized enterprises: A structural equation modeling approach. *Front Psychol.* 2022 Nov 3;13:1008982. doi: 10.3389/fpsyg.2022.1008982. PMID: 36405124; PMCID: PMC9670145.

2. Zhang N., Zhao Y. (2022). The adoption of GSCM and CIT has great importance for profit-generating activities, business developments, environmental impact, and the production of enterprises (Zhang and Zhao, 2022). In many enterprises, the practices of supply chain management and environmental management are intertwined *via* GSCM as long-term operations will increase the competitiveness of the enterprises. Since the use of the GSCM and CIT provides more advantages and influences friendly relationships with both suppliers and consumers internally and externally, the implementation of GSCM and CIT has a significant impact on enterprises' performances and product development. Green supply chain management contributes to corporate CIT and sustainable production

and increases the enterprise's efficiency (Li et al., [2020](#)). The adoption of GSCM and CIT boosts enterprise development, reduces environmental issues, and increases the level of production and consumption.

Zhang N., Zhao Y. (2022). Green supply chain management in the platform economy: a bibliometric analysis. *Int. J. Logist. Res. Appl.* 25, 639–655. 10.1080/13675567.2021.1885635

3. Mondal C., Giri B. C. (2022). explored the green closed-loop supply under the government subsidy for substitutable products and found that the government subsidy was beneficial for the development of the company. The adoption of GSCM practices, therefore, is beneficial for sustainable production and encourages the market to become more environment-friendly, attracts new workers to the company, and helps the organization establish new business opportunities in developed and developing countries. A review of the literature shows that the adoption of GSCM and CIT had a significant impact on many aspects of the organization such as human resources, management support, environmental friendliness, business enhancement, sustainable production, customer satisfaction, perceived relative advantage, and cost reduction. Hence, the adoption of GSCM practices and CIT has become a significant topic and of interest to academics in the context of SMEs, along with sustainable production, consumption, and environmental improvement.

Mondal C., Giri B. C. (2022). Investigating strategies of a green closed-loop supply chain for substitutable products under government subsidy. *J. Ind. Prod. Eng.* 39, 253–276. 10.1080/21681015.2021.1974962

4. Li X, Liu D, Zhang Z, Cheng T, Liu L, Yuan J.(2022) The purpose of this research is to examine internal and external Green Supply Chain Management (GSCM) activity on automobile performance: Environmental performance, operational performance, positive economic performance, and negative economic performance. Using survey data from foreign-owned company A with 117 manufacturing firms and domestic company B with 94 manufacturing firms, a significant relationship between GSCM and corporation performance has been found. For foreign-owned automobile companies, internal organizational activity has the greatest influence on operational performance, and promotes corporate value and corporation with outside. However, for domestic

automobile companies with the advanced green concept, Eco-design exerts the biggest effect on environmental performance, and also brought a negative economic impact on corporate performance. Moreover, although both corporate social responsibility (CSR) and creating shared value (CSV) promotion could influence the corporation with consumers and suppliers, CSV promotion has a more positive influence on cooperation with consumers than that CSR. These findings have important implications for designing GSCM strategic plans for the automotive industry in developing countries.

Li X, Liu D, Zhang Z, Cheng T, Liu L, Yuan J.(2022) The impact of internal and external green supply chain management activities on performance improvement: evidence from the automobile industry. *Heliyon*. 2022 Nov 11;8(11):e11486. doi: 10.1016/j.heliyon.2022.e11486. PMID: 36411930; PMCID: PMC9674876.

5. Ningxuan Wu, Ziyi Yu, Jincheng Wang (2022). This paper attempts to examine the basic conceptions of GHRM and GSCM and their possible inner connection. This study aims to review the development of GHRM and GSCM in their respective fields, as well as the development of theoretical and empirical research after the combination of them. The GSCM and GHRM were studied in isolation from each other in many years until the theoretical frameworks for their relevance were introduced. However, as a new research field, the empirical research under its theoretical framework is rather limited as there is little research in Chinese background. Thus, this study integrated and reviewed existing research on the relationship between GSCM and GHRM, summarized the gaps in the previous research and pave the way for the empirical research will be carried out in China. It concluded that while the positive impact of GHRM on organizational performance was proven, the GHRM was also demonstrated to be valuable to operation of enterprise. The value of combining the GHRM and GSCM (Jabbour and de Sousa Jabbour, 2016) is indisputable, the subsequent empirical studies also proven the correctness of this theory Ningxuan Wu, Ziyi Yu, Jincheng Wang (2022). Green Supply Chain Management (GSCM) and Green Human Resource Management (GHRM): A Literature Review and Future Research Direction. Proceedings of the 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022) .Advances in Economics, Business and Management Research, volume 648.

6. Alawamleh H.K, Khaled Hasan (2022). This study came with the aim of identifying the impact of the green supply chain on sustainability. This research targeted managers at the senior and middle levels of the Pharmaceutical Industry in Jordan, as they were formulating the company's strategies and determining its policies. A purposive sample consisting of 258 managers was selected. To gather the data needed for the analysis, a self-report questionnaire was used formulated electronically through Google Forms. AMOS software was used to examine the research hypotheses. The study concluded that there was an impact of the green supply chain with its dimensions (Eco-Design, Green Distribution, Green Purchasing, Green Manufacturing, and Green Reverse Logistics) on sustainability. Based on this result, the researcher recommends pharmaceutical companies in Jordan to take green initiatives and the trends towards implementing a green supply chain approach that reduces the consumption of non-renewable resources and waste, and to establish special laws and regulations in the company that oblige employees to apply the green approach in their practices within the work.

Alawamleh H.K, Khaled Hasan (2022). Uncertain Supply Chain Management The effect of green supply chain on sustainability: Evidence from the pharmaceutical industry. *Uncertain Supply Chain Management* 10(4).

7. Kholiaif, M.M.N.H.K., Ming, X. (2022). It examines the moderating effect of corporate social responsibility (CSR) (internal CSR and external CSR) on the association between fear-uncertainty towards COVID-19 and GSCM. In this study, we studied a sample of 300 manager-level employees in Egypt. We used partial least squares structural equation modeling (PLS-SEM) to analyze the data and test our hypotheses. Results showed that fear-uncertainty towards COVID-19 positively affect GSCM. Also, external CSR moderates the association among fear-uncertainty towards COVID-19 and GSCM. But it is not moderated by internal CSR. In addition, GSCM positively affects environmental and social performance. However, it has an insignificant effect on economic performance. Besides, GSCM has a significant mediation effect between fear-uncertainty towards COVID-19 and the firm's environmental and social performance. However, this mediation relationship regarding economic performance is insignificant. Finally, we discussed the

theoretical and practical implications at the end of this research.

Kholaif, M.M.N.H.K., Ming, X. (2022). COVID-19's fear-uncertainty effect on green supply chain management and sustainability performances: the moderate effect of corporate social responsibility. *Environ Sci Pollut Res*. <https://doi.org/10.1007/s11356-022-21304-9>

8. Huihua Huang (2022). At present, with the increasing seriousness of ecological pollution, people are gradually paying more attention to the protection of the ecological environment. In the past, people only paid attention to economic growth and neglected environmental protection. Now, environmental problems have restricted economic development, leading scholars at home and abroad to reflect on it deeply. Supply chain management, as the key to the sustainable development of the current enterprise economy, can realize the key consideration of environmental factors in the complete supply chain, reduce the negative impact of economic production activities on environmental protection, and can also make better use of resources to achieve elective assessment of the impact of economic-environmental performance in the supply chain process to ensure its healthy and orderly development. • is article makes an in-depth analysis of the use of a green supply chain in the impact of economic-environmental performance by using the method of a fuzzy comprehensive evaluation and provides a relatively complete calculation method. An example is given to analyze the IKEA company. • e results of the example analysis show that green supply chain management not only promotes economic growth in economic-environmental performance but also plays a continuous role in the improvement of the environment. we proportion of resource consumption in regions with a high level of economic development is also high. Driven by factors of green supply chain management, green economy can electively alleviate environmental pollution and further promote economic and green sustainable development.

Huihua Huang (2022). Green Supply Chain Management and Its Impact on Economic-Environmental Performance: Evidence from Asian Countries. *Hindawi Journal of Environmental and Public Health* Volume 2022, Article ID 7035260, 9 pages.

9. Dian Agustia, Maya Novitasari (2022). The purpose of this study is to examine the

effect of green supply chain management on firm performance with competitive advantage as a mediator. This study used purposive sampling to obtain a population comprising 516 companies which were part of a program called PROPER (which stands for Program Penilaian Peringkat Kinerja Perusahaan or company performance rating program) between 2010 and 2018. The data were obtained from the Indonesia Stock Exchange and OSIRIS software and were tested using STATA. The results obtained in this study demonstrate that green supply chain management has a positive effect on competitive advantage, competitive advantage has a positive effect on firm performance, and green supply chain management has no effect on firm performance. Competitive advantage is able to mediate the relationship between green supply chain management and firm performance. The results of this study provide insight into the importance of implementing green supply chain management in order to be able to create a competitive advantage and improve firm performance in the midst of intense competition.

Dian Agustia, Maya Novitasari (2022). Assessing the Impact of Green Supply Chain Management, Competitive Advantage and Firm Performance in PROPER Companies in Indonesia. *OPERATIONS AND SUPPLY CHAIN MANAGEMENT* Vol. 15, No. 3, 2022, pp. 395 – 406.

10. Tsaur, R.-C.; Sarkar, S.; Huang, S.-C , Chen, I.-F.; Kuo, P.-Y.(2022). Green supply chain management has become enormously significant over the last two decades. Traditional supply chain risk management is inept at dealing with the intangible criteria related to environmental issues. Contrary to most of the previous research, which emphasized risks in merely one or two phases of the green supply chain, this study provides a systematic checklist of the cradle-to-grave approach to risk identification and prioritization using a hybrid method. Based on a world-leading Taiwanese laptop manufacturer, we first identified the risk factors of the green supply chain with respect to the components and subcomponents of Risk Priority Numbers (RPN) on the Failure Mode and Effects Analysis (FMEA). Second, we used the Analytic Network Process (ANP) to derive the relative weights of the subcomponents of RPN. Third, we combined grey relational analysis and ANP weights to derive the relative importance of each risk criterion in each risk factor in the green supply chain. In this study, we have taken advantage of

the MCDM models to evaluate risk assessment using failure mode and effect analysis (FMEA), Analytical Network Process (ANP), and the Grey Relational Method (GRA) The empirical results verified that our proposed method can be applied to the laptop manufacturing industry and found industry-specific green risk criteria in each factor. Therefore, following this, enterprises can control the possible risks for continuous improvement in their green activities.

Tsaur, R.-C.; Sarkar, S.; Huang, S.-C , Chen, I.-F.; Kuo, P.-Y.(2022). Risk Analysis of Green Supply Chain Using a Hybrid Multi-Criteria Decision Model: Evidence from Laptop Manufacturer Industry. *Axioms*, 11, 668.

