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COST EFFECTIVENESS OF SUPPLY CHAIN MANAGEMENT IN SRI VINAYAGA AGENCIES,COIMBATORE

A PROJECT REPORT

submitted by

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In partial fulfillment of the requirements
for the award of the degree

of

MASTER OF BUSINESS ADMINISTRATION

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PROJECT COMPLETION CERTIFICATE

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BONAFIDE CERTIFICATE

Certified that this project report titled **"COST EFFECTIVENESS OF SUPPLY CHAIN MANAGEMENT IN SRI VINAYAGA AGENCIES"**, **COIMBATORE** is the bonafide work of **Mr. Y.PARAMASIVAM (0720400025)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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DECLARATION

DECLARATION

I hereby declare that this project report entitled as "**COST EFFECTIVENESS OF SUPPLY CHAIN MANAGEMENT IN SRI VINAYAGA AGENCIES**", **COIMBATORE** has been undertaken for academic purpose submitted to Anna University, Coimbatore in partial fulfillment of requirements for the award of the degree of Master of Business Administration. The project report is the record of the original work done by me under the guidance of **Mr. C.Ganeshmoorthy**, Senior Lecturer, MBA Department during the academic year 2007-2009.

I, also declare hereby, that the information given in this report is correct to the best of my knowledge and belief.

Date: 2/5/09

Place: Coimbatore

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ACKNOWLEDGEMENT

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Y. Paramasivam

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TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF CHARTS

LIST OF CHARTS

ABSTRACT

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Cost effectiveness is a primary solution for successful business of chain store. Due to recession many companies are involved in cost reduction, optimization, and remove the excess resources. In today's highly competitive, global marketplace the pressure on organization to find new way to create and deliver value to customers grows stronger. It is against this backdrop that the discipline and philosophy of logistics and supply chain management has moved to centre stage in last two decades. The concept of integration within the business and between businesses is not new, but the acceptance of validity by manager is. There has been growing recognition that it is through logistics and supply chain management that the twin goals of cost reduction and service enhancement can be achieved.

The cost effectiveness can be achieved through many aspects; such as adopt the latest machinery, utilize the skilled manpower, reduce the expenses, and remove the excess resources. In this study we have applied the cost effectiveness through reduce the expenses and decentralization of supply chain management.

CHAPTER 1

INTRODUCTION

CHAPTER – I
INTRODUCTION

1.1 INTRODUCTION TO THE STUDY

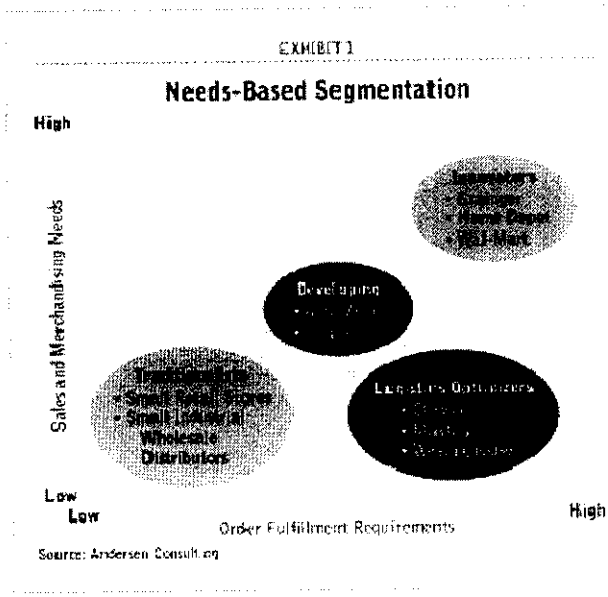
Cost optimization is an effective solution for successful business. Due to recession many companies are involved in cost reduction, optimization, and remove the excess resources. The cost effectiveness can be achieved through many aspects; such as adopt the latest machinery, utilize the skilled manpower, reduce the expenses, and remove the excess resources. In this study we have applied the cost effective technique to reduce the expenses and decentralize the supply chain management.

In todays highly competitive, global marketplace the pressure on organizations is to find new way to create and deliver value to customers for the business growth. It is against this backdrop that the discipline and philosophy of logistics and supply chain management has moved to centre stage in last two decades. There has been growing recognition that it is through logistics and supply chain management that the twin goals of cost reduction and service enhancement can be achieved. According to David L. Anderson, the supply chain management is performed through seven principles. The principles are described in detail below.

Principle 1: Segment customers based on the service needs of distinct groups and adapt the supply chain to serve these segments profitably.

Segmentation has traditionally grouped customers by industry, product, or trade channel and then taken a one-size-fits-all approach to serve them, averaging costs and profitability within and across segments. The typical result, as one manager admits: "We don't fully understand the relative value customers place on our service offerings". But segmenting customers by their particular needs equips a company to develop a portfolio of services tailored to various segments. Surveys, interviews, and industry research have been the traditional tools for defining key segmentation criteria.

Viewed from the classic perspective, this needs-based segmentation may produce some odd couples. For the manufacturer in Exhibit 1, "innovators" include an industrial distributor (Grainger), a do-it-yourself retailer (Home Depot), and a mass merchant (Wal-Mart).



Research also can establish the services valued by all customers versus those valued only by certain segments. Then the company should apply a disciplined, cross-functional process to develop a menu of supply chain programs and create segment-specific service packages that combine basic services for everyone with the services from the menu that will have the greatest appeal to particular segments. This does not mean tailoring for the sake of tailoring. The goal is to find the degree of segmentation and variation needed to maximize profitability. All the segments in Exhibit 1, for example, value consistent delivery. But those in the lower left quadrant have little interest in the advanced supply chain management programs, such as customized packaging and advance shipment notification, that appeal greatly to those in the upper right quadrant.

Of course, customer needs and preferences do not tell the whole story. The service packages must turn a profit, and many companies lack adequate financial understanding of their customers' and their own costs to gauge likely profitability. "We don't know which customers are most profitable to serve, which will generate the highest

industrial manufacturer. This knowledge is essential to correctly matching accounts with service packages—which translates into revenues enhanced through some combination of increases in volume and/or price.

Only by understanding their costs at the activity level and using that understanding to strengthen fiscal control can companies profitably deliver value to customers. One "successful" food manufacturer aggressively marketed vendor-managed inventory to all customer segments and boosted sales. But subsequent activity-based cost analysis found that one segment actually lost nine cents a case on an operating margin basis.

Most companies have a significant untapped opportunity to better align their investment in a particular customer relationship with the return that customer generates. To do so, companies must analyze the profitability of segments, plus the costs and benefits of alternate service packages, to ensure a reasonable return on their investment and the most profitable allocation of resources. To strike and sustain the appropriate balance between service and profitability, most companies will need to set priorities—sequencing the rollout of tailored programs to capitalize on existing capabilities and maximize customer impact.

Principle 2: Customize the logistics network to the service requirements and profitability of customer segments.

Companies have traditionally taken a monolithic approach to logistics network design in organizing their inventory, warehouse, and transportation activities to meet a single standard. For some, the logistics network has been designed to meet the average service requirements of all customers; for others, to satisfy the toughest requirements of a single customer segment.

Neither approach can achieve superior asset utilization or accommodate the segment-specific logistics necessary for excellent supply chain management. In many industries, especially such commodity industries as fine paper, tailoring distribution

assets to meet individual logistics requirements is a greater source of differentiation for a manufacturer than the actual products, which are largely undifferentiated.

One paper company found radically different customer service demands in two key segments—large publishers with long lead times and small regional printers needing delivery within 24 hours. To serve both segments well and achieve profitable growth, the manufacturer designed a multi-level logistics network with three full-stocking distribution centers and 46 quick-response cross-docks, stocking only fast-moving items, located near the regional printers.

Return on assets and revenues improved substantially thanks to the new inventory deployment strategy, supported by outsourcing of management of the quick response centers and the transportation activities.

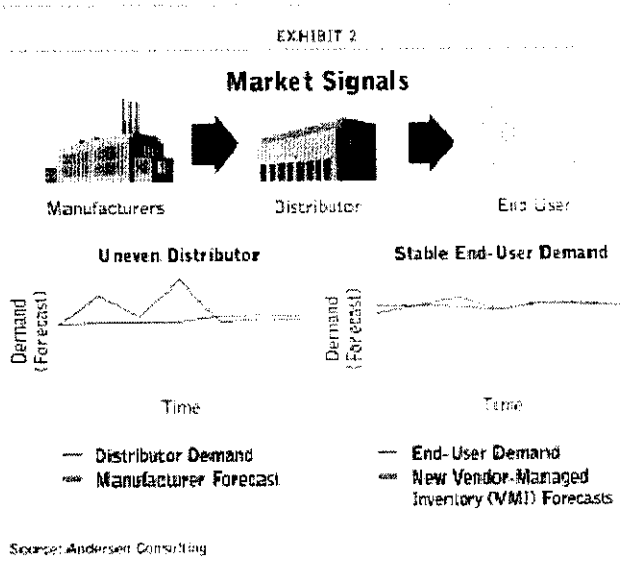
This example highlights several key characteristics of segment-specific services. The logistics network probably will be more complex, involving alliances with third-party logistics providers, and will certainly have to be more flexible than the traditional network. As a result, fundamental changes in the mission, number, location, and ownership structure of warehouses are typically necessary. Finally, the network will require more robust logistics planning enabled by "real-time" decision-support tools that can handle flow-through distribution and more time-sensitive approaches to managing transportation.

Principle 3: Listen to market signals and align demand planning accordingly across the supply chain, ensuring consistent forecasts and optimal resource allocation.

Forecasting has historically proceeded silo by silo, with multiple departments independently creating forecasts for the same products—all using their own assumptions, measures, and level of detail. Many consult the marketplace only informally, and few involve their major suppliers in the process. The functional orientation of many companies has just made things worse, allowing sales forecasts to envision growing

wants. Such independent, self-centered forecasting is incompatible with excellent supply chain management, as one manufacturer of photographic imaging found. This manufacturer nicknamed the warehouse "the accordion" because it had to cope with a production operation that stuck to a stable schedule, while the revenue-focused sales force routinely triggered cyclical demand by offering deep discounts at the end of each quarter. The manufacturer realized the need to implement a cross-functional planning process, supported by demand planning software.

Initial results were dismaying. Sales volume dropped sharply, as excess inventory had to be consumed by the marketplace. But today, the company enjoys lower inventory and warehousing costs and much greater ability to maintain price levels and limit discounting. Like all the best sales and operations planning (S&OP), this process recognizes the needs and objectives of each functional group but bases final operational decisions on overall profit potential.



Excellent supply chain management, in fact, calls for S&OP that transcends company boundaries to involve every link of the supply chain (from the supplier's supplier to the customer's customer) in developing forecasts collaboratively and then maintaining the required capacity across the operations. Channel-wide S&OP can detect

restocking algorithms and takes into account vendor and carrier capabilities, capacity, and constraints.

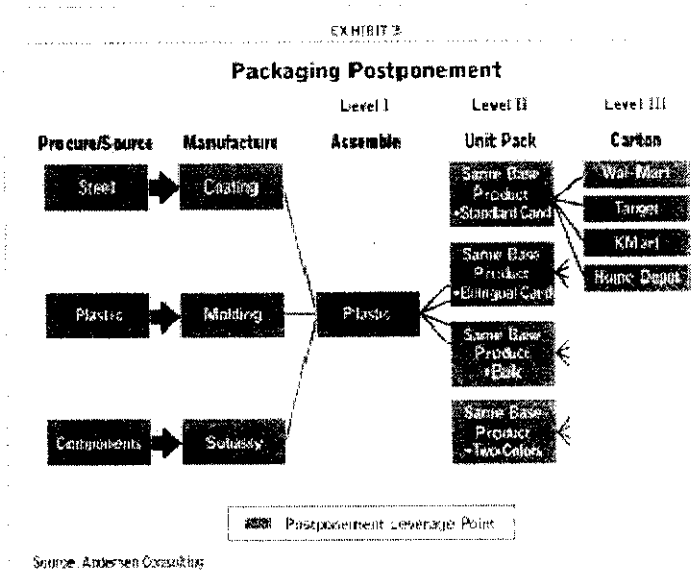
Exhibit 2 illustrates the difference that cross supply chain planning has made for one manufacturer of laboratory products. As shown on the left of this exhibit, uneven distributor demand unsynchronized with actual end-user demand made real inventory needs impossible to predict and forced high inventory levels that still failed to prevent out-of-stocks. Distributors began sharing information on actual (and fairly stable) end-user demand with the manufacturer, and the manufacturer began managing inventory for the distributors. This coordination of manufacturing scheduling and inventory deployment decisions paid off handsomely, improving fill rates, asset turns, and cost metrics for all concerned.

Principle 4: Differentiate product closer to the customer and speed conversion across the supply chain.

Manufacturers have traditionally based production goals on projections of the demand for finished goods and have stockpiled inventory to offset forecasting errors. These manufacturers tend to view lead times in the system as fixed, with only a finite window of time in which to convert materials into products that meet customer requirements.

While even such traditionalists can make progress in cutting costs through set-up reduction, cellular manufacturing, and just-in-time techniques, great potential remains in less traditional strategies such as mass customization. For example, manufacturers striving to meet individual customer needs efficiently through strategies such as mass customization are discovering the value of postponement. They are delaying product differentiation to the last possible moment and thus overcoming the problem described by one manager of a health and beauty care products warehouse: "With the proliferation of packaging requirements from major retailers, our number of SKUs (stock keeping units) has exploded. We have situations daily where we backorder one retailer, like Wal-

Mart, on an item that is identical to an in-stock item, except for its packaging. Sometimes we even tear boxes apart and repackage by hand!"



The hardware manufacturer in Exhibit 3 solved this problem by determining the point at which a standard bracket turned into multiple SKUs. This point came when the bracket had to be packaged 16 ways to meet particular customer requirements. The manufacturer further concluded that overall demand for these brackets is relatively stable and easy to forecast, while demand for the 16 SKUs is much more volatile. The solution: make brackets in the factory but package them at the distribution center, within the customer order cycle. This strategy improved asset utilization by cutting inventory levels by more than 50 percent.

Realizing that time really is money, many manufacturers are questioning the conventional wisdom that lead times in the supply chain are fixed. They are strengthening their ability to react to market signals by compressing lead times along the supply chain, speeding the conversion from raw materials to finished products tailored to customer requirements. This approach enhances their flexibility to make product configuration decisions much closer to the moment demand occurs.

The key to just-in-time product differentiation is to locate the leverage point in

requirement and to assess options, such a postponement, modularized design, or modification of manufacturing processes, that can increase flexibility. In addition, manufacturers must challenge cycle times: Can the leverage point be pushed closer to actual demand to maximize the manufacturer's flexibility in responding to emerging customer demand?

Principle 5: Manage sources of supply strategically to reduce the total cost of owning materials and services.

Determined to pay as low a price as possible for materials, manufacturers have not traditionally cultivated warm relationships with suppliers. In the words of one general manager: "The best approach to supply is to have as many players as possible fighting for their piece of the pie—that's when you get the best pricing."

Excellent supply chain management requires a more enlightened mindset—recognizing, as a more progressive manufacturer did: "Our supplier's costs are in effect our costs. If we force our supplier to provide 90 days of consigned material when 30 days are sufficient, the cost of that inventory will find its way back into the supplier's price to us since it increases his cost structure." While manufacturers should place high demands on suppliers, they should also realize that partners must share the goal of reducing costs across the supply chain in order to lower prices in the marketplace and enhance margins. The logical extension of this thinking is gain-sharing arrangements to reward everyone who contributes to the greater profitability.

Some companies are not yet ready for such progressive thinking because they lack the fundamental prerequisite. That is, a sound knowledge of all their commodity costs, not only for direct materials but also for maintenance, repair, and operating supplies, plus the dollars spent on utilities, travel, temps, and virtually everything else. This fact-based knowledge is the essential foundation for determining the best way of acquiring every kind of material and service the company buys.

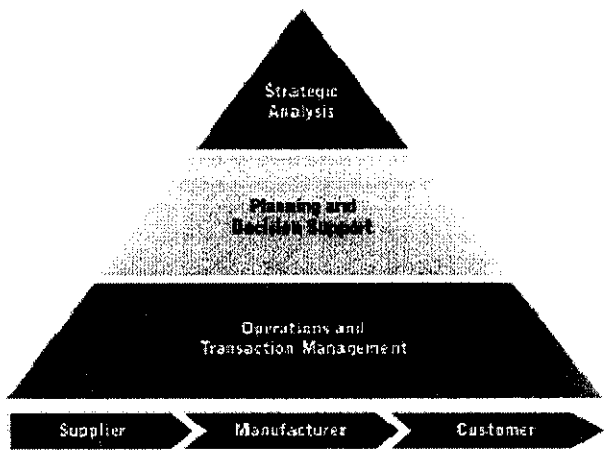
With their marketplace position and industry structure in mind, manufacturers can then consider how to approach suppliers—soliciting short-term competitive bids, entering into long-term contracts and strategic supplier relationships, outsourcing, or integrating vertically. Excellent supply chain management calls for creativity and flexibility.

Principle 6: Develop a supply chain-wide technology strategy that supports multiple levels of decision making and gives a clear view of the flow of products, services, and information.

To sustain reengineered business processes (that at last abandon the functional orientation of the past), many progressive companies have been replacing inflexible, poorly integrated systems with enterprise-wide systems. Yet too many of these companies will find themselves victims of the powerful new transactional systems they put in place. Unfortunately, many leading-edge information systems can capture reams of data but cannot easily translate it into actionable intelligence that can enhance real-world operations. As one logistics manager with a brand-new system said: "I've got three feet of reports with every detail imaginable, but it doesn't tell me how to run my business."

EXHIBIT 4

Key Aspects of Supply Chain Technology Strategy



Source: Anderson Consulting

This manager needs to build an information technology system that integrates capabilities of three essential kinds. (See Exhibit 4.)

- **For the short term**, the system must be able to handle day-to-day transactions and electronic commerce across the supply chain and thus help align supply and demand by sharing information on orders and daily scheduling.
- **From a mid-term perspective**, the system must facilitate planning and decision making, supporting the demand and shipment planning and master production scheduling needed to allocate resources efficiently.
- **To add long-term value**, the system must enable strategic analysis by providing tools, such as an integrated network model, that synthesize data for use in high-level "what-if" scenario planning to help managers evaluate plants, distribution centers, suppliers, and third-party service alternatives.

Despite making huge investments in technology, few companies are acquiring this full complement of capabilities. Today's enterprisewide systems remain enterprise-bound, unable to share across the supply chain the information that channel partners must have to achieve mutual success.

Ironically, the information that most companies require most urgently to enhance supply chain management resides outside of their own systems, and few companies are adequately connected to obtain the necessary information. Electronic connectivity creates opportunities to change the supply chain fundamentally—from slashing transaction costs through electronic handling of orders, invoices, and payments to shrinking inventories through vendor-managed inventory programs.

Principle 7: Adopt channel-spanning performance measures to gauge collective success in reaching the end-user effectively and efficiently.

To answer the question, "How are we doing?" most companies look inward and apply any number of functionally oriented measures. But excellent supply chain

managers take a broader view, adopting measures that apply to every link in the supply chain and include both service and financial metrics.

First, they measure service in terms of the perfect order—the order that arrives when promised, complete, priced and billed correctly, and undamaged. The perfect order not only spans the supply chain, as a progressive performance measurement should, but also view performance from the proper perspective, that of the customer.

Second, excellent supply chain managers determine their true profitability of service by identifying the actual costs and revenues of the activities required to serve an account, especially a key account. For many, this amounts to a revelation, since traditional cost measures rely on corporate accounting systems that allocate overhead evenly across accounts. Such measures do not differentiate, for example, an account that requires a multi-functional account team, small daily shipments, or special packaging. Traditional accounting tends to mask the real costs of the supply chain—focusing on cost type rather than the cost of activities and ignoring the degree of control anyone has (or lacks) over the cost drivers.

Deriving maximum benefit from activity-based costing requires sophisticated information technology, specifically a data warehouse. Because the general ledger organizes data according to a chart of accounts, it obscures the information needed for activity-based costing. By maintaining data in discrete units, the warehouse provides ready access to this information.

To facilitate channel-spanning performance measurement, many companies are developing common report cards. These report cards help keep partners working toward the same goals by building deep understanding of what each company brings to the partnership and showing how to leverage their complementary assets and skills to the alliance's greatest advantage. The willingness to ignore traditional company boundaries in pursuit of such synergies often marks the first step toward a "pay-for-performance" environment.

1.2 GLOBAL PHARMACEUTICAL INDUSTRY

Major players of the world pharmaceutical industry

The pharmaceutical industry is characterized by a high level of concentration with fifteen multinational companies dominating the industry. Table 1.1 contains information about these major pharmaceutical companies that are sorted in the order of their 2004 revenues from the sales of pharmaceutical products. Numbers provided in this table include sales of all subsidiaries and affiliated companies that are consolidated in annual reports of the corresponding companies. In order to facilitate a comparison of different companies revenues of all of them are shown in US dollars; financial data of the companies with headquarters outside of the U.S. was converted to US dollars using average 2004 rates provided in Table 1.2.

Table 1.1. Major pharmaceutical companies

Company	HQ location	Revenue of pharmaceutical segment, mln USD	Total sales, mln USD	Share of pharmaceutical segment, %
Pfizer	NY, U.S.	46,133	52,516	87.85%
GlaxoSmithKline	UK	31,434	37,324	84.22%
Johnson & Johnson	NJ, U.S.	22,190	47,348	46.87%
Merck	NJ, U.S.	21,494	22,939	93.70%
AstraZeneca	UK	21,426	21,426	100.00%
Novartis	Switzerland	18,497	28,247	65.48%
Sanofi-Aventis	France	17,861	18,711	95.46%
Roche	Switzerland	17,460	25,168	69.37%
Bristol-Myers Squibb	NY, U.S.	15,482	19,380	79.89%
Wyeth	NJ, U.S.	13,964	17,358	80.45%
Abbott	IL, U.S.	13,600	19,680	69.11%
Eli Lilly	IN, U.S.	13,059	13,858	94.23%
Takeda	Japan	8,648	10,046	86.09%
Schering-Plough	NJ, U.S.	6,417	8,272	77.57%
Bayer	Germany	5,458	37,013	14.75%

Source: 2004 Annual Reports of the companies

As Table 1.1 shows, the majority of the largest pharmaceutical companies are not diversified. They are either concentrated exclusively on pharmaceutical products (Eli Lilly and AstraZeneca are good examples with virtually 100% of their revenues coming from sales of pharmaceutical products) or, although they develop and manufacture other health care products, they still have pharmaceutical divisions as the core of their business

that provide more than 50% of their revenues. Other products manufactured by these companies usually include medical devices, nutritional products, consumer healthcare products and products for animal health.