11. Ojo, L.D.; Adeniyi, O.; Ogundimu, O.E.; Alaba, O.O. (2022). The study of relationships in a leading business conglomerate in developing nations is rare. Therefore, this paper investigated relationships between GSCM practices and performance metrics in a leading manufacturing organisation in Africa by using a close-up study approach with data collected from 154 respondents. The data were analysed using multiple methods such as factor analysis to consolidate the measured variables; correlation, multiple regression analysis with stepwise estimation, and structural equation modelling (SEM) were used to examine the relationships between GSCM practices and performance. The results of these analyses revealed that environmental performance is significantly predicted by the measure of the organisation's commitment to GSCM vision, while financial performance is significantly impacted by eco-centric consumption and education. This study concludes that inhouse-drafted strategies based on the insight from the study will facilitate the optimisation of GSCM practices. It concluded that Manufacturing organisations have contributed to a poor living environment via unsustainable practices in the production process and the entire service delivery operation. More importantly, the health performance of manufacturing employees may also be affected by unsustainable production practices in the industry. Therefore, the green supply chain management (GSCM) practice has become a topical issue in recent decades due to its significant impact on the ecosystem at large. Via green practices, various performances have been achieved in organisations; meanwhile, the relationships between the practices and performance metrics in most developing countries are unclear,

although there have been supposed general submissions.

Ojo, L.D.; Adeniyi, O.; Ogundimu, O.E.; Alaba, O.O. (2022). Rethinking Green Supply Chain Management Practices Impact on Company Performance: A Close-Up Insight. *Sustainability*, 14, 13197.

12. Apirut Singtrangarn, Supot Rattanapun, Chanprapar Polachart (2022). The aim of this study is to examine the role of green supply chain management (GSCM) practices in sustainable performance of vocational colleges, Thailand. Three GSCM practices are considered; green purchasing, green packaging and green marketing. The relationship between green purchasing, green packaging, green marketing, environmental protection and sustainable performance is considered. As the population of the study is the vocational colleges of Thailand, therefore, data collection is made from these colleges. The questionnaires were distributed among the employees of these colleges. 235 responses are used for data analysis. Findings shows that; GSCM practices has pivotal role to enhance sustainable performance. Implementation of GSCM practices such as green purchasing, green packaging and green marketing has positive influence to promote sustainable performance of vocational colleges in Thailand. Green purchasing, green packaging and green marketing has positive effect on environmental protection which further causes to increase sustainable performance.

Apirut Singtrangarn, Supot Rattanapun, Chanprapar Polachart (2022). Green supply chain management practices: direct effects sustainability performance of vocational colleges in Thailand. *Journal of Positive School Psychology*. Vol. 6, No. 2, 3032 – 3044

13. Meng Q. F., Li M. W., Liu W. Y., Li Z., Zhang J. (2021). The main purpose of this study is to identify critical success factors for manufacturing SMEs in Pakistan to adopt GSCM and CIT. The results of this study will fill the gap to identify critical success factors that affect the intention of CEOs to adopt GSCM and CIT in their companies. Finally, this study also helps decision-makers to understand the adoption of the GSCM and support SMEs to implement CIT. The adoption of GSCM and CIT has been studied in many countries, but there is still a gap in the literature about its adoption in developing countries like Pakistan. In Pakistan, it is generally ignored, especially its impact, and research on

the relationship between GSCM and CIT is scarce. The existing literature focuses on specific dimensions such as supplier cooperation, green consumption, and environmental management in organizations. To the best of our knowledge, the adoption of GSCM and CIT for manufacturing SMEs in Pakistani is a new research topic, and this is the first study of its kind to examine the factors influencing the decisions on GSCM.

Meng Q. F., Li M. W., Liu W. Y., Li Z., Zhang J. (2021). Pricing policies of dual-channel green supply chain: considering government subsidies and consumers' dual preferences. *Sustain. Produc. Consum.* 26, 1021–1030. 10.1016/j.spc.2021.01.012

14. Darwish S., Shah S., Ahmed U. (2021). Green supply chain management (GSCM) practices are important for firms because they help in increasing profitability by reducing environmental and health risks, which are major customer concerns, and make a firm more sustainable and resilient (Shekarian et al., 2022). The firm can reduce the long-term cost and risk of its supply chain which can help to minimize its impact on the environment and public health. In addition, through the adoption of GSCM, organizations can shape the future of how businesses will be managed, reducing costs, and boosting sustainable products (Darwish et al., 2021). Green supply chain management is a relatively new concept. But in the present scenario, the health of the environment and its sustainability is a major concern for all enterprises. Businesses face two major challenges that are responsible for the lack of people's interest in GSCM. First, is the standardization of the practices, and second, is the lack of a self-regulatory environment (Rupa and Saif, 2022). Darwish S., Shah S., Ahmed U. (2021). The role of green supply chain management practices on environmental performance in the hydrocarbon industry of Bahrain: testing the moderation of green innovation. *Uncert. Supply Chain Manag.* 9, 265–276. 10.5267/j.uscm.2021.3.006

15. Zhang W., Zhang X., Zhou Q. (2021). This research aims to provide scientific answers to these questions to not only clarify scientifically how the adoption of GSCM practices increases organizations' production but also suggest policy measures that will help adopt GSCM practices in SMEs in Pakistan. Due to rapidly increasing globalization, GSCM and clean innovation technology (CIT) have greater importance and are

environmentally friendly for manufacturing SMEs (Tachizawa and Wong, [2015](#); Nayak, [2020](#); Zhang et al., [2021](#)). The adoption of GSCM and CIT practices has a substantial impact on the development of enterprises with benefits as well as lower energy costs. It also plays a key role in the development of sustainable production, green innovation, environmental sustainability, and the improvement of relationships between suppliers and customers (El Baz and Iddik, [2022](#); Liu et al., [2022](#)). The adoption of GSCM and CIT encourages sustainable production and consumption for manufacturing SMEs. Despite the increasing popularity of GSCM and CIT in many countries, some issues still need to be addressed. In addition, most studies have focused on large enterprises adopting the GSCM, but in our study, manufacturing SMEs were explored for adopting GSCM and CIT.

Zhang W., Zhang X., Zhou Q. (2021). How does knowledge seeking and knowledge generation promote green supply chain management? An empirical study from China. *Int. J. Logist. Res. Appl.* 10.1080/13675567.2021.1929882

16. Kishore Bhattacharjee (2020), Green Supply Chain Management can be defined as “integrating environment thinking into supply chain management, including product design, material sourcing and selection, manufacturing process, delivery of the final product to the consumers, and end-of-life management of the product after its useful life.” These days people are more concerned of the world’s environmental problems such as global warming, toxic substance usage, and decreasing in non-replenish resources. Growing attention is given to the development of environment management strategies for supply chains. The ‘Green’ concept is not the core part of the company’s core strategies as the path towards green supply chain has not yet been properly determined by them. So, in the current competitive scenario, the driver of Green Supply Chain Management assumes a significant importance and call for serious research attention. This paper focuses light on the necessity of ‘green’ and green concepts on business. The purpose is also to reveal the challenges and opportunities associated with the successful implementation of green concept in the supply chain of the companies

Kishore Bhattacharjee (2020) “Green Supply Chain Management- Challenges and Opportunities” *Asian Journal of Technology & Management Research*, Vol. 05 – Issue:

17. Sunil Luthra, DixitGarg, AbidHaleem (2020) The management of 'sustainable' issues in supply chain is attracting much attention from the academia and corporate world. Sustainability has turn out to be a major concern for organizations to integrate ecological and societal issues in their business strategy. Therefore, this paper explores the importance of Critical Success Factors (CSFs) to implement Green Supply Chain Management (GSCM) towards sustainability taking into account the automobile industry of India. This study examined impacts of CSFs to implement GSCM towards sustainability on current green practices implemented by Indian automobile industry. The findings point out that the 'Regulatory' CSF has been identified which plays the most important role in promoting the green practices. 'Internal Management' and 'Competitiveness' CSFs playing a crucial role towards achievement of expected performance outcomes.

Sunil Luthra, DixitGarg, AbidHaleem (2016) "The impacts of critical success factors for implementing green supply chain management towards sustainability: an empirical investigation of Indian automobile industry" Journal of Cleaner Production Volume 121, Pages 142-158.

18. K. Mathiyazhagan, A. Noorul Haq, Varun Baxi (2019), Industries are facing pressure to reduce pollution and become more eco-friendly due to increasing environmental awareness among customers and due to government regulations. Because of these reasons, industries are now adopting eco-friendly concepts to reduce pollution in the entire manufacturing process. The green supply chain management (GSCM) concept is a methodology to achieve a pollution free environment from procurement to after sales of products. This paper identifies the foremost barriers to implementing GSCM, ranked on the basis of significant factors in the Indian plastic processing industry. Thirty-eight barriers were identified from the available literature and through consultation with industry experts and academicians. They were statistically analysed on the basis of opinions from experts, using statistical tools like T-test, expectation values and analysis of variance (ANOVA).

K. Mathiyazhagan, A. Noorul Haq, Varun Baxi (2019) "Analysing the barriers for the

adoption of green supply chain management - the Indian plastic industry perspective” International Journal of Business Performance and Supply Chain Modelling Vol. 8, No. 1, pp 46-65.

19. HelenWalker, LucioDi Sisto, Darian McBain (2018) This study explores the factors that drive or hinder organisations to implement green supply chain management initiatives. A literature review identifies the main categories of internal and external drivers of green supply chain management practices, including organisational factors, regulation, customers, competitors and society, but there is little indication of suppliers as drivers for green supply chain management. Internal barriers include cost and lack of legitimacy, whereas external barriers include regulation, poor supplier commitment and industry specific barriers. An explorative study is conducted based on interviews from seven different private and public sector organisations. Organisations seem to be more influenced by external rather than internal drivers. The barriers to environmental supply chain management experienced by organisations tend to be both internal and external. HelenWalker, LucioDi Sisto, Darian McBain (2018) “Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors” Volume 14, Issue 1, Pages 69-85.

20. Raut, R, Narkhede B.E, Gardas, B.B, and Luong, H.T, (2018), The purpose of this paper is to identify and model critical barriers to sustainable practices implementation in Indian oil and gas sectors by the interpretive structural modeling (ISM) approach. In this paper, through exhaustive literature survey and experts opinions, 14 critical barriers were identified. After analyzing, it was found that six barriers. These barriers need the maximum attention and organizations need to overcome these hindrances for the effective implementation of sustainable practices. The research implications of the developed model are to help managers of the organization in understanding significance of the barriers, to prioritize or eliminate the same for the practical implementation of sustainability.

Raut, R, Narkhede B.E, Gardas, B.B, and Luong, H.T, (2018) "An ISM approach for the barrier analysis in implementing sustainable practices: The Indian oil and gas sector" An

21. Sunil Luthra, Vinod Kumar, Sanjay Kumar, Abid Haleem (2017), Green Supply Chain Management (GSCM) has received growing attention in the last few years. Most of the automobile industries are setting up their own manufacturing plants in competitive Indian market. We have identified various barriers and contextual relationships among the identified barriers. Classification of barriers has been carried out based upon dependence and driving power with the help of MICMAC analysis. Eleven numbers of relevant barriers have been identified from literature and subsequent discussions with experts from academia and industry. Clear understanding of these barriers will help organizations to prioritize better and manage their resources in an efficient and effective way. Through this paper we contribute to identify the barriers to implement GSCM in Indian automobile industry and to prioritize them.

Sunil Luthra, Vinod Kumar, Sanjay Kumar, Abid Haleem (2017) "Barriers to implement green supply chain management in automobile industry using interpretive structural modelling technique-An Indian perspective" Journal of Industrial Engineering and Management Vol. 4, Iss. 2, pp. 231-257.