Only two out of these 15 major pharmaceutical companies have revenues from sales of pharmaceutical products that are lower than 50% of their total sales. These companies are world giants Johnson & Johnson (which besides pharmaceutical products manufactures consumer goods and medical devices) and Bayer which has only about 15% of its revenues from the sales of pharmaceutical products.

Eli Lilly's $13.1 billion sales figure made it the twelfth largest company – with Pharmaceutical sales considerably larger than Bayer's $5.5 billion but a lot less than Pfizer's $46.1 billion.

Geographical headquarters of major pharmaceutical companies are approximately evenly distributed between the U.S. and Western Europe with only one Asian company in the list. Indiana is home to one of these companies, Eli Lilly. More detailed analysis of these companies will be made in the second part of this paper.

Table 1.2 Average 2004 exchange rates

Currency	Exchange rate
EUR / USD	1.2438
GBP / USD	1.8333
USD / JPY	108.1508
USD / CHF	1.2426

Source: calculated using Federal Reserve daily data

Industry Trends

Here we examine structural changes causing significant transformations, major factors leading to strong future sales growth, and point out the industry's strong reliance on research and development.

Structural changes

The pharmaceutical industry is currently undergoing a period of very significant transformation. The majority of "Big Pharma" companies generate high returns, thus providing them with excess cash for further rapid growth – whether organic, or through mergers and acquisitions. Although size of the company on its own does not guarantee success, it gives a significant advantage, especially in pharmaceutical industry. Besides economies of scale in manufacturing, clinical trials and marketing, bigger companies can allow investments in more research and development (R&D) projects that diversify their future drugs portfolio and make them much more stable in the long term. As the result, top-companies in the industry were active participants of mergers and acquisitions (M&A), new joint ventures and spin-offs of non-core businesses.

The largest acquisitions in the industry during last years were the acquisition of Pharmacia by Pfizer (purchase price $58 billion), and acquisition of Guidant by Johnson & Johnson (purchase price $25 billion). Both acquisitions allowed these two U.S.-based companies to solidify their places among the elite of the pharmaceutical industry. European companies were even more aggressive in M&A activity than their American competitors – 3 out of 6 major European companies underwent mergers during the last several years: GlaxoSmithKline (merger of Glaxo Wellcome and SmithKline Beecham), AstraZeneca (merger of Astra and Zeneca) and Sanofi-Aventis (merger of Sanofi-Synthelabo and Aventis).

Another form of structural change in the industry was establishing of new strategic alliances and joint ventures. So far as the research and development process for each drug take many years and

these investments of time and financial resources remains unclear until the final approval of the drug, "Big Pharma" companies are constantly looking for synergies that they can get from cooperation with their competitors. Last years gave multiple examples of such initiatives. For example, cooperation of Sanofi-Aventis and Bristol-Myers Squibb resulted in production of Plavix, which is currently one of the top-selling products for each of these companies.

Finally, "Big Pharma" companies in order to maintain strong sales growth and meet profitability expectations of their shareholders were actively selling low-profitability or non-core businesses. For example, in 2003 Merck sold its low-profitability Medco Health Solutions that helped to increase its profitability margin. Massive sales of non-pharmaceutical businesses by Takeda also were compatible with its strategy to concentrate its financial resources on its core pharmaceutical business.

Major factors of future growth

The pharmaceutical industry showed high sales growth rates in the recent past, and a number of factors suggest that this trend will continue in the future.

First, due to numerous advancements in science and technology, including those in the health care industry, life expectancy in the developed countries has been steadily growing. As the result, growing proportion of elderly people promises further growth of demand for healthcare products.

Moreover, according to various studies, a significant portion of elderly population in the United States and other countries does not receive proper treatment. For example, only about one third of the U.S. population who requires medical therapy for high cholesterol is actually receiving adequate treatment. As it is expected, the Medicare Prescription Drug Improvement and Modernization Act starting from the beginning of 2006 will increase access of senior citizens to the prescription drug

Although developing countries at the moment have a small portion of world pharmaceutical sales, these countries also have a significant potential for the pharmaceutical industry in the future. Fast growing economies in Asia, South America and Central & Eastern Europe suggest an increasing solvency of population and make these markets more and more attractive for "Big Pharma" companies. Further reforms of legislation systems in the countries of these regions, especially regarding patent protection issues, will inevitably result in growing pharmaceutical sales.

Strong emphasis on R&D

One of the distinctive characteristics of the "Big Pharma" companies is a very high level of investments in research and development. On average, it takes about 10-15 years, and millions of dollars to develop a new medicine. According to industry statistics, only about one in ten thousand chemical compounds discovered by pharmaceutical industry researchers proves to be both medically effective and safe enough to become an approved medicine, and about half of all new medicines fail in the late stages of clinical trials. Not surprisingly, according to "Research and Development in Industry: 2001" report of the National Science Foundation, in 2001 the pharmaceutical industry had one of the highest R&D expenditures as percentage of net sales. More detailed information on this issue is provided in the second part of this paper.

Key Challenges

The main challenges for drug companies come from four areas. First, they must deal with competition from within and without. Second, they must manage within a world of price controls that dictate a wide range of prices from place to place. Third, companies must be constantly on guard for patent violations and seek legal protection in new and growing global markets. Finally, they must manage their product pipelines so that patent expirations do not leave them without protection for their investment.

Competition

The pharmaceutical industry currently represents a highly competitive environment. One can distinguish three layers of competition for "Big Pharma" companies:

First, obviously, "Big Pharma" companies compete among themselves. Although not all leading pharmaceutical companies cover all segments of pharmaceutical market, almost all of them are active in R&D and production of drugs in the segments with the highest potential – such as treatment of infectious, cardiovascular, psychiatric or oncology diseases.

Secondly, "Big Pharma" companies experience significant profit losses due to competition from the generic drug manufacturers. Opposite to the research-oriented pharmaceutical companies, which invest significant financial resources and time to develop new medicines, generic drug manufacturers spend minimum resources on R&D, and start manufacturing already developed by other companies drugs after their patent expiration. Because generic drug manufacturers do not have to recoup high R&D costs, prices of their products are usually much lower then those of major pharmaceutical companies; as the result, after patent expiration, generic drugs manufacturers capture significant market share, dramatically decreasing revenues of the "Big Pharma" companies.

Finally, the whole pharmaceutical industry competes with other health care industries. In this case, pharmaceutical companies should not only demonstrate high efficiency of their products, but also provide obvious proof of cost advantages in comparison with other forms of care.

Prospects for international expansion

According to IMS Health as restated in the 2004 AstraZeneca Annual Report, the United States, the European Union and Japan comprise the three major pharmaceutical markets which together represent 88% of world sales; and the U.S. market alone accounts for about 47% of world sales. Not surprisingly, all "Big Pharma" companies to a significant extent concentrate their resources on these markets, especially on the U.S. market.

At the same time, although the share of world pharmaceutical sales in developing countries at this point of time is much lower, they show much faster growth rate than developed countries do. For example, the China, 9th largest world market, showed a 26% sales increase in 2004, followed by Thailand (16% growth) and Egypt (15%). Some Latin American countries, such as Mexico, Brazil, Argentina and Venezuela also show much faster sales growth rate than average worldwide. Therefore, developing countries contain a significant potential for further expansion of pharmaceutical industry in the future.

1.2.1 PHARMACEUTICAL INDUSTRY IN INDIA

Indian pharmaceutical industry has shown tremendous improvement in terms of infrastructure development, technology base and range of production. All this has been possible due to a strong base of scientific as well as technical manpower and also due to pioneering work done in process development, whereby assimilation of technology would take place. The industry's strength lies in the world technology, cost effective production.70 percentage of the bulk drugs and almost all required formulation, rich bio-diversity, competition R&D costs and over 20 percentage growth rate in exports with increasing number of bulk drugs going off patents and capability of Indian scientists in process technology the share of Indian pharma products in world market is expected to rise further.

The Indian pharmaceutical sector has come a long way, bring almost non-existent before 1970 to a prominent provider of health care products, meeting almost 95 percentage of the country's pharmaceuticals needs. Indian pharmaceutical industry is monitoring up the value chain. Foreign direct investment in pharmaceutical industry is moving towards basic research driven, export oriented global presence, providing wide range of value added quality products and services. Foreign direct investment will play a vital role in defining the future of the pharmaceutical industry. The product patent regime that came into effect in January 2005 has led to long-term growth.

In the present scenario, the growth of a domestic pharmaceutical company is critically dependent on its therapeutic presence; the old and mature categories like anti-infective, vitamins, analgesics are de-growing while new lifestyle categories like cardio vascular, central nervous system (CNS), anti Diabetic are expanding at double-digit growth rates. Indian companies are putting their act together to tap FDI in the regulated high margin markets of the developed countries. The US market will remain the most lucrative market for Indian companies led by its market size and the intensity of blockbuster drugs going off patent.

FDI up to 100 percentage is permitted on the automatic route for manufacture of drugs and pharmaceuticals, provided the activity does not attract compulsory licensing or involve use of recombinant DNA technology and specific cell/tissue targeted formulations. FDI proposals for the manufacture of licensable drugs and pharmaceuticals and bulk drugs produced by recombinant DNA technology, and specific cell/tissue targeted formulations will require prior government approval.

Outsourcing in the fields of manufacturing and FDI is the best event in the pharmaceutical industry. Spiraling cost, expiring patents, low R&D costs and market dynamics are driving the MNCs to outsource both manufacturing and research activities. India with its apt chemistry skills and low cost advantages, both in research and manufacturing coupled with skilled manpower would attract a lot of FDI in the days to come.

1.3 ORGANIZATION PROFILE

Sri Vinayaga Agencies, is a leading pharma distributor in Coimbatore. The company is established in 1985 by **Mr.P.YEGAPPAN & Mr.P.RAMU**, with lowest capital of Rs.80000 since its inception has been a distributor (superstockist) of different pharmaceutical companies for Coimbatore area (including Tirupur, Ooty, Mettupalayam, Pollachi, Udumalpet) and also catering to the state of Tamilnadu and Catering to approximately 5000 retail chemists through chain of 19 stockist. The operations of inventory control and accounts are fully computerized.

Locations:

1. Sri Vinayaga Agencies Located at Gandhipark, Cbe
2. It is the one of the hub for Pharma distribution and it provides easy access to our market. The market is catered through efficient transport network. And also, the company has a contractual transporter for its delivery of Pharma products at Ooty and Udumalpet

Focus and Growth:

Sri Vinayag Agencies has very rich and vast experience of 30 years. Being a pioneer industry, we focus much on core area of our business to enhance the growth of retailer and our company.

Expansion:

The Company wants to expand its area of operations as Superstockists/ C&F Agents from Coimbatore to rest of near stations as it possess the requisites men, space and finance.