22. Sara Perotti, Guido J.L, Micheli, Enrico Cagno (2016), Over the last decade, logistics companies have experienced significant pressures towards the adoption of green practices. Meanwhile, the research community has started to show an increasing interest in the green supply chain management (GSCM) area. However, so far only a limited number of studies have focussed specifically on logistics activities and third party logistics providers (3PLs), and their motivations and barriers to the adoption of green supply chain practices (GSCP). This paper seeks to fill this gap by illustrating the results of a multiple case study research with data collected through face-to-face semi-structured interviews with senior representatives from 15 3PLs. The study revealed that the adoption of GSCP does not seem to be driven by competitive advantage solely based on sustainability; however, companies have started perceiving the need to become somehow 'green'. As for the barriers, high investments and difficulties in identifying and measuring costs/benefits appeared among the most relevant ones.

Sara Perotti, Guido J.L, Micheli, Enrico Cagno (2016) "Motivations and barriers to the adoption of green supply chain practices among 3PLs" International Journal of Logistics Systems and Management Vol. 20, No. 2, pp 179-198.

23. K.Mathiyazhagan, KannanGovindan, A.NoorulHaq, YongGeng (2015) , As customers are becoming more environmental conscious and governments are making stricter environmental regulations, the industries need to reduce the environmental impact of their supply chain. Indian auto component manufacturing industries especially SMEs (Small and Medium Enterprises) are focused to cleaner production by implementing Green Supply Chain Management (GSCM) in their industries. But they are struggling to implement GSCM concept. The present research analyzes the barriers for the implementation of GSCM concept which has been divided into two phases such as identification of barriers and qualitative analysis. The study has used three different research phases: identification of barriers from the literature, interviews with various department managers and a survey of auto component manufacturing industries. The identification phase led to the selection of twenty-six barriers based on literature and in consultation with industrial experts and academicians. The Interpretive Structural Modeling (ISM) qualitative analysis was used to understand the mutual influences amongst the twenty-six barriers by survey. However, in their GSCM implementation, especially for maintaining the environmental awareness, the supplier barrier is the dominant one. Finally the approach has been applied to ten auto components manufacturing industries in Tamilnadu, South India.

K.Mathiyazhagan, KannanGovindan, A.NoorulHaq, YongGeng (2015) "An ISM approach for the barrier analysis in implementing green supply chain management" Journal of Cleaner Production Volume 47, Pages 283-297.

24. Rakesh K. Mudgal, Ravi Shankar, Parvaiz Talib and Tilak Raj (2015), Owing to ever-increasing scarcity of natural resources and mounting concern in the market for 'green' products and processes, environmental issues are fast emerging as one of the most important subject of management's decisions in manufacturing organisations. Green business practices are not easy to adopt and implement, due to the presence of

many barriers. The purpose of this paper is to identify and analyse these barriers. A questionnaire based survey was conducted to rank these barriers. The results of this survey and Interpretive Structural Modelling (ISM) approach have been used to model and analyse key barriers and drive managerial insights.

Rakesh K. Mudgal, Ravi Shankar, Parvaiz Talib and Tilak Raj (20150) "Modelling the barriers of green supply chain practices: an Indian perspective" International Journal of Logistics Systems and Management Vol. 7, No. 1, pp 81-107.

25. KannanGovindan, Mathiyazhagan Kaliyana, Devika Kannan, A.N.Haq (2014), Manufacturing industries started adopting the green concept in their supply chain management recently to focus on environmental issues. But, industries still struggle to identify barriers hindering green supply chain management implementation. This work focuses on identifying barriers to the implementation of a green supply chain management (Green SCM) based on procurement effectiveness. A total of 47 barriers were identified, both through detailed literature and discussion with industrial experts and through a questionnaire-based survey from various industrial sectors. Essential barriers/priorities are identified through recourse to analytic hierarchy process. Finally, a sensitivity analysis investigates priority ranking stability.

KannanGovindan, Mathiyazhagan Kaliyana, Devika Kannan, A.N.Haq (2014) "Barriers analysis for green supply chain management implementation in Indian industries using analytic hierarchy process" International Journal of Production Economics Volume 147, Part B, Pages 555-568.

CHAPTER 3

RESEARCH METHODOLOGY

Research is important both in scientific and nonscientific fields. In our life new problems, events, phenomena and processes occur every day. Practically, implementable solutions and suggestions are required for tackling new problems that arise. Scientists have to undertake research on them and find their causes, solutions, explanations and applications. Precisely, research assists us to understand nature and natural phenomena.

3.1 RESEARCH DESIGN

The researches use descriptive research design in this study. It involves survey and fact findings enquire of different kinds. The major purposes of descriptive research are the state of affairs as it exists at present. In this study, descriptive research was used.

Descriptive Research Design

In Descriptive Research Design, the scholar explains/describes the situation or case in depth in their research materials. This type of research design is purely on a theoretical basis where the individual collects data, analyses, prepares and then presents it in an understandable manner.

3.2 SAMPLING DESIGN

Sampling technique

Sampling helps a lot in research. It is one of the most important factors which determines the accuracy of your research/survey result. This study uses Non-Probability Sampling technique. It does not rely on randomization. This technique is more reliant on the researcher's ability to select elements for a sample. Outcome of sampling might be biased and makes difficult for all the elements of population to be part of the sample equally.

Sampling tools

Convenience sampling is used as a sampling tool.

Sample design

Convenience sampling is used in this study. Simply said, a convenience sample design consists of those who are easiest to reach by the researcher.

Population

Here population is entire employees of in Power Soaps Pvt. Ltd, Chennai.

Sample size

In this study 150 samples are taken as a sample size.

Sample unit

The population members from whose measurements are taken during sampling are known as sample units. The sampling area for this study is Chennai.

3.3 SOURCES OF DATA COLLECTION

Source of data is the process of gathering, measuring, and analyzing accurate data from a variety of relevant sources to find answers to research problems, answer questions, evaluate outcomes, and forecast trends and probabilities. This study used both primary and secondary data.

Primary data:

Data that has been generated by the researcher himself/herself, surveys, interviews, experiments, specially designed for understanding and solving the research problem at hand. Primary sources can be described as those sources that are closest to the origin of the information. They contain raw information and thus, must be interpreted by researchers. In this study, primary data was collected by questionnaire.

Secondary data:

Secondary sources are closely related to primary sources and often interpret them. These sources are documents that relate to information that originated elsewhere. Secondary sources often use generalizations, analysis, interpretation, and synthesis of

primary sources. Examples of secondary sources include textbooks, articles, and reference books.

3.4 TOOLS USED FOR ANALYSIS

Statistical analysis is the process of collecting and analyzing data in order to discern patterns and trends. It is a method for removing bias from evaluating data by employing numerical analysis. This technique is useful for collecting the interpretations of research, developing statistical models, and planning surveys and studies. The following are the tools used by the researcher to interpret the data and to provide conclusion for the study.

Percentage analysis

It is the most commonly used method for analyzing the collected data, percentage refers to a statistical kind of ration. It is used for making comparison between two or more series of data. Percentage is used to describe relationship among the number of respondents and percentage can also be used to compare the relative terms, the distribution of two or more series of data.

$$\text{Percentage analysis} = \frac{\text{No. of respondents}}{\text{Total of respondents}} \times 100$$

Chi-square test

The Chi-square test is an important test amongst the several tests of significance developed by statisticians. Chi-square is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance. As a non-

parametric test, it can be used to determine if categorical data shows dependency or the two classifications are independent.

χ^2 is calculated as follows:

$$\chi^2 = \sum (O-E)^2/E$$

$$\text{Degrees of freedom} = (C-1) (R-1)$$

C - number of columns

R- number of rows

O - Observed frequency

E - Expected frequency

Correlation

Correlation analysis deals with the association between two or more variables. It does not tell anything about cause and effect relationship. Correlation is described or classified in several different ways. Three of the most important ways of classifying correlation are:

Positive and Negative

Simple, Multiple and Partial

Linear and Non-Linear

Karl Pearson's method is popularly known as Pearson's coefficient of correlation. It is denoted by the symbol 'r'.

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2)(n \sum y^2 - (\sum y)^2)}}$$

The value of the coefficient of correlation as obtained by the above formula shall always lie between +1 and -1. When $r = 1$, it means there is perfect positive correlation between variables. When $r = -1$, it means there is perfect negative correlation between variables. When $r = 0$, it means no relationship between variable

CHAPTER 4
DATA ANALYSIS AND INTERPRETATION

TABLE NO: 4.1

AGE OF THE RESPONDENTS

Age	No. of the respondents	Percent
20-30	65	43.3
30-40	21	14.0
40-50	31	20.7
Above 50	33	22.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 43.3% of the respondents are in the age group of 20-30 years, 14.0% of the respondents are in the age group of 30-40 years, 20.7% of the respondents are in the age group of 40-50 years and 22.0% of the respondents are in the age group of above 50years.

Thus the majority of the respondents are in the age group of 20-30 years.

CHART: 4.1

AGE OF THE RESPONDENTS

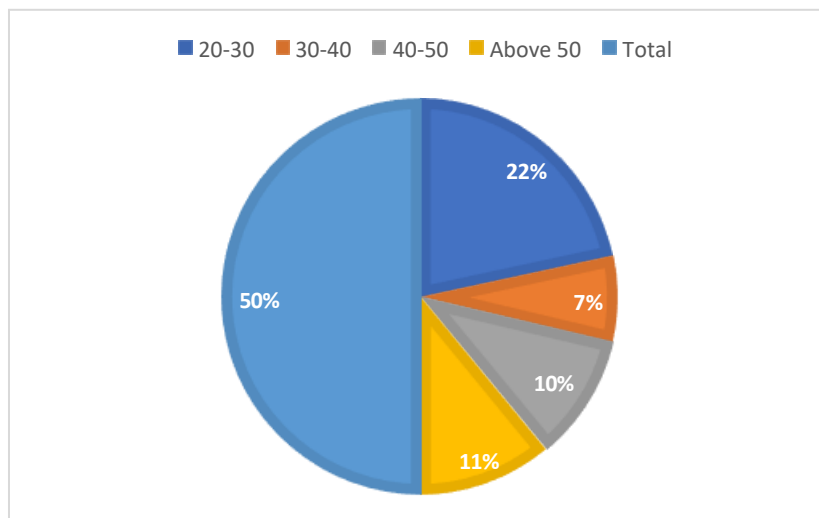


TABLE NO: 4.2

GENDER OF THE RESPONDENTS

Gender	No. of the respondents	Percent
Male	83	55.3
Female	67	44.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 55.3% of the respondents are male and 44.7% of the respondents are female.

Thus the majority of the respondents are male.

CHART: 4.2

GENDER OF THE RESPONDENTS

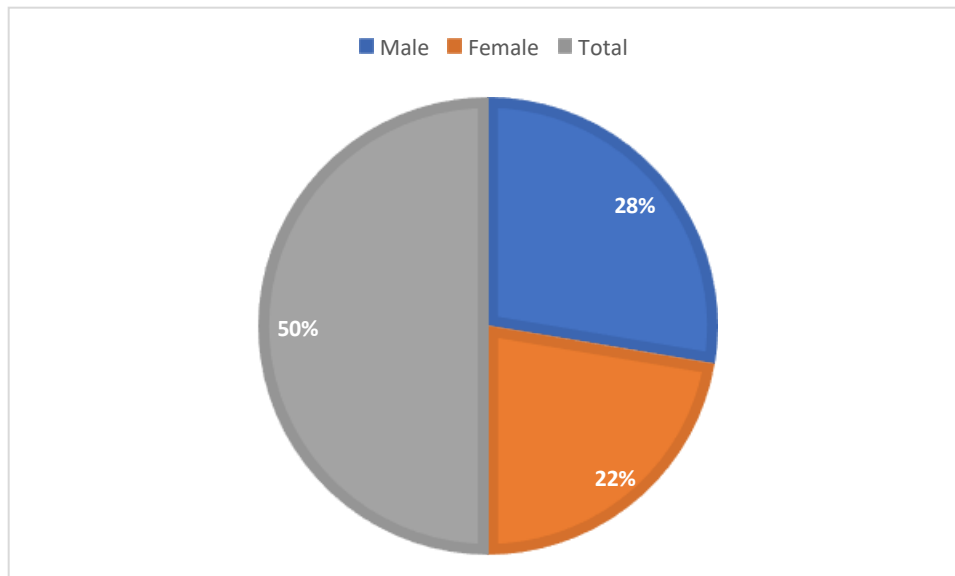


TABLE NO: 4.3

MARITAL STATUS OF THE RESPONDENT

Marital Status	No. of the respondents	Percent
Married	78	52.0
Unmarried	72	48.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 52.0% of the respondents are married and 48.0% of the respondents are unmarried.

Thus the majority of the respondents are married

CHART: 4.3

MARITAL STATUS OF THE RESPONDENT

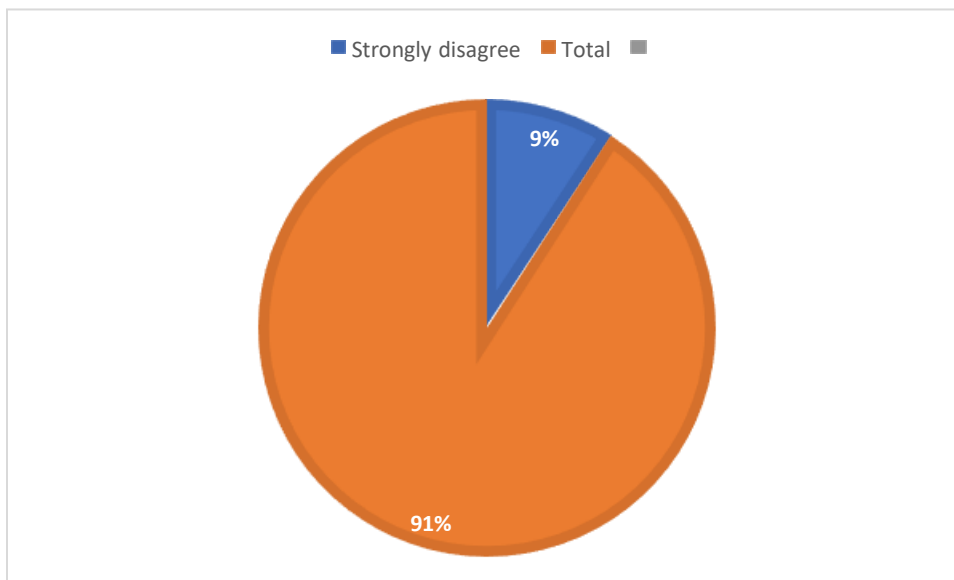


TABLE NO: 4.4

INCOME PER MONTH1 OF THE RESPONDENT

Income	No. of the respondents	Percent
Below Rs.20,000	52	34.7
Rs.20,000-40,000	38	25.3
Rs.40,000-60,000	40	26.7
Above Rs.60,000	20	13.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 34.7% of the respondents have below Rs.20,000, 25.3% of the respondents have Rs.20,000-40,000, 26.7% of the respondents have Rs.40,000-60,000 and 13.3% of the respondents have above Rs.60,000 as their income level.

Thus the majority of the respondents have below Rs.20, 000 as their income level.

CHART NO: 4.4

INCOME PER MONTH OF THE RESPONDENT

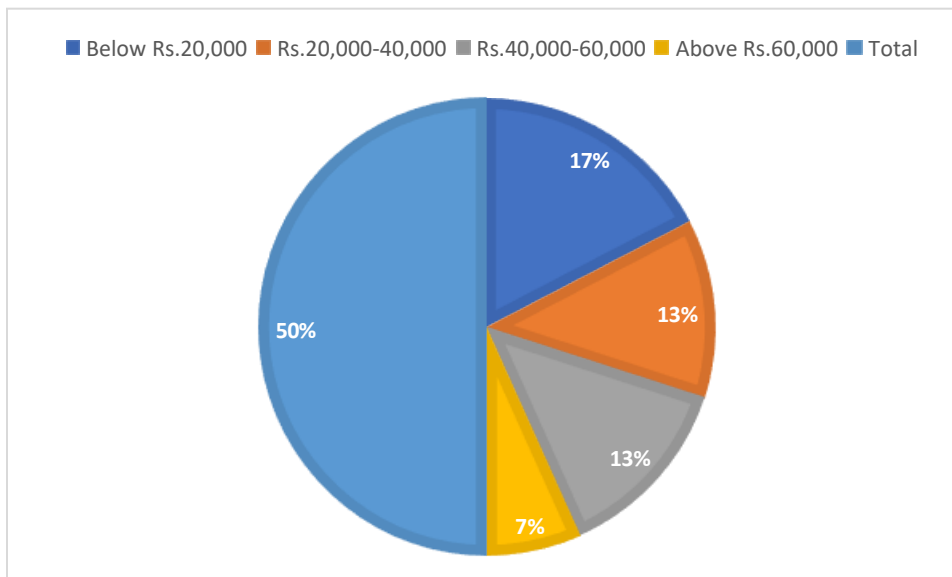


TABLE NO.4.5
NO. OF YEARS OF EXPERIENCE

Experience	No. of the respondents	Percent
Below 5	48	32.0
5-10	38	25.3
10-15	44	29.3
Above 15	20	13.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 32.0% of the respondents have below 5 years, 25.3% of the respondents have 5-10 years, 29.3% of the respondents have 10-15 years and 13.3% of the respondents have above 15 years experience.

Thus the majority of the respondents have below 5 years experience.

CHART NO: 4.5

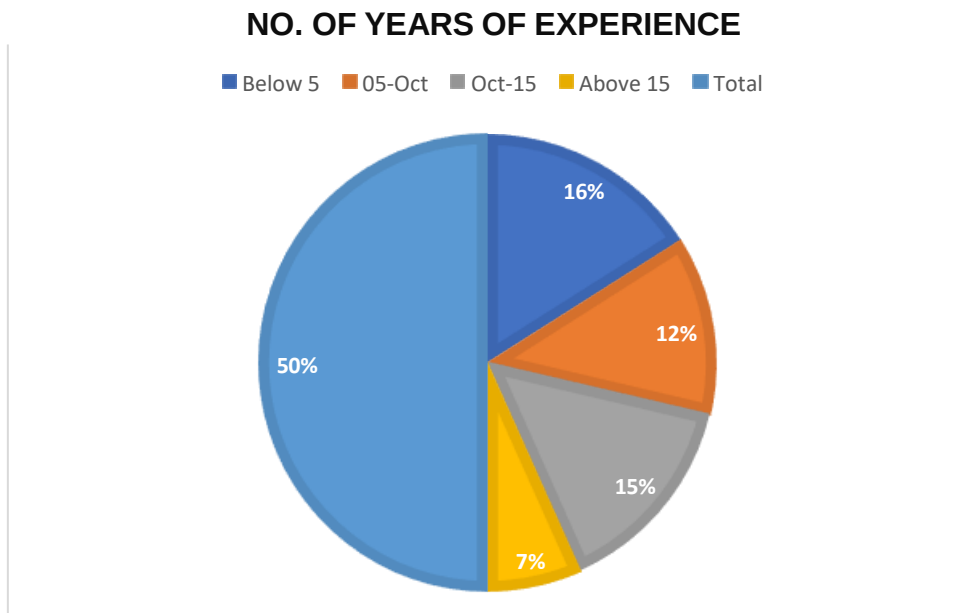


TABLE NO: 4.6

LEVEL OF AWARENESS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES

Particulars	No. of the respondents	Percent
Highly aware	62	41.3
Partly aware	53	35.3
No aware	35	23.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 41.3% of the respondents said that highly aware, 35.3% of the respondents said that partly aware and 23.3% of the respondents said that no aware towards level of awareness in green supply chain management practices.

Thus the majority of the respondents said that highly aware towards level of awareness in green supply chain management practices.

CHART NO: 4.6

LEVEL OF AWARENESS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES

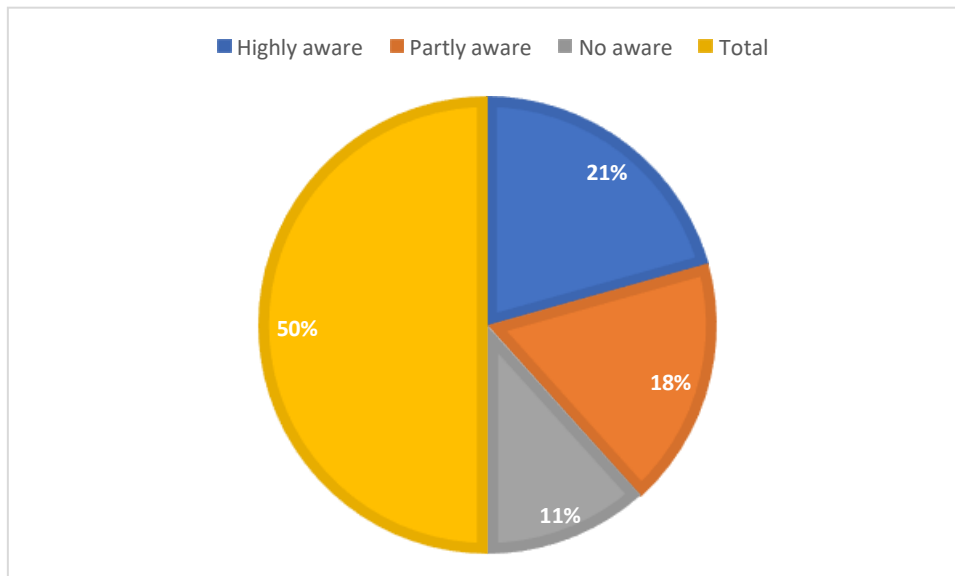


TABLE NO: 4.7

LACK OF CUS AWARENESS

Particulars	No. of the respondents	Percent
Strongly agree	46	30.7
Agree	49	32.7
Neutral	30	20.0
Disagree	12	8.0
Strongly disagree	13	8.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 30.7% of the respondents said that strongly agree, 32.7% of the respondents said that agree, 20.0% of the respondents said that neutral, 8.0% of the respondents said that disagree and 8.7% of the respondents said that strongly disagree towards lack of customers awareness.

Thus the majority of the respondents said that agree towards lack of customers awareness.

CHART NO: 4.7

LACK OF CUSTOMERS AWARENESS

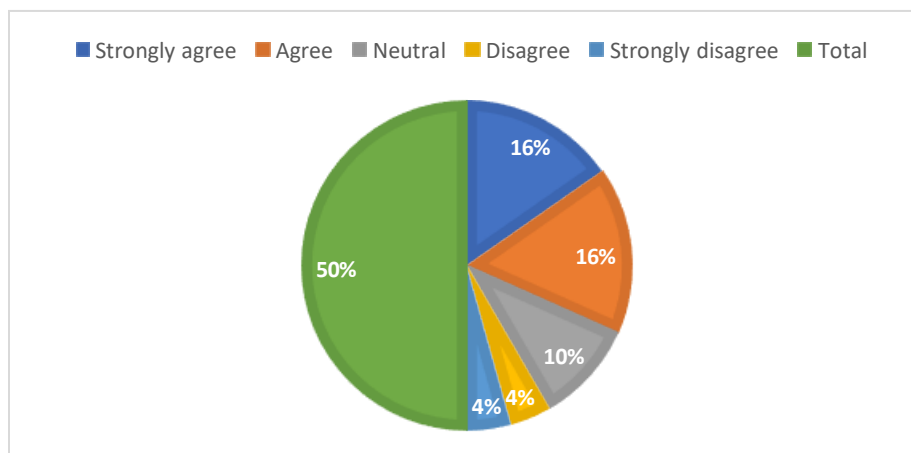


TABLE NO: 4.8

LACK OF APPROPRIATE TECHNOLOGY NEEDED TO IMPLEMENT

Particulars	No. of the respondents	Percent
Strongly agree	80	53.3
Agree	47	31.3
Neutral	16	10.7
Disagree	4	2.7
Strongly disagree	3	2.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 53.3% of the respondents said that strongly agree, 31.3% of the respondents said that agree, 10.7% of the respondents said that neutral, 2.7% of the respondents said that disagree and 2.0% of the respondents said that strongly disagree towards lack of appropriate technology needed to implement.