1.3.1 ASSOCIATED COMPANY PROFILE

Sun Pharmaceuticals

An international speciality pharma company, with a presence in 30 markets. We

prescribed in chronic therapy areas like cardiology, psychiatry, neurology, gastroenterology, diabetology and respiratory. We have the same drive for growth that marked our early days. Sun Pharma came into existence as a startup with just 5 products in 1983. In the time since, we have crossed several milestones to emerge as an important speciality pharma company with technically complex products in global markets, and a leading pharma company in India.

In India, We have reached leadership in each of the therapy areas that we operate in, and are rated among the leading companies by key customers. Strengthening market share and keeping this customer focus remains a high priority area for the company. In the post-1996 years, we have used a combination of internal growth and acquisitions to drive growth; important mergers were those of the US, Detroit based Caraco Pharm Labs, ICN Hungary (now called Alkaloida Chemical Company Exclusive Group), and that of the internationally approved plants at Halol, India as well as Bryan, Ohio, US and Cranbury, NJ, US.

Dr.Reddy's

At Dr. Reddy's we aim at providing affordable and innovative medicines for healthier lives. We serve society's important needs for affordable medicines through the API component of PSAI and the Global Generics business, and for innovative products that solve unmet medical needs through the CPS component of PSAI and the Proprietary Products Businesses.

Headquartered in India, we are a global pharmaceutical company with a presence in more than 100 countries. We have wholly-owned subsidiaries in the US, UK, Russia, Germany and Brazil; joint ventures in China, South Africa and Australia; representative offices in 16 countries; and third-party distribution set ups in 21 countries. Dr. Reddy's is the first pharmaceutical company in Asia outside of Japan to be listed on the NYSE.

Our strong portfolio of businesses, geographies and products gives us an edge in an increasingly competitive global market and allows us to provide affordable medication to people across the world, regardless of geographic and socio-economic barriers.

ICON

Icon- literally means an image, a representation. Icon Pharma- true to its words is an image of an ideal pharmaceutical company- an image of quality, service and humane approach. This is because the business nature is to extend support to health care efforts for improving quality of ailing human life.

Established in 1993- the company is engaged in the manufacture and sale of generic and proprietary allopathic pharmaceutical products - over 200 products to offer belonging to prescription and OTC ranges in different pharmaceutical formulations viz. tablet, capsule, oral liquids and powder preparations. With an annual turnover of around 3 crore rupees, the company is continuously engaged in exploring more market segments, geographically, therapeutically and vertically and horizontally.

ICON Pharma has been ensuring that its products should remain within the reach of masses, therefore its pricing policies has been to provide high quality drugs at an affordable price.

Unique (J.B. Chemicals & Pharmaceuticals)

J. B. Chemicals & Pharmaceuticals Ltd. (JBCPL) is one of India's fastest growing, professionally managed, global pharmaceutical companies manufacturing a wide range of innovative specialty medicines for domestic and international markets. A flagship company of the Unique Group, it is also known to many as "Unique". Its product portfolio consists of pharmaceutical specialties in various dosage forms, herbal remedies, diagnostics, generic drugs, active pharmaceutical ingredients (APIs). Some of the products within these categories enjoy leadership positions in the Indian and foreign

The Company is strategically focused on R&D and totally committed to respond promptly to market needs by developing quality products at affordable prices for the masses. With a strong base of 11 state-of-the-art manufacturing units (including three US FDA approved Tablet & API plants) and two DSTC approved R&D centers, the company has entered a dynamic phase of expansion into newer and faster growing therapeutic segments such as anti-diabetics, CNS and Respiratory. J B Chemical & Pharmaceuticals Ltd. is a customer driven, financially sound company, consistently enhancing value for its shareholders by rewarding them with healthy dividends year after year. Headquartered in Mumbai, it has a large global presence with operations in over 50 countries across the globe.

52% of the Company's revenue comes from exports to USA, Europe, Latin America, Africa, and SE Asia. To further enhance its strength in foreign markets, JBCPL has also entered into joint venture and strategic tie ups with key partners in USA etc.

Veritaz Healthcare Limited

Veritaz Healthcare Limited has acquired all brands of Citadel Aurobindo Biotech Limited and are re-launching in the Indian Pharma Market. The company has a contemporary product basket to cater to different specialities. The company will be leveraging global cutting edge technology and R & D to offer state of the art products and innovative drug delivery systems in the near future. The Management Team is highly experienced and will offer ample scope for talented and result delivering individuals, opportunities for development, growth and an exciting future. Veritaz, in the first phase is looking to aggressively rebuild its top brands and market share in Southern and Western India.

Pfizer India

Pfizer Global Pharmaceuticals' division can be broadly classified into four areas of business - Pharmaceuticals, Consumer Health, Specialty and India Agencies.

products. This business is driven by two sales teams with a clear focus on key therapeutic segments namely Cardiovasculars, Anti-infectives, CNS, Pain Management, Nutritional and Women's Health.

Pfizer India has strengthened its position in the market through successful launches of its international research pipeline products as well as locally developed products. Pfizer is recognized for its brand building capabilities in the industry. Corex (a cough formulation) and Becosules (a multi-vitamin), continue to rank as the No.1 and 6 brands amongst over 9000 formulations audited in India. In fact, ten of its key brands (including Gelusil and Benadryl from Consumer Health) feature amongst the leading 300 brands in the industry.

Over the years this group has the distinction of winning several accolades including the OPPI Brand Excellence Award (2001) for Minipress XL, Express Pharma Pulse (2002) Award for Overall Performance, Bronze Medal for the Minipress XL DTC advertisement on BPH awareness at the Asia-Pacific Adfest (2003) and the Golden Peacock Innovative Product Award (2003) for Magnex. Other pioneering efforts include partnering with leading medical associations for developing several treatment guidelines, namely Indian Hypertension Treatment Guidelines, Minimal Access Surgery Guidelines and the Febrile Neutropenia Guidelines.

Equinox Pharma

Equinox Pharma is a computationally-driven drug discovery company which, in partnership with pharma companies, biotechs and medicinal chemistry-based contract research organizations, will use its capability in machine learning and chemoinformatics (together given the descriptor "INDDExTM") to undertake a range of drug discovery collaborations. These collaborations will be based upon IP generated through Equinox programmes focused on high value validated drug targets, on the partner's proprietary data or on data 'mined' specifically to address a target of interest to both parties.

Computationally-driven means that we put in silico techniques at the centre of our drug discovery activities rather than use them simply as support to high throughput screening. This allows us to capture the benefits of computational techniques such as speed and efficiency and critically enables us to discover new chemotypes. We are a semi-virtual company using our in silico models to direct the work of external medicinal chemistry and pharmacology providers.

CHAPTER 2

OBJECTIVE AND SCOPE

CHAPTER – II

COST EFFECTIVENESS OF SUPPLY CHAIN MANAGEMENT

2.1 OBJECTIVE OF THE STUDY

Primary Objective

- To find out the total cost for centralized distribution versus decentralized distribution system for adoption

Secondary Objective

- To study the purchase, sales and stock of the organization.
- To find the operational efficiency through decentralization of distribution channel.
- To provide suggestions to improve the cost effectiveness.

2.2 STATEMENT OF PROBLEM

A sound managerial control requires proper management of liquid assets and inventory. These assets are a part of working capital of the business. An efficient use of financial resources is necessary to avoid financial distress. Receivables result from credit sales. A concern is required to allow credit sales in order to expand its sales volume. It is not always possible to sell goods on cash basis. Sometimes, other business concerns in that line might have established a practice of selling goods on credit basis. Under these circumstances, it is not possible to avoid credit sales without adversely affecting sales. The increase in sales is also essential to increase profitability. After a certain level of sales, the increase in sales will not proportionately increase production costs. The increase in sales will bring in more profits. Thus, inventory constitutes a significant portion of current assets of a firm. But, for investment in inventories, a firm has to incur certain costs. So it is therefore very necessary to have a proper control and management of inventory. The Vinayaga Agencies is a distributor for Pharmaceutical products. In order to maintain the effective cost, evaluation of inventory and supply chain management is proposed in this study.

2.3 SCOPE OF THE STUDY

The cost optimization is performed in this study and it focused only on expenses occurred for the company, further decentralization is investigated for efficient supply chain management and improve the sales of the organization. In future, the same study can be investigated in other dimensions such as inventory cost optimization, credit policy and effective customer segmentation.

2.4 LIMITATIONS OF THE STUDY

- Difficulty of getting some important data due to its confidential nature
- Due to time constraint the period of study was limited to 2 financial years.
- The results obtained from the study cannot be generalized to other companies in the same industry.

2.5 RESEARCH METHODOLOGY

Research Design

For the present study descriptive research is adopted to find out the cost effectiveness of Sri Vinayaga Agencies through Supply Chain Management, Coimbatore.

Descriptive Research

The major purpose of describing the characteristics of the area of study. The advantages of descriptive research are that they provide a quick, efficient, inexpensive and accurate means of accessing information about the area of study.

Nature of data

Secondary data has been employed in the present study. Stock Statements were collected for the period of two years i.e. from 1st April 2007 to 31st March 2008.

Method of data collection

Direct interaction and data collected from Deputy General Manager - Finance Department (Stores), Senior Accounts Officer - Priced Stores Ledger Section (PSL), and other experts of the Finance Department inorder to get indepth knowledge on the functioning of the Finance Department and inventory management practices of the company. The cost estimation is separately investigated from the general public in the proposed areas.

Tools Applied

The following statistical tools applied in this study.

- Summary Statistics
- Percentage Analysis
- Paired t-test
- Students t-test

2.6 REVIEW OF LITERATURE

Mesfin, Berhane (2008), Supply chain is the interconnected set of linkages between suppliers of materials and services that spans the transformation of raw materials into products and services and delivers them to a firm's customers. Supply chain is highly recognized in developed countries for it is estimated to consume 10% of their Gross National Product (GNP). It is therefore projected to be of a greater proportion in the developing countries like Ethiopia, where a large amount of capital is tied up in inventories and in transportation systems for moving materials. Thus, a supply chain must be managed by controlling inventories. Developing a supply chain management system (SCMS) requires the analysis of the flow of materials from the initial sourcing to the final end customers. SCM has become a universal approach to cost effectiveness, timely delivery and the creation of growth oriented exchange system in goods and services.

Aregawi, Gebreeyesus (2008), the term supply chain management (SCM) pre-supposes that there exists a supply chain to be managed. SCM has become a universal approach to cost effectiveness, timely delivery and the creation of growth oriented exchange system in goods and services. With a focus on SCM in which cost, inventory and time are the key challenges, this thesis develops a model to aid the improvement of performance of supply chain system. The model is developed based on existing SCM knowledge (Initiated or adopted from literature review and pervious research works of Vikas Chandra (India-IIT, 1999), result of the circulated questionnaires and, interviewed questionnaires, and the results of an assessment or observations of supply chain management in Ethiopian soft drinks industries.

Valeeva, N.I. (2005), the main objective of this study is to develop a methodology for quantifying and optimizing strategies for improving food safety in the dairy chain for fluid pasteurized milk. A linear programming model is developed to identify cost-effective (least-cost) measures that comprise strategies for attaining

for two situations, i.e. for a dairy farm size of 50 milking cows and one of 250 milking cows. The main inputs for the model are the costs of the control measures and the effectiveness of these measures in improving food safety. Extra costs per ton of milk of implementing and maintaining the measures were calculated using a partial budgeting method. Relative effectiveness of control measures was assessed by experts using adaptive conjoint analysis.

Monique A. van der Gaag (2004), Pork is one of the sources of food-borne salmonellosis in humans. In this paper, the cost-effectiveness of different control scenarios against Salmonella in the stages finishing, transport, lairage and slaughtering is explored. A stochastic simulation model was used for the epidemiological analysis and a deterministic model for the economic evaluation. Results showed that the cost-effectiveness of interventions in the finishing and slaughtering stages is the highest with respect to the reduction of the prevalence of contaminated carcasses. However, the cost-effectiveness is reduced in case not all farms or firms within a stage intervene to reduce the prevalence of Salmonella.

Liz Ritchie, Bernard Burnes, Paul Whittle, Richard Hey (2000), describes a research project carried out within the Manchester Royal Infirmary (MRI) to evaluate and improve the recycling and disposal of pharmaceutical products. Discusses supply chain management practices in the National Health Service and, in particular, focuses on the concept of reverse logistics (the recycling of pharmaceutical stock for later re-use). The research involved the analysis of returned stock from 28 hospital units and, from this data, the development and implementation of a revised recycling process within MRI Pharmacy. Concludes by arguing that there are significant financial and operational advantages to the NHS, and other organisations, in developing effective reverse logistics processes.

Douglas M. and Martha C. Cooper (2000), Successful supply chain management requires cross-functional integration and marketing must play a critical role.

The challenge is to determine how to successfully accomplish this integration. We present a framework for supply chain management as well as questions for how it might be implemented and questions for future research. Case studies conducted at several companies and involving multiple members of supply chains are used to illustrate the concepts described.

Tom Davis (1993), this study shortening product life cycle, improves the customer service through complete scope of supply chain management. He has developed a framework for addressing the uncertainty that plagues the performance of suppliers, the reliability of manufacturing and transportation process and the changing desires of customers. The author describes several cases in which entire product families have been reevaluated in a supply chain context. The methodology he presents should help others to manage their own supply chains more successfully.

CHAPTER 3

DATA ANALYSIS AND INTERPRETATION

CHAPTER – III

ANALYSIS AND INTERPRETATION

3.1 SUMMARY STATISTICS

Table 4.1: Monthly Purchase of the financial year 2006 - 07

MONTHLY PURCHASE	2006 - 07
April	49.24
May	49.42
June	52.39
July	59.24
August	63.37
September	53.73
October	53.84
November	72.56
December	63.76
January	67.33
February	76.24
March	67.73
Mean	**60.74**
Standard Deviation	**9.13**
Coefficient of Variance	**15.03**

INTERPRETATION

From the table it is found that there was a high purchase of Rs.72.56 lakh in the month of November 2006 and minimum purchase of Rs.49.24 lakh in the month of April 2006.

INFERENCE

It is inferred from the above table that according to monthly purchase of the financial year 2006 – 07, mean value is 60.74, standard deviation is 9.13 and coefficient of variance is 15.03.

Chart 1: Monthly Purchase of the financial year 2006 - 07

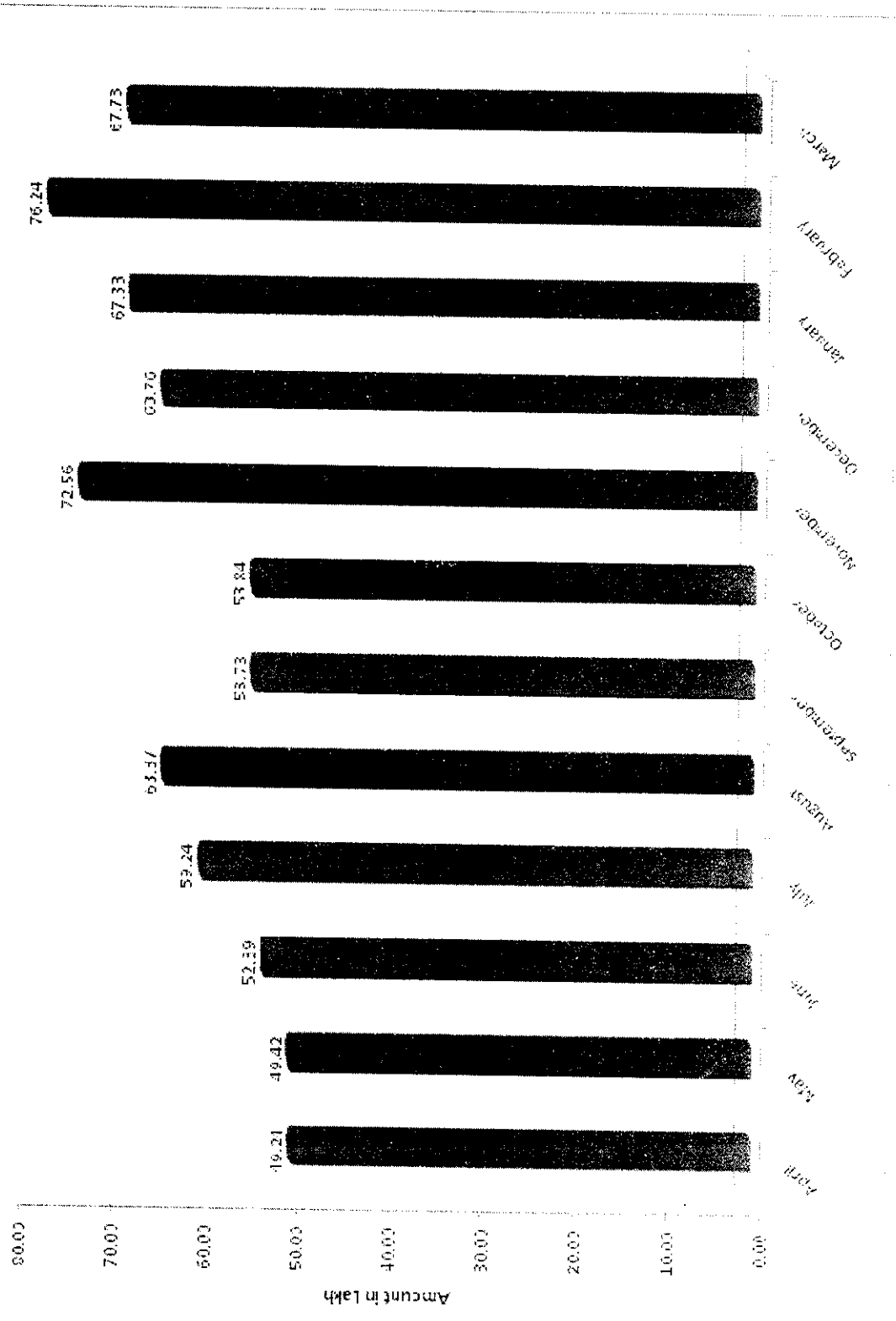


Table 3.2: Monthly Purchase of the financial year 2007 – 08

MONTHLY PURCHASE	2007 – 08
April	39.74
May	46.46
June	49.71
July	55.11
August	51.42
September	52.46
October	59.11
November	49.12
December	44.74
January	48.44
February	55.82
March	46.04
Mean	**49.85**
Standard Deviation	**5.35**
Coefficient of Variance	**10.74**

INTERPRETATION

It is also noticed from the table that there was a high purchase of Rs.59.11 lakh in the month of October 2007 and minimum purchase of Rs.39.74 lakh in the month of April 2008.Purchase is comparatively less than the previous financial year 2006-07 and the purchase is more consistent in 2007-08.

INFERENCE

It is observed from the above table that according to monthly purchase of the financial year 2007 – 08, the mean value is 49.85, standard deviation is 5.35 and coefficient of variance is 10.74.

Chart 2: Monthly Purchase of the financial year 2007 - 08

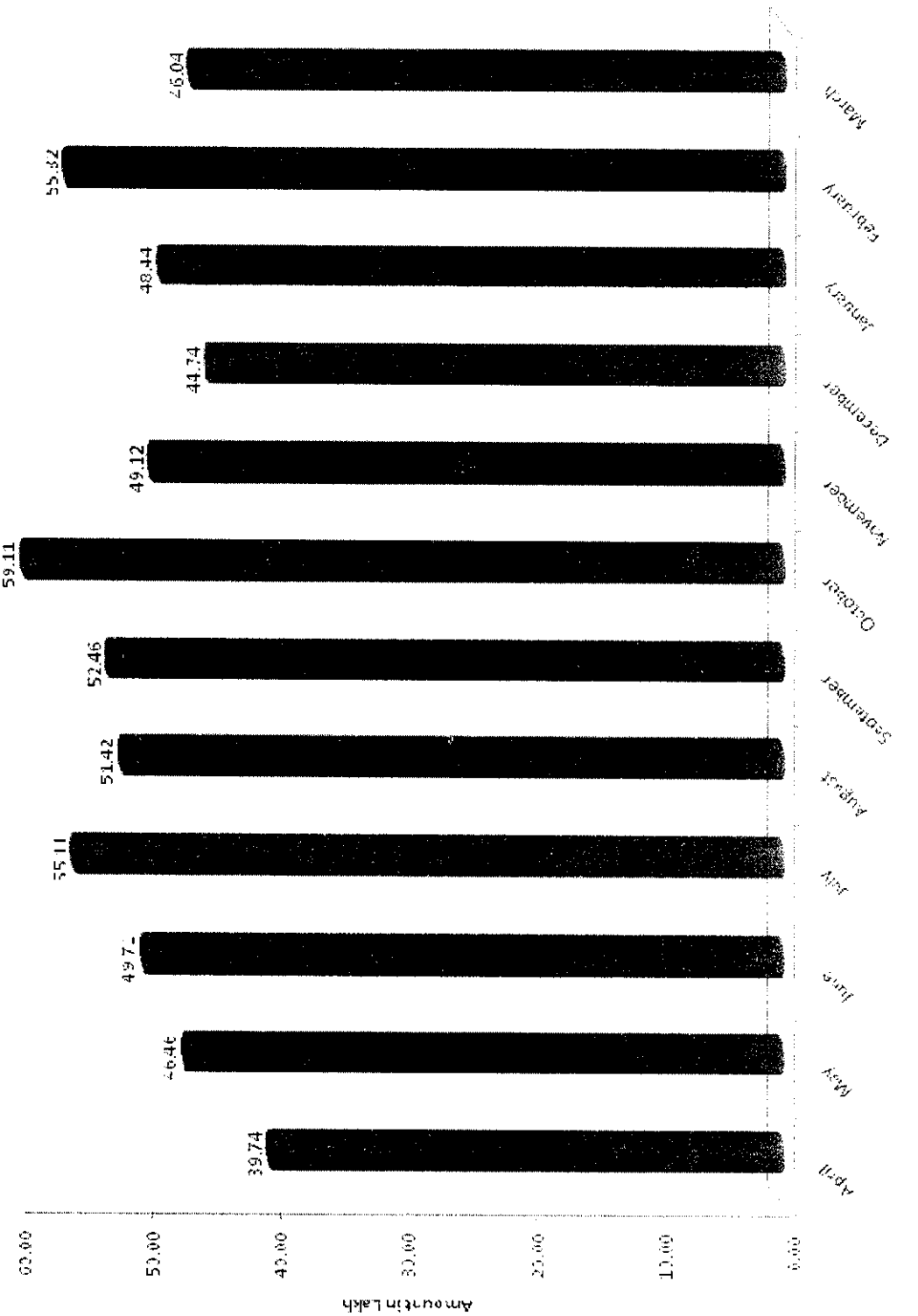


Table 3.3: Monthly Sales of the financial year 2006 – 07

MONTHLY SALES	2006 - 07
April	50.42
May	50.37
June	52.11
July	55.51
August	64.98
September	55.24
October	55.52
November	56.17
December	53.87
January	56.23
February	54.94
March	52.31
Mean	**54.81**
Standard Deviation	**3.84**
Coefficient of Variance	**7.00**

INTERPRERTION

It is also noticed from the above table that there was a high sale of Rs.64.98 lakh in the month of August 2006 and minimum sale of Rs.50.37 lakh in the month of May 2006.