Thus the majority of the respondents said that strongly agree towards lack of appropriate technology needed to implement.

CHART NO: 4.8

LACK OF APPROPRIATE TECHNOLOGY NEEDED TO IMPLEMENT

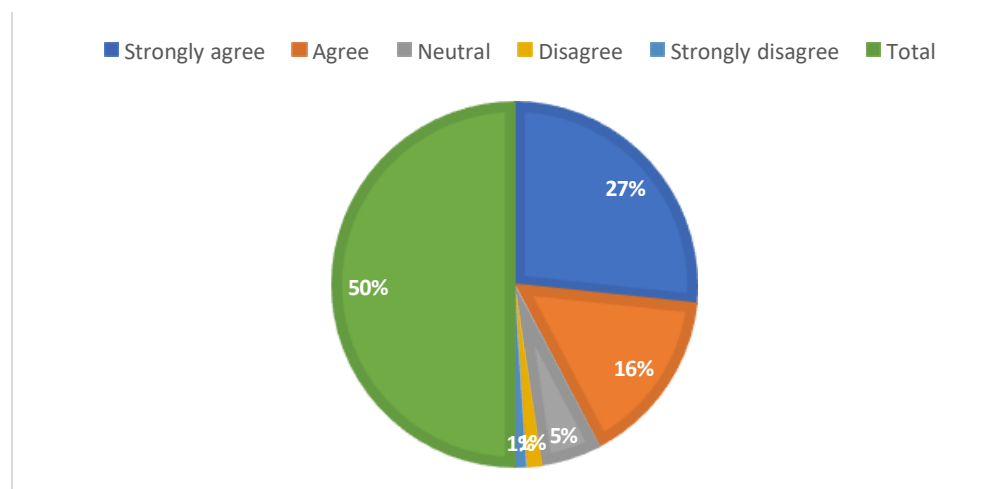


TABLE NO: 4.9

LACK OF KNOWLEDGE, EXPERIENCE TRAINING TO PERSONALS

Particulars	No. of the respondents	Percent
Strongly agree	16	10.7
Agree	75	50.0
Neutral	28	18.7
Disagree	16	10.7
Strongly disagree	15	10.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 10.7% of the respondents said that strongly agree, 50.0% of the respondents said that agree, 18.7% of the respondents said that neutral, 10.7% of the respondents said that disagree and 10.0% of the respondents said that strongly disagree towards lack of knowledge, experience training to personals.

Thus the majority of the respondents said that agree towards lack of knowledge, experience training to personals.

CHART NO: 4.9

LACK OF KNOWLEDGE, EXPERIENCE TRAINING TO PERSONALS

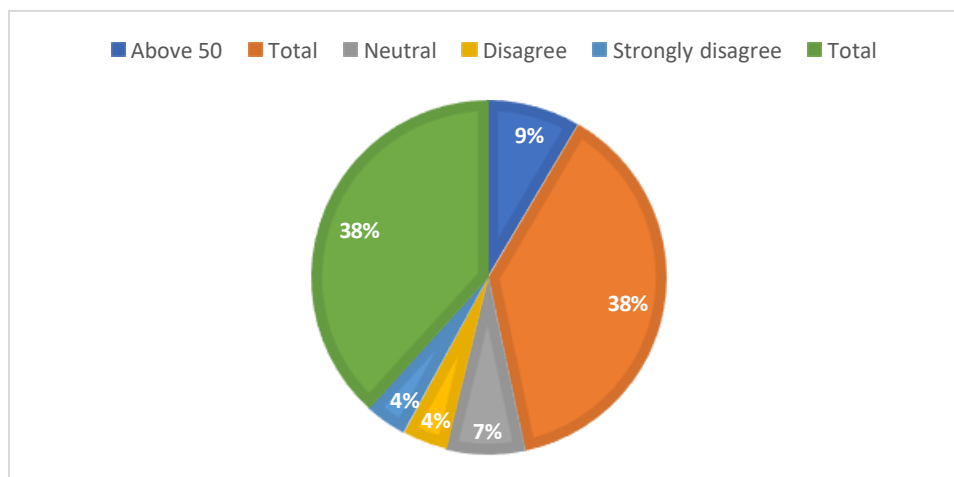


TABLE NO: 4.10

LACK OF LEVEL MANAGEMENT COMMITMENT IN ADOPTING GREEN SUPPLY CHAIN MANAGEMENT

Particulars	No. of the respondents	Percent
Strongly agree	44	29.3
Agree	36	24.0
Neutral	17	11.3
Disagree	38	25.3
Strongly disagree	15	10.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 29.3% of the respondents said that strongly agree, 24.0% of the respondents said that agree, 11.3% of the respondents said that neutral, 25.3% of the respondents said that disagree and 10.0% of the respondents said that strongly disagree towards lack of level management commitment in adopting green supply chain management.

Thus the majority of the respondents said that strongly agree towards lack of level management commitment in adopting green supply chain management.

CHART NO: 4.10

LACK OF LEVEL MANAGEMENT COMMITMENT IN ADOPTING GREEN SUPPLY CHAIN MANAGEMENT

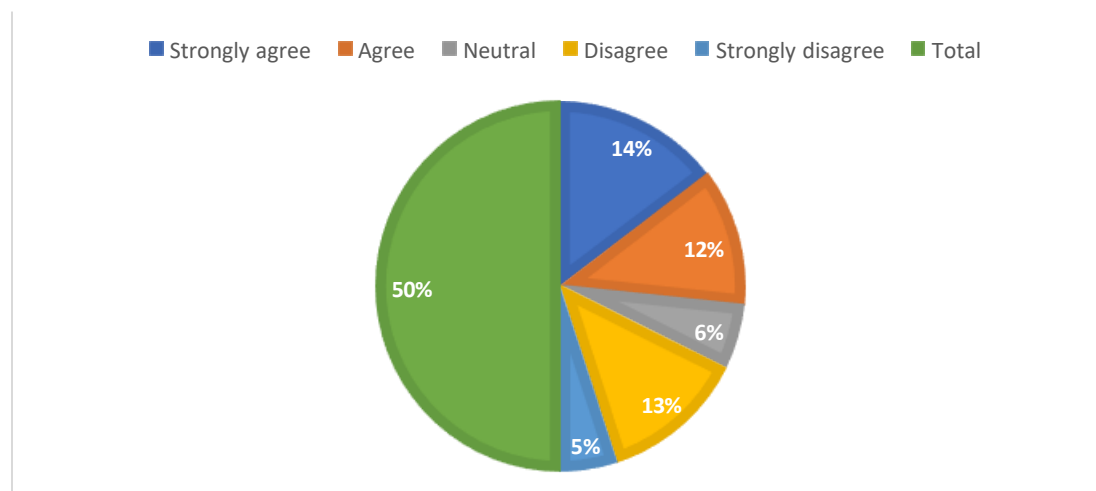


TABLE NO: 4.11

COST OF IMPLEMENTATION

Particulars	No. of the respondents	Percent
Strongly agree	61	40.7
Agree	38	25.3
Neutral	22	14.7
Disagree	20	13.3
Strongly disagree	9	6.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 40.7% of the respondents said that strongly agree, 25.3% of the respondents said that agree, 14.7% of the respondents said that neutral, 13.3% of the respondents said that disagree and 6.0% of the respondents said that strongly disagree towards cost of implementation.

Thus the majority of the respondents said that strongly agree towards cost of implementation.

CHART NO: 4.11
COST OF IMPLEMENTATION

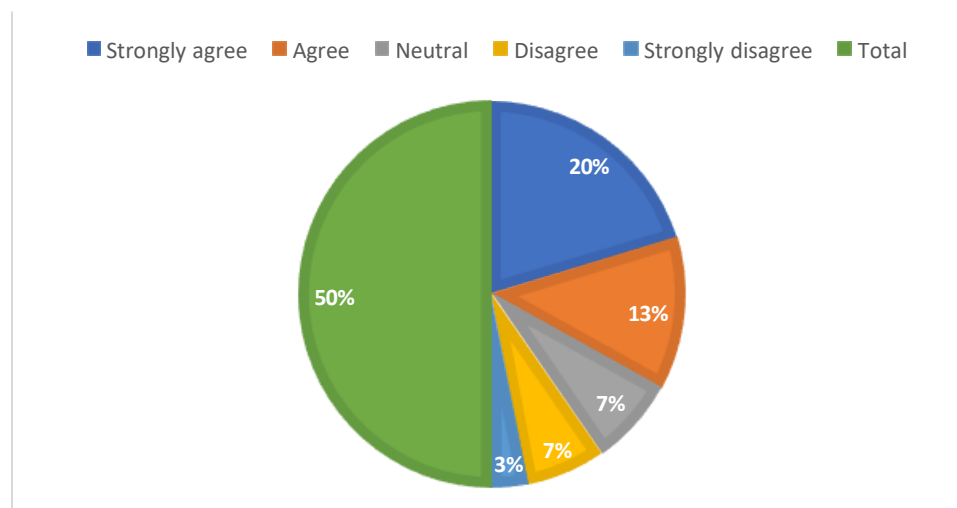


TABLE NO: 4.12

LACK OF GOVERNMENT SUPPORT TO ADOPT ENVIRONMENTAL FRIENDLY POLICES

Particulars	No. of the respondents	Percent
Strongly agree	67	44.7
Agree	51	34.0
Neutral	16	10.7
Disagree	3	2.0
Strongly disagree	13	8.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 44.7% of the respondents said that strongly agree, 34.0% of the respondents said that agree, 10.7% of the respondents said that neutral, 2.0% of the respondents said that disagree and 8.7% of the respondents said that strongly disagree towards lack of government support to adopt environmental friendly policies.

Thus the majority of the respondents said that strongly agree towards lack of government support to adopt environmental friendly policies.

CHART NO: 4.12

LACK OF GOVERNMENT SUPPORT TO ADOPT ENVIRONMENTAL FRIENDLY POLICES

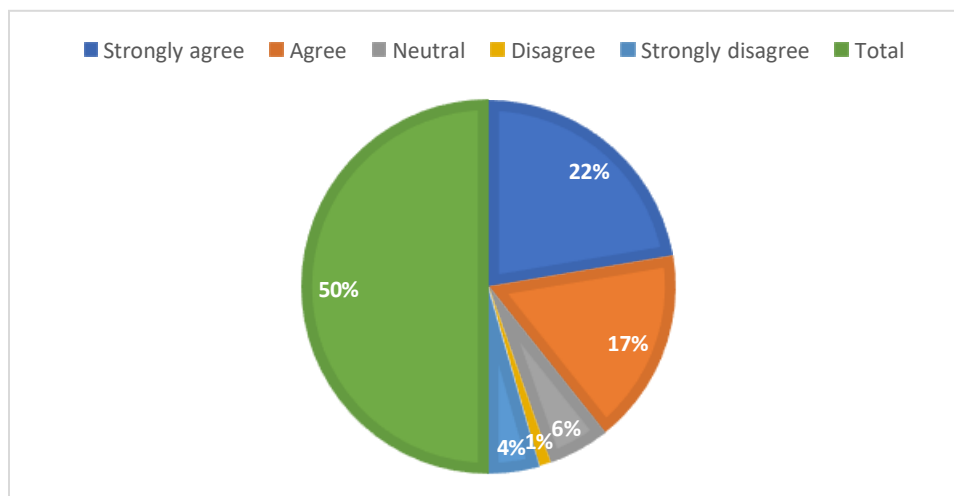


TABLE NO: 4.13

STRICT GOVERNMENT RULES AND REGULATIONS

Particulars	No. of the respondents	Percent
Strongly agree	26	17.3
Agree	61	40.7
Neutral	31	20.7
Disagree	12	8.0
Strongly disagree	20	13.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 17.3% of the respondents said that strongly agree, 40.7% of the respondents said that agree, 20.7% of the respondents said that neutral, 8.0% of the respondents said that disagree and 13.3% of the respondents said that strongly disagree towards strict government rules and regulations.

Thus the majority of the respondents said that agree towards strict government rules and regulations.

CHART NO: 4.13

STRICT GOVERNMENT RULES AND REGULATIONS

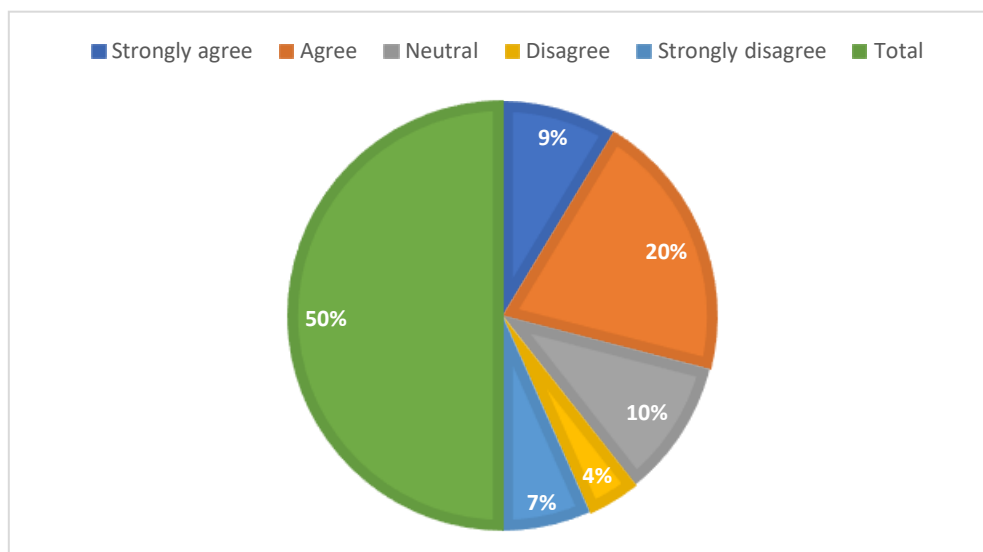


TABLE NO: 4.14

POPULAR QUALITY HAS SHOWN IMPROVEMENT

Particulars	No. of the respondents	Percent
Strongly agree	29	19.3
Agree	30	20.0
Neutral	58	38.7
Disagree	13	8.7
Strongly disagree	20	13.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 19.3% of the respondents said that strongly agree, 20.0% of the respondents said that agree, 38.7% of the respondents said that neutral, 8.7% of the respondents said that disagree and 13.3% of the respondents said that strongly disagree towards popular quality has shown improvement.

Thus the majority of the respondents said that neutral towards popular quality has shown improvement.

CHART NO: 4.14

POPULAR QUALITY HAS SHOWN IMPROVEMENT

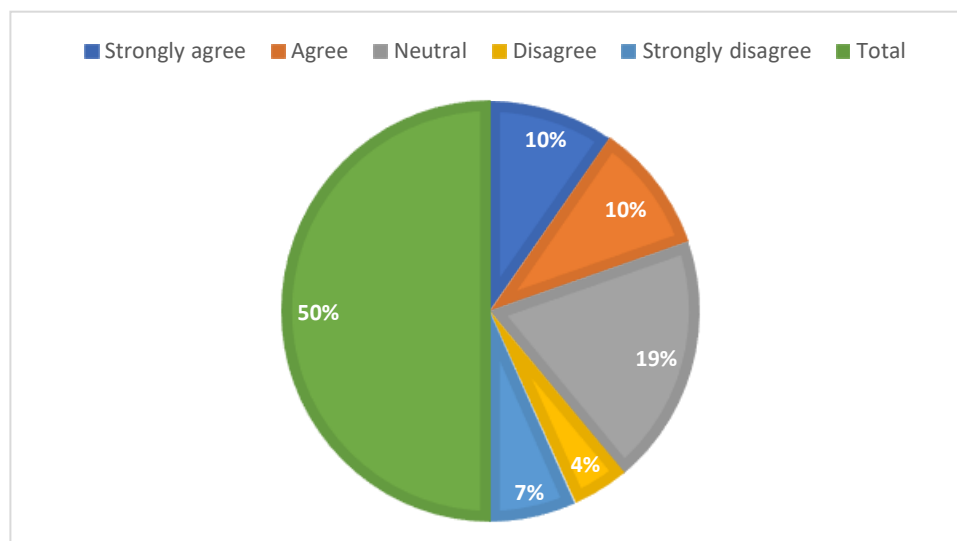


TABLE NO: 4.15

CUSTOMER SATISFACTION HAS INCREASED

Particulars	No. of the respondents	Percent
Strongly agree	27	18.0
Agree	62	41.3
Neutral	32	21.3
Disagree	20	13.3
Strongly disagree	9	6.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 18.0% of the respondents are strongly agree, 41.3% of the respondents are agree, 21.3% of the respondents are neutral, 13.3% of the respondents are disagree and 6.0% of the respondents are strongly disagree towards customer satisfaction has increased.

Thus the majority of the respondents are agree towards customer satisfaction has increased.

CHART NO: 4.15

CUSTOMER SATISFACTION HAS INCREASED

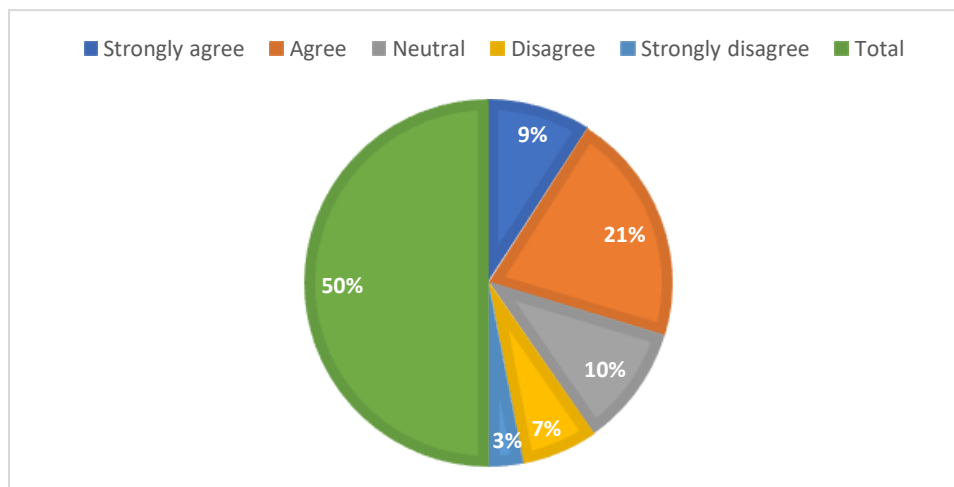


TABLE NO: 4.16

INCREASE IN DELIVERY RELIABILITY

Particulars	No. of the respondents	Percent
Strongly agree	29	19.3
Agree	52	34.7
Neutral	38	25.3
Disagree	15	10.0
Strongly disagree	16	10.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 19.3% of the respondents said that strongly agree, 34.7% of the respondents said that agree, 25.3% of the respondents said that neutral, 10.0% of the respondents said that disagree and 10.7% of the respondents said that strongly disagree towards increase in delivery reliability.

Thus the majority of the respondents said that agree towards increase in delivery reliability.

CHART NO: 4.16

INCREASE IN DELIVERY RELIABILITY

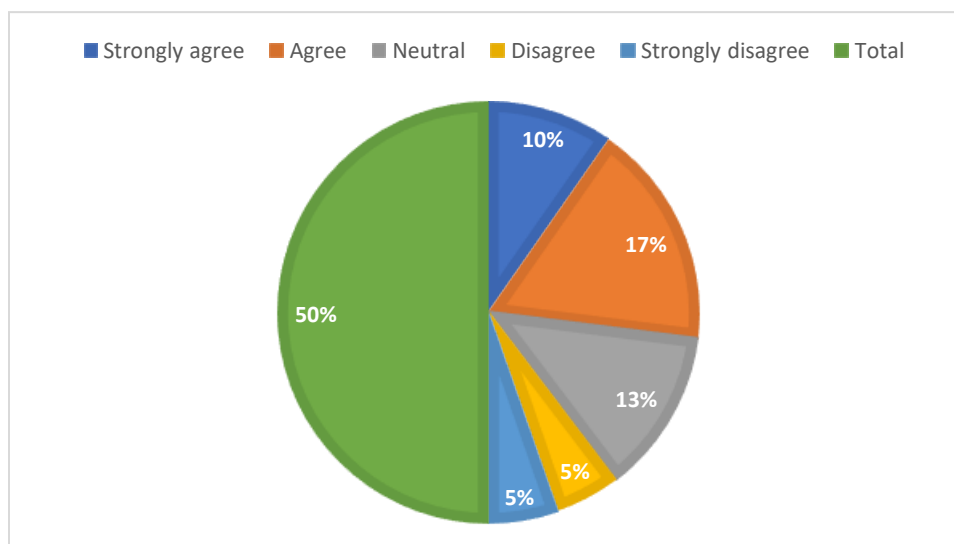


TABLE NO: 4.17

DECREASE IN SCRAP AND REWORK

Particulars	No. of the respondents	Percent
Strongly agree	26	17.3
Agree	42	28.0
Neutral	53	35.3
Disagree	22	14.7
Strongly disagree	7	4.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 17.3% of the respondents said that strongly agree, 28.0% of the respondents said that agree, 35.3% of the respondents said that neutral, 14.7% of the respondents said that disagree and 4.7% of the respondents said that strongly disagree towards decrease in scrap and rework.

Thus the majority of the respondents said that neutral towards decrease in scrap and rework.