INFERENCE

It is observed from the above table that according to monthly sales of the financial year 2006 – 07, the mean value is 54.81, standard deviation is 3.84 and coefficient of variance is 7.

Figure 3: Monthly Sales of the financial year 2006 - 07

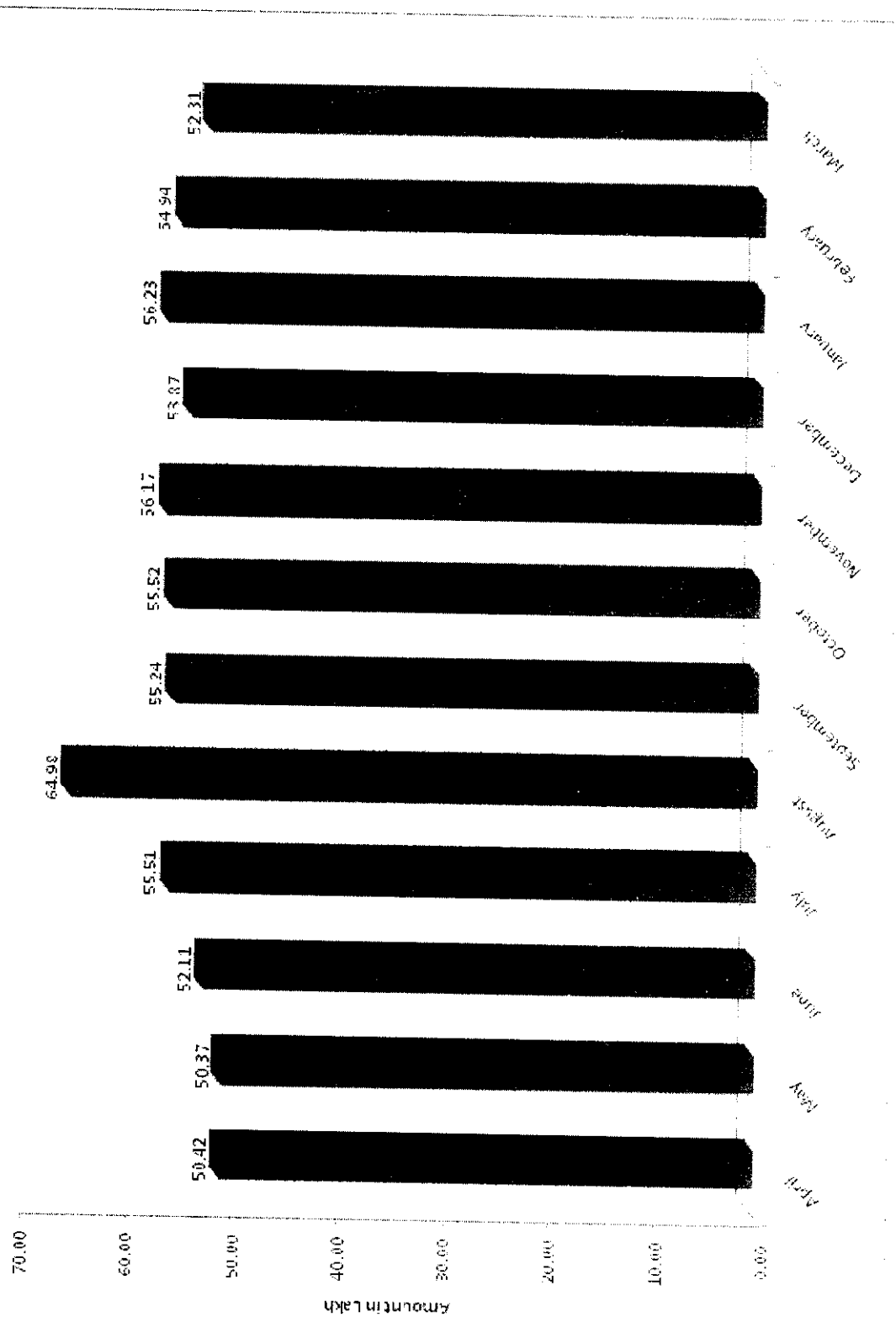


Table 3.4: Monthly Sales of the financial year 2007 – 08

MONTHLY SALES	2007 - 08
April	55.28
May	59.87
June	50.20
July	58.57
August	60.59
September	59.26
October	67.11
November	63.28
December	129.82
January	60.47
February	62.74
March	64.98
Mean	**66.02**
Standard Deviation	**20.57**
Coefficient of Variance	**31.16**

INTERPRETATION

It is also noticed from the table that there was high sale of Rs.129.82 lakh in the month of December 2007 and minimum sale of Rs.50.20 lakh in the month of June 2007.Sales is comparatively higher than the previous financial year 2006-07 and sales is found consistant in 2006-07.

INFERENCE

It is understood from the above table that according to monthly sales of the financial year 2007 – 08, the mean value is 66.02, standard deviation is 20.57 and coefficient of variance is 31.16.

Chart 4: Monthly Sales of the financial year 2007 - 08

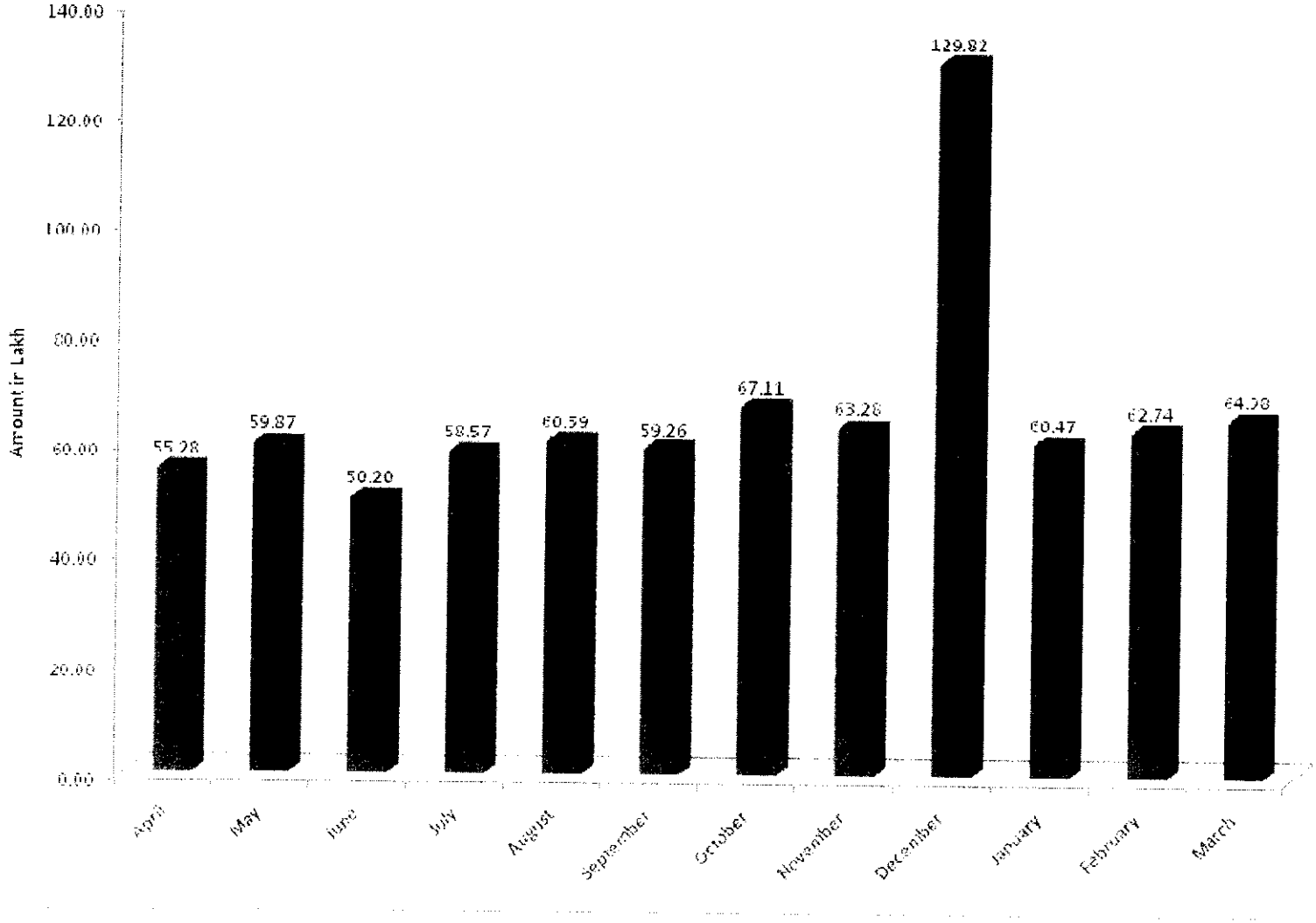


Table 3.5: Monthly Physical Stock of the financial year 2006 – 07

PHYSICAL STOCK	2006 - 07
April	10.01
May	11.27
June	12.93
July	8.01
August	11.41
September	12.51
October	13.55
November	12.74
December	12.28
January	9.16
February	13.36
March	13.17
Mean	**11.69**
Standard Deviation	**1.78**
Coefficient of Variance	**15.22**

INTERPRETATION

It is also noticed from the table that there is a high stock of Rs.13.55 lakh stored in the month of October 2006 and minimum stock Rs.8.01 lakh in the month of July 2006.

INFERENCE

It is inferred from the above table that the summary statistics is calculated for the physical stock of the financial year 2006 – 07. The mean value is 11.69, standard deviation is 1.78 and coefficient of variance is 15.22.