CHART NO: 4.17

DECREASE IN SCRAP AND REWORK

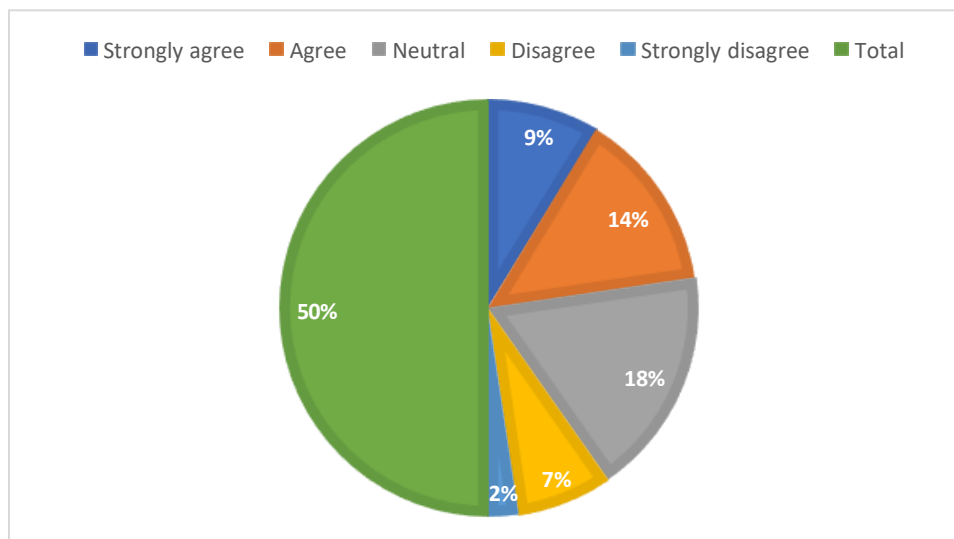


TABLE NO: 4.18

REDUCTION IN COST

Particulars	No. of the respondents	Percent
Strongly agree	64	42.7
Agree	41	27.3
Neutral	33	22.0
Disagree	8	5.3
Strongly disagree	4	2.7
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 42.7% of the respondents said that strongly agree, 27.3% of the respondents said that agree, 22.0% of the respondents said that neutral, 5.3% of the respondents said that disagree and 2.7% of the respondents said that strongly disagree towards reduction in cost.

Thus the majority of the respondents said that strongly agree towards reduction in cost.

CHART NO: 4.18

REDUCTION IN COST

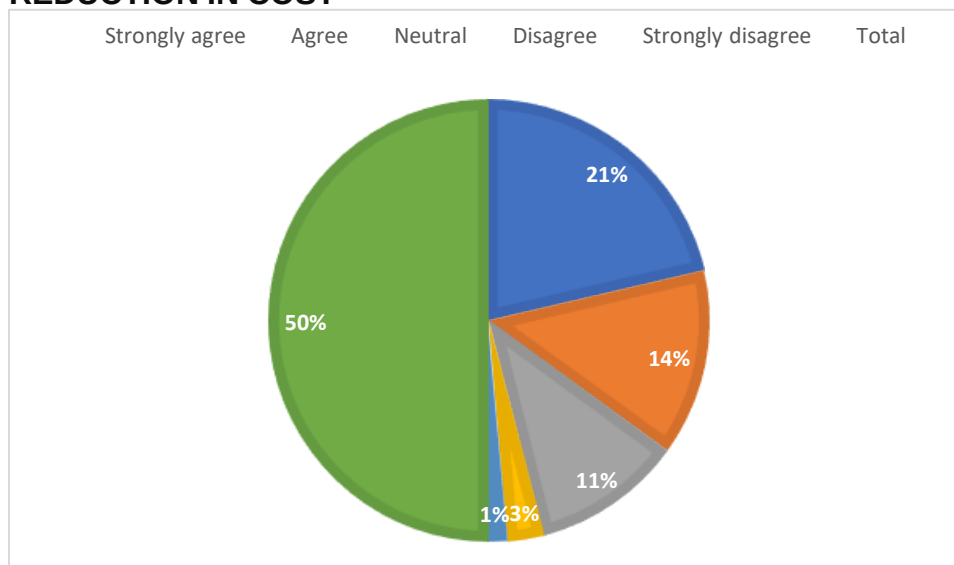


TABLE NO: 4.19

INCREASED RETURN ON ASSETS

Particulars	No. of the respondents	Percent
Strongly agree	14	9.3
Agree	32	21.3
Neutral	37	24.7
Disagree	19	12.7
Strongly disagree	48	32.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 9.3% of the respondents said that strongly agree, 21.3% of the respondents said that agree, 24.7% of the respondents said that neutral, 12.7% of the respondents said that disagree and 32.0% of the respondents said that strongly disagree towards increased return on assets.

Thus the majority of the respondents said that strongly disagree towards increased return on assets.

CHART NO: 4.19

INCREASED RETURN ON ASSETS

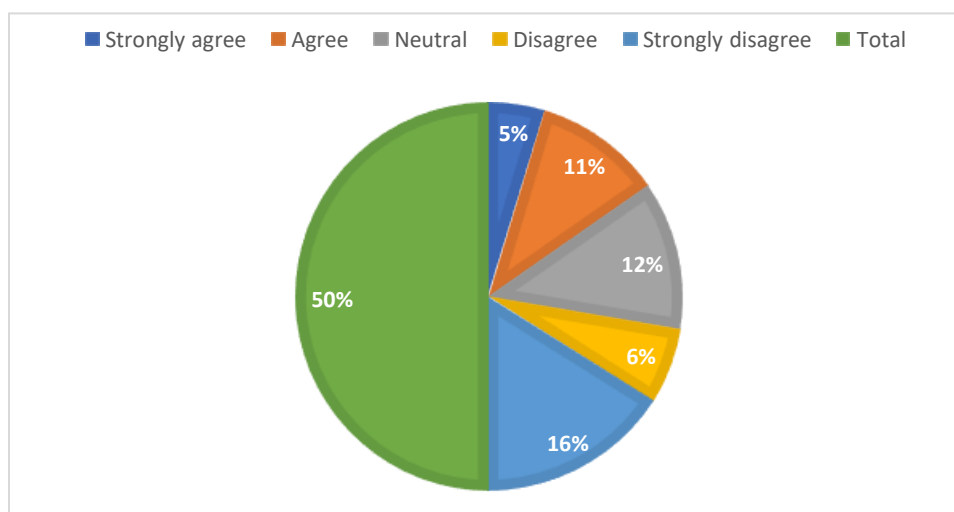


TABLE NO: 4.20
INCREASED PROFIT MARGINS

Particulars	No. of the respondents	Percent
Strongly agree	19	12.7
Agree	44	29.3
Neutral	41	27.3
Disagree	28	18.7
Strongly disagree	18	12.0
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 12.7% of the respondents said that strongly agree, 29.3% of the respondents said that agree, 27.3% of the respondents said that neutral, 18.7% of the respondents said that disagree and 12.0% of the respondents said that strongly disagree towards increased profit margins.

Thus the majority of the respondents said that agree towards increased profit margins.

CHART NO: 4.20

INCREASED PROFIT MARGINS

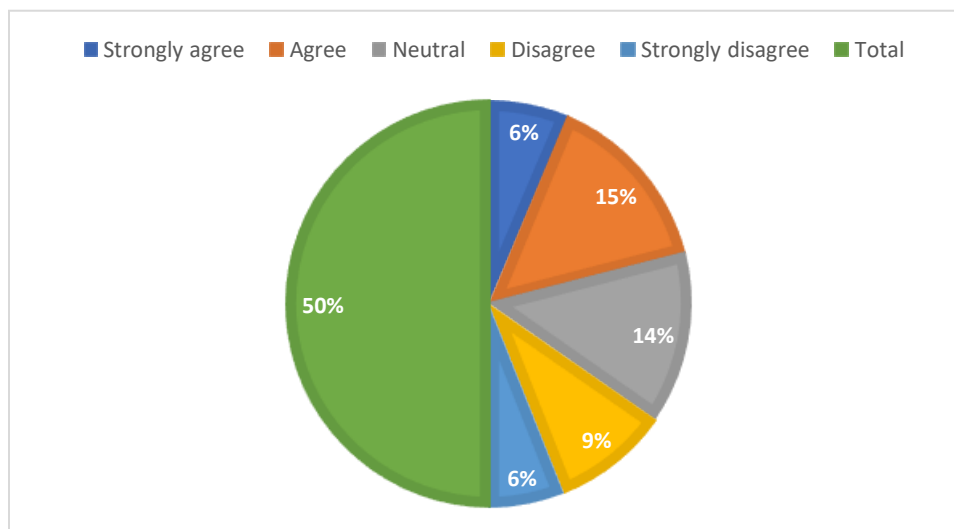


TABLE NO: 4.21

INCREASED MARKET SHARE

Particulars	No. of the respondents	Percent
Strongly agree	48	32.0
Agree	36	24.0
Neutral	41	27.3
Disagree	20	13.3
Strongly disagree	5	3.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 32.0% of the respondents said that strongly agree, 24.0% of the respondents said that agree, 27.3% of the respondents said that neutral, 13.3% of the respondents said that disagree and 3.3% of the respondents said that strongly disagree towards increased market share.

Thus the majority of the respondents said that strongly agree towards increased market share.

CHART NO: 4.21

INCREASED MARKET SHARE

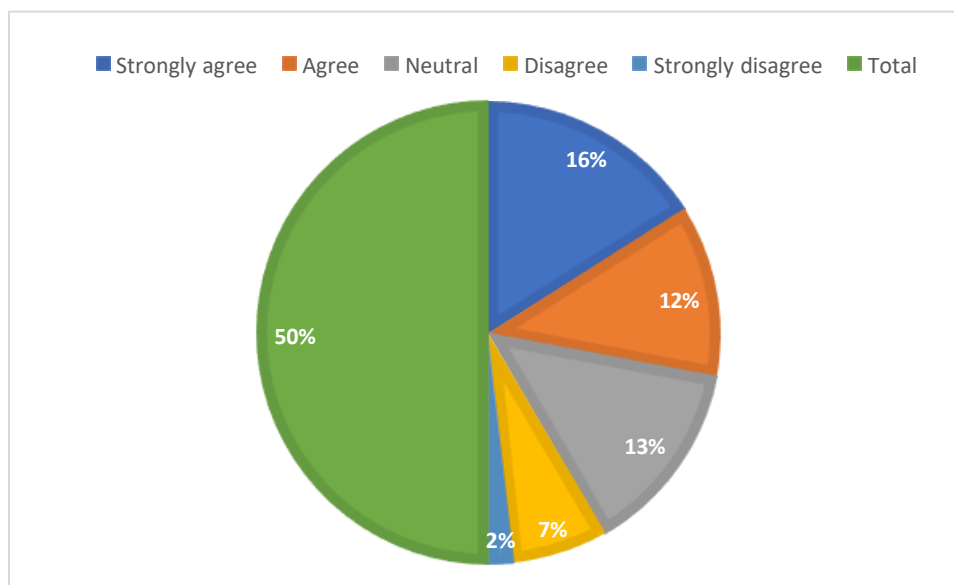


TABLE NO: 4.22

REDUCED ENVIRONMENTAL IMPACT

Particulars	No. of the respondents	Percent
Strongly agree	37	24.7
Agree	62	41.3
Neutral	18	12.0
Disagree	7	4.7
Strongly disagree	26	17.3
Total	150	100.0

Source: Primary data

INTERPRETATION

The above table shows that 24.7% of the respondents said that strongly agree, 41.3% of the respondents said that agree, 12.0% of the respondents said that neutral, 4.7% of the respondents said that disagree and 17.3% of the respondents said that strongly disagree towards reduced environmental impact.

Thus the majority of the respondents said that agree towards reduced environmental impact.

CHART NO: 4.22

REDUCED ENVIRONMENTAL IMPACT

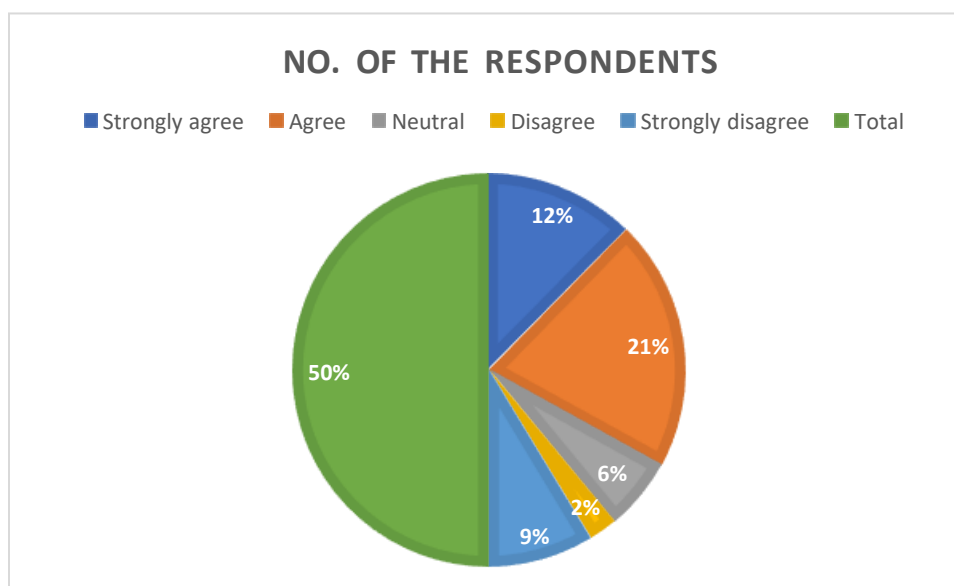


TABLE NO: 4.23

ENHANCED REPUTATION

Particulars	No. of the respondents	Percent
Strongly agree	38	25.3
Agree	28	18.7
Neutral	37	24.7
Disagree	24	16.0
Strongly disagree	23	15.3
Total	150	100.0

Source: Primary data

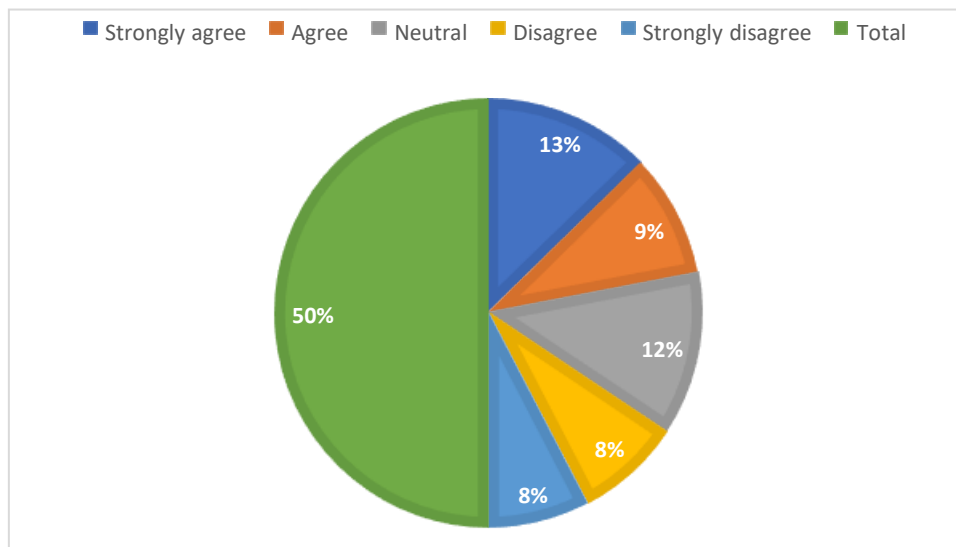
INTERPRETATION

The above table shows that 25.3% of the respondents said that strongly agree, 18.7% of the respondents said that agree, 24.7% of the respondents said that neutral, 16.0% of the respondents said that disagree and 15.3% of the respondents said that strongly disagree towards enhanced reputation.

Thus the majority of the respondents said that strongly agree towards enhanced reputation.

CHART NO: 4.23

ENHANCED REPUTATION



CHI-SQUARE ANALYSIS

RELATIONSHIP BETWEEN AGE OF THE RESPONDENT AND PROBLEMS IN IMPLEMENTING GREEN SUPPLY CHAIN MANAGEMENT PRACTICES

HYPOTHESIS TESTING

Null hypothesis (H₀):

There is no significant relationship between age of the respondent and problems in implementing green supply chain management practices.

Alternative hypothesis (H₁):

There is some significant relationship between age of the respondent and problems in implementing green supply chain management practices.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AGE OF THE RESPONDENT * PROBLEMS IN IMPLEMENTING GREEN SUPPLY CHAIN MANAGEMENT PRACTICES	150	100.0%	0	.0%	150	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	78.098 ^a	57	.033
Likelihood Ratio	88.186	57	.005
Linear-by-Linear Association	34.723	1	.000
N of Valid Cases	150		

a. 74 cells (92.5%) have expected count less than 5. The minimum expected count is .14.

INTERPRETATION:

As per the above table, it is inferred that the P value is 0.033; it is not significant to 5% (0.05) significant level. The minimum expected count is 0.14. Thus null hypothesis is accepted and it is found that there is no significant relationship between age of the respondent and problems in implementing green supply chain management practices.

CORRELATION ANALYSIS

RELATIONSHIP BETWEEN THE GENDER OF THE RESPONDENT AND BENEFITS IN IMPLEMENTING GREEN SUPPLY CHAIN MANAGEMENT PRACTICES

Correlations

	GENDER OF THE RESPONDENT	BENEFITS
GENDER OF THE RESPONDENT	1	.348**
Pearson Correlation		
Sig. (2-tailed)		.000
N	150	150
BENEFITS IN IMPLEMENTING GREEN SUPPLY CHAIN MANAGEMENT PRACTICES	.348**	1
Pearson Correlation		
Sig. (2-tailed)	.000	
N	150	150

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

INTERPRETATION:

The Above table indicates that out of 150 respondents, co-efficient of correlation between the gender of the respondent and benefits in implementing green supply chain management practices is 0.348. It is below 1. So there is positive relationship between the gender of the respondent and benefits in implementing green supply chain management practices.

CHAPTER 5
FINDINGS,SUGGESTIONS,CONCLUSION

5.1 FINDINGS

43.3% of the respondents are in the age group of 20-30years.

55.3% of the respondents are male.

52.0% of the respondents are married.

34.7% of the respondents have below Rs.20, 000 as their income level.

32.0% of the respondents have below 5year experience.

41.3% of the respondents said that highly aware towards level of awareness in green supply chain management practices.

32.7% of the respondents said that agree towards lack of customer's awareness.

53.3% majority of the respondents said that strongly agree towards lack of appropriate technology needed to implement.

50.0% of the respondents said that agree towards lack of knowledge, experience training to personals.

29.3% of the respondents said that strongly agree towards lack of level management commitment in adopting green supply chain management.

40.7% of the respondents said that strongly agree towards cost of implementation.

44.7% of the respondents said that strongly agree towards lack of government support to adopt environmental friendly polices.

40.7% of the respondents said that agree towards strict government rules and regulations.

38.7% of the respondents said that neutral towards popular quality has shown improvement.

41.3% of the respondents are agree towards customer satisfaction has increased.

34.7% of the respondents said that agree towards increase in delivery reliability.

35.3% of the respondents said that neutral towards decrease in scrap and rework.

42.7% of the respondents said that strongly agree towards reduction in cost.

32.0% of the respondents said that strongly disagree towards increased return on assets.

29.3% of the respondents said that agree towards increased profit margins.

32.0% of the respondents said that strongly agree towards increased market share.

41.3% of the respondents said that agree towards reduced environmental impact.

25.3% of the respondents said that strongly agree towards enhanced reputation.

There is no significant relationship between age of the respondent and problems in implementing green supply chain management practices.

There is positive relationship between the gender of the respondent and benefits in implementing green supply chain management practices.

5.2 SUGGESTIONS

There should be awareness in adopting and implementing the green supply chain management practices for customers of the company and employees.

There must be appropriate technology to implement green supply chain management practices in the company.

The company must provide knowledge, experience and training to the personnel to successfully implement the green supply chain management practices in the company.

There should be top level management commitment in implementing green supply chain management in the company.

The company must monitor its cost of implementation in order to prevent shortage in profit.

There should be government support to adopt environmental friendly policies in the company. It must utilize the government support.

The government must frame flexible rules to adopt green supply chain management and they lead the organization to attain green concept in the society.

The adoption of green supply chain practices must ensure to improvement in product quality to the concern.

The implementation of the green supply chain practices must increase the customer satisfaction.

The concern must ensure to increasing deliverable reliability and decrease in scrap and rework. It leads to reduction in operating cost for the company.

The company must strictly monitor the possibilities of return on assets and profit margins. It must reduce environmental impact and prevent emission of pollution in the society.

5.3 LIMITATIONS OF THE STUDY

The study restricts itself within Chennai.

The study assumes that the information was given by the employees without any bias.

The study is done based on the opinions of the sample taken at random, the size of which is 150.

The researcher found it difficult to collect the questionnaire, since some of the respondents did not give proper response in the sales point.

The project was only for 3 months. So there was time constraint.

5.4 CONCLUSION

Greening the supply chain is an industry issue that will only gain importance over the years to come. Continuous time and effort is required to implement and enhance the green capabilities. The current system of operations in the organization Power Soaps Pvt Ltd., Chennai not only in India but around the world, is damaging the environment and soon a day will come when the damages done to our earth will become irreversible. There is a huge pressure on the organization to supply products that are environmentally friendly in their sourcing, production, delivery, usage and disposal. From the myriad of parameters affecting implementation of GSCM, cost of technology and complexity of processes are perceived to be as the major obstacle to implementing Green SCM, which therefore draws attention towards the need for cost effective and easy to implement solutions. A framework needs to be established to create awareness and spread the knowledge regarding GSCM practices showcasing the cost and efficiency benefit for the companies. While the challenges might change but the fundamentals of doing good business will remain the same. The leaders should see the green supply chain management as a core part of the business that can result in cost competitiveness and value creation in longer duration.

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ANNEXURE - QUESTIONNAIRE

A STUDY ON PROBLEMS AND BENEFITS IN GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN POWER SOAPS PVT .LTD,CHENNAI

1. Name

2. Age of the respondent

a)20-30 b)30-40 c)40-50 d)Above 50

3. Gender of the respondent

a)Male b)Female

4. Marital status of the respondent

a)Married b)Unmarried

5. Income per month of the respondent

a)Below Rs.20,000 b)Rs.20,000-40,000 c)40,000-60,000 d)Above Rs.60,000

6. No of years of experience

a)Below 5 b)5-10 c)10-15 d)Above 15

7. What is your level of awareness in green supply chain management practices adopted in your company?

a)Highly aware b)partially aware c)no aware

8. Lack of employees awareness towards Green supply chain Management practices

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

9. Lack of appropriate technology needed to implement Green supply chain Management practice

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

10. Lack of knowledge, experience training to personals in green supply chain management

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

11. Lack of level management commitment in adopting green supply chain management

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

12. Cost of implementation for green Supply chain management

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

13. Lack of government support to adopt environmental friendly polices

a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree

14. Strict government rules and regulations
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
15. Popular quality has shown improvement
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
16. Customer satisfaction has increased
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
17. Increase in delivery reliability
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
18. Decrease in scrap and rework
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
19. Reduction in cost
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
20. Increased return on assets
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
21. Increased profit margins
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
- 22.Increased market share
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
- 23.Reduced environmental impact
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree
24. Enhanced reputation
a)Strongly agree b)Agree c)Neutral d)Disagree e)Strongly disagree