Chart 5: Monthwise Stock of the financial year 2006 - 07

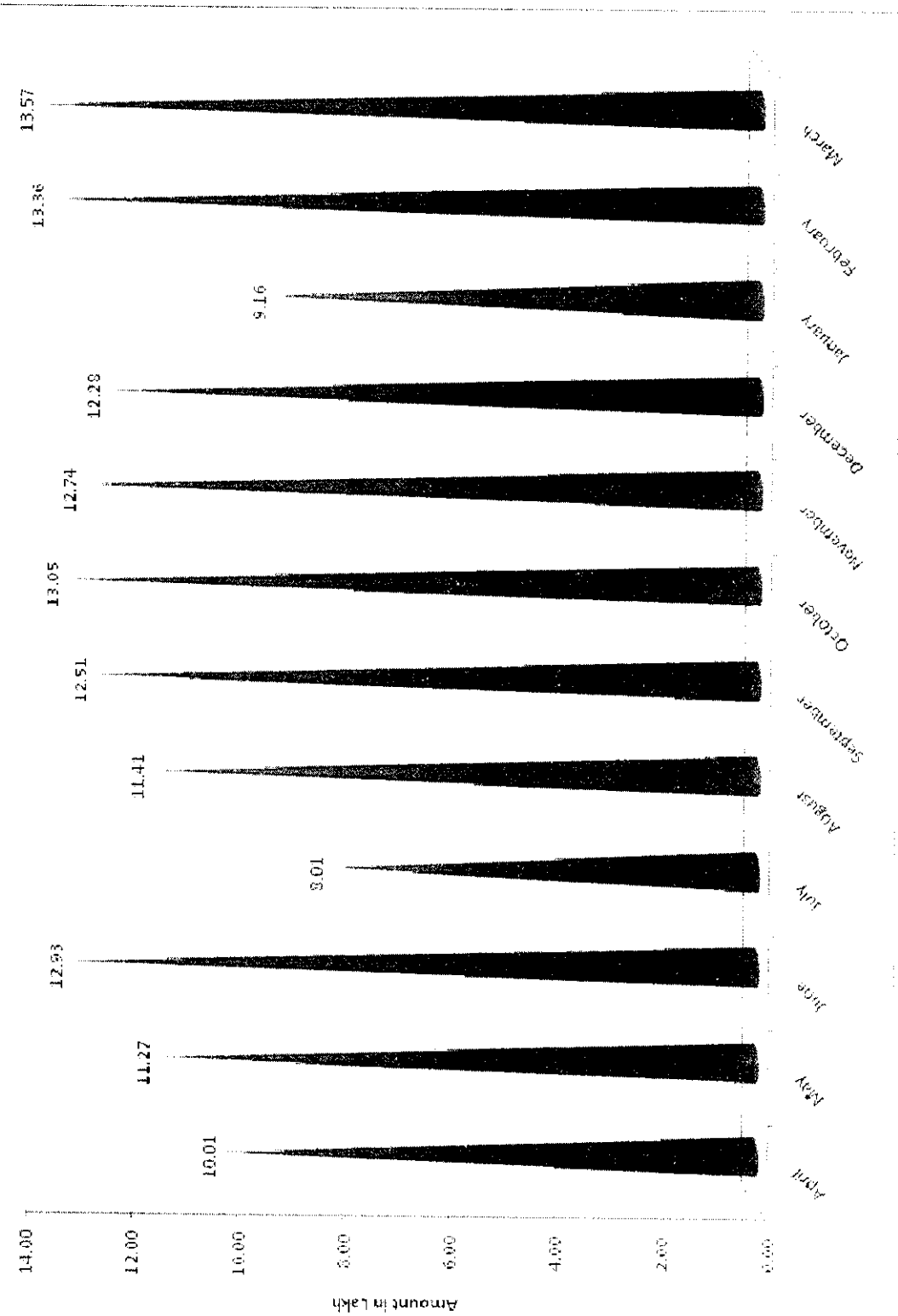


Table 3.6: Monthly Physical Stock of the financial year 2007 – 08

PHYSICAL STOCK	2007 – 08
April	9.35
May	9.44
June	14.89
July	13.48
August	13.67
September	13.09
October	8.01
November	13.50
December	10.12
January	8.00
February	13.37
March	10.17
Mean	**11.42**
Standard Deviation	**2.47**
Coefficient of Variance	**21.60**

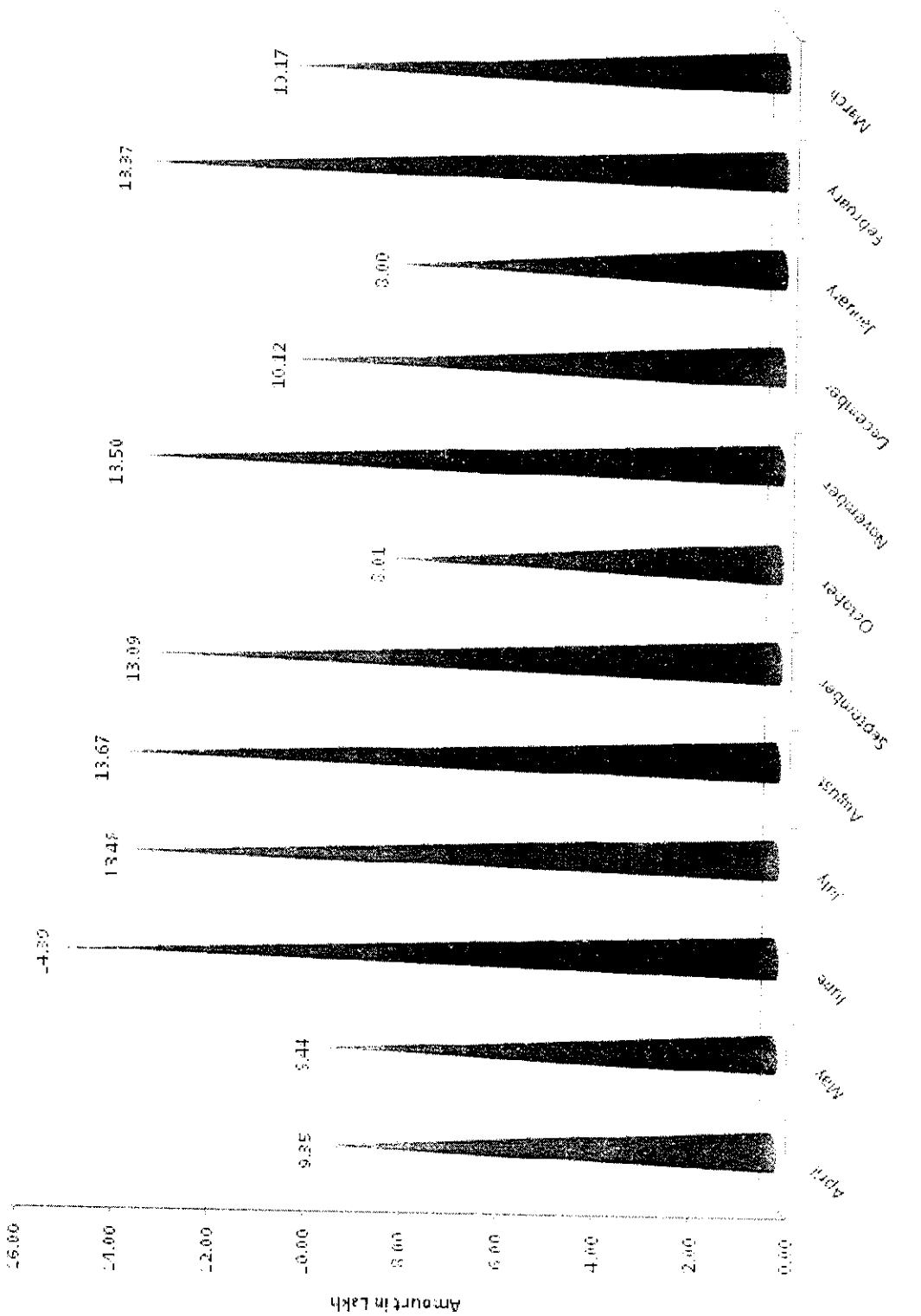
INTERPRETATION

It is also noticed from the table that there is a high stock of Rs.14.89 lakh stored in the month of June 2007 and minimum stock of Rs.8.00 lakh in the month of January 2008.According to the company stock level, the financial year 2007-08 is an optimum stock than the previous year and the physical stock is more consistent in 2006-07.

INFERENCE

It is observed from the above table that the summary statistics is calculated for the physical stock of the financial year 2007 – 08. The mean value is 11.42, standard deviation is 2.47 and coefficient of variance is 21.60.

Chart 6: Monthwise Stock of the financial year 2007 - 08



3.2 PERCENTAGE ANALYSIS

Table 3.7: Area wise Sales of the financial year 2007 - 08

Areas Covered	Sales	Percent
Tirupur	45.30	5.72
Pollachi	60.55	7.64
Mettupalayam	34.94	4.41
Coimbatore	651.39	82.23
Total	**792.18**	**100.00**

INFERENCE

It is clear from the above table that

- 82.23% of sales executed from Coimbatore station
- 7.64% of sales executed from Pollachi
- 5.72% of sales executed from Tirupur
- 4.41% of sales executed from Mettupalayam.

Chart 7: Area wise Sales of the Financial year 2007 - 08

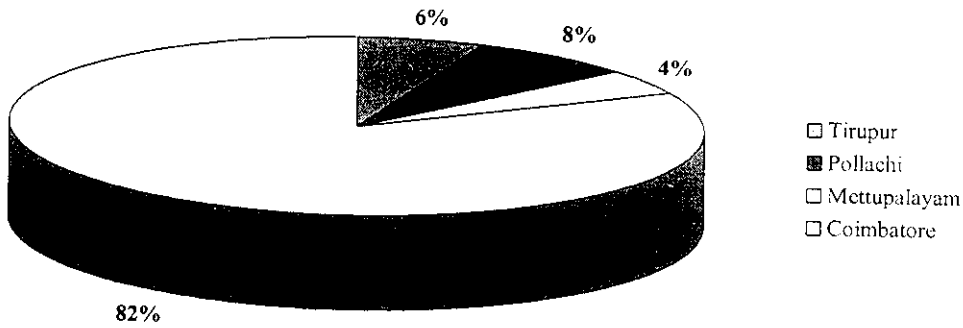


Table 3.8: Expenses made during the financial year 2007 – 08

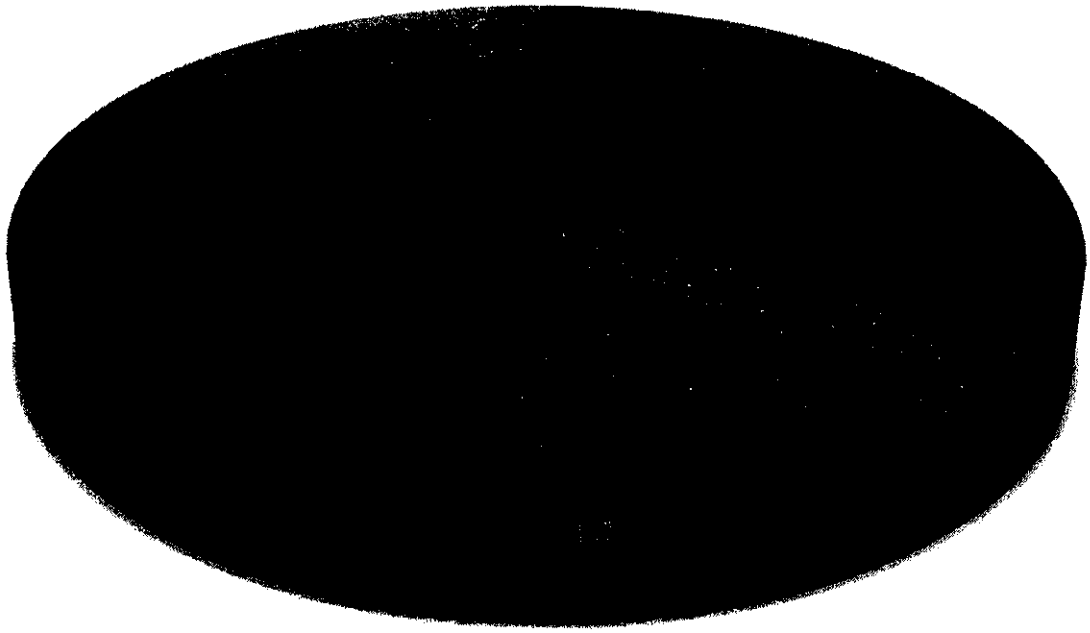
Type of Expenses (Overall)	Amount	Percent
Transport	2.36	10.19
Maintenance	5.42	23.39
Incentives	4.28	18.47
Salary	6.81	29.39
Depot rent	2.49	10.75
Misc Expenses (loading & unloading charges)	1.81	7.81
Total	**23.17**	**100.00**

INFERENCE

It is observed from the above table that according to overall expenses made during the financial year 2007 – 08:

- 29.39% of expenses made for salary
- 23.39% of expenses made for maintenance
- 18.47% of expenses made for incentives
- 10.75% of expenses made for depot rent
- 10.19% of expenses made for transport
- 7.81% of expenses made for miscellaneous expenses like loading and unloading.

Chart 8: Coimbatore Expenses (Overall)



- Transport
- Incentives
- depot rent
- Maintenance
- Salary
- Misc Expenses (loading & unloading charges)

Table 3.9: Projected Expense for Mettupalayam

Type of Expenses (Mettupalayam)	Amount	Percent
Transport	0.68	11.74
Maintenance	0.91	15.72
Incentives	0.36	6.22
Salary	2.40	41.45
depot rent	0.84	14.51
Misc Expenses (loading & unloading charges)	0.60	10.36
Total	**5.79**	**100.00**

INFERENCE

Optimization of cost can be performed in various aspects. In this study it focuses on expenses optimization through decentralized activity. In order to find the effective costing method, we have investigated in the location and made the projected expenses. It is inferred from the above table that

- 41.45% of expenses projected for salary
- 15.72% of expenses for maintenance
- 14.51% of expenses for depot rent
- 11.74% of expenses for transport
- 10.36% of expenses projected for miscellaneous expenses
- 6.22% of expenses is projected for incentives.

Chart 9: Mettupalayam Projected Expenses

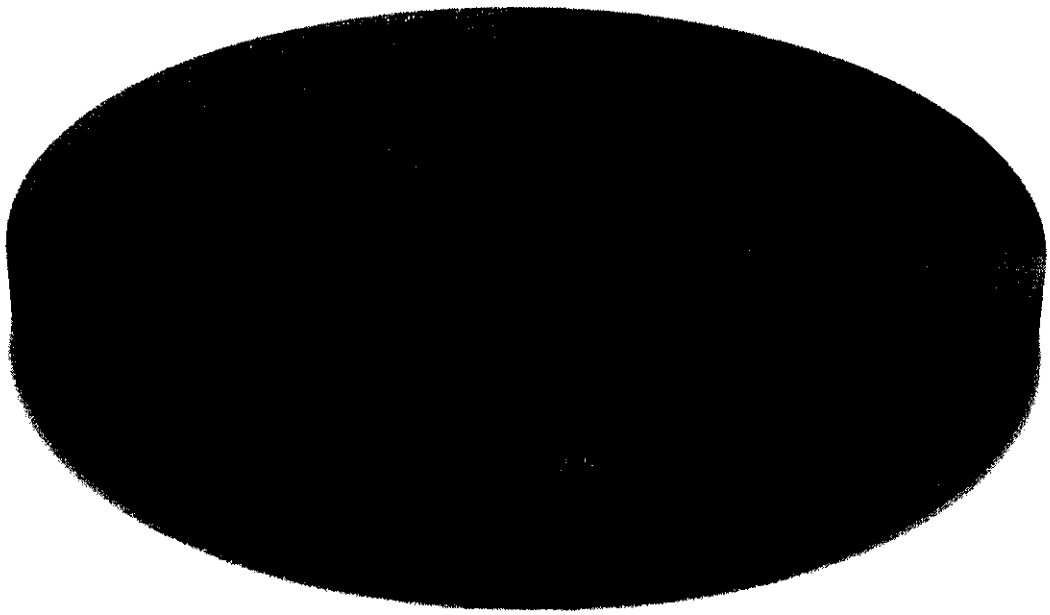


Table 3.10: Projected Expense for Tirupur

Type of Expenses (Tirupur)	Amount	Percent
Transport	1.36	13.48
Maintenance	2.42	23.98
Incentives	1.28	12.69
Salary	1.81	17.94
depot rent	2.49	24.68
Misc Expenses (loading & unloading charges)	0.73	7.23
Total	**10.09**	**100.00**

INFERENCE

It is inferred from the above table that the projected expenses calculated for the area Tirupur

- 24.68% of expenses projected for depot rent
- 23.98% of expenses projected for maintenance
- 17.94% of expenses projected for salary
- 13.48% of expenses projected for transport
- 12.69% of expenses projected for incentives
- 7.23% of expenses projected for miscellaneous expenses.

Chart 10: Tirupur Projected Expenses

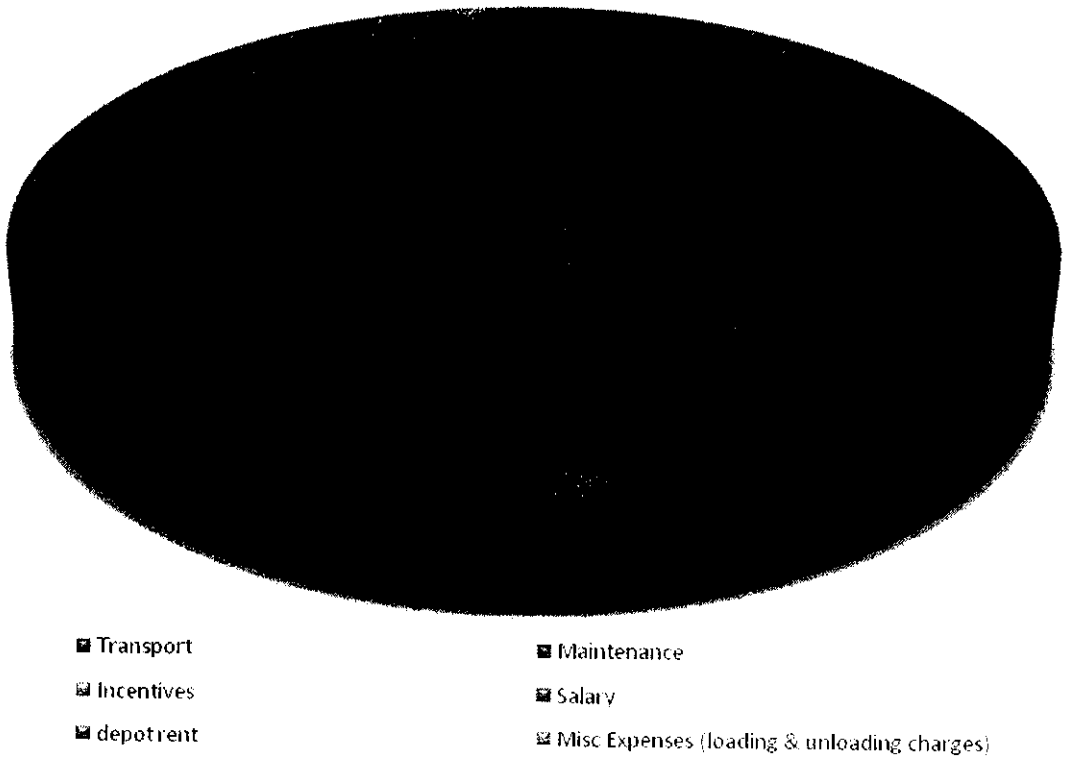


Table 3.11: Projected Expenses for Pollachi

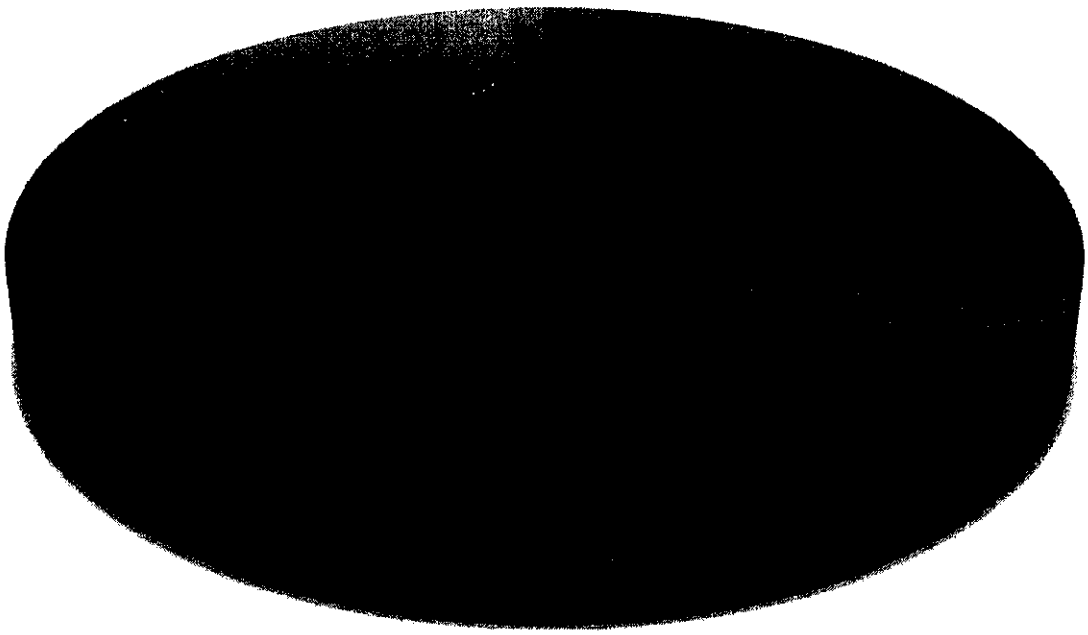
Type of Expenses (Pollachi)	Amount	Percent
Transport	1.23	16.49
Maintenance	1.04	13.94
Incentives	0.66	8.85
Salary	2.80	37.53
depot rent	0.84	11.26
Misc Expenses (loading & unloading charges)	0.89	11.93
Total	**7.46**	**100.00**

INFERENCE

It is understood from the above table that the projected expenses is calculated for the area Pollachi

- 37.53% of expenses projected for salary
- 16.49% of expenses projected for transport
- 13.94% of expenses projected for maintenance
- 11.93% of expenses projected for miscellaneous expenses
- 11.26% of expenses projected for depot rent
- 8.85% of expenses projected for incentives.

Chart 11: Pollachi Projected Expenses



Transport
Maintenance
Incentives
Salary
depot rent
Misc Expenses (loading & unloading charges)

Table 3.12: Type of Expenses for Centralized and Decentralized

Type of Expenses	CENTRALIZED EXPENSES		DECENTRALIZED EXPENSES	
	Amount	Percent	Amount	Percent
Transport	2.36	10.19	3.27	14.01
Maintenance	5.42	23.39	4.37	18.72
Incentives	4.28	18.47	2.3	9.85
Salary	6.81	29.39	7.01	30.03
Depot Rent	2.49	10.75	4.17	17.87
Misc Expenses	1.81	7.81	2.22	9.51
Total	**23.17**	**100.00**	**23.34**	**100.00**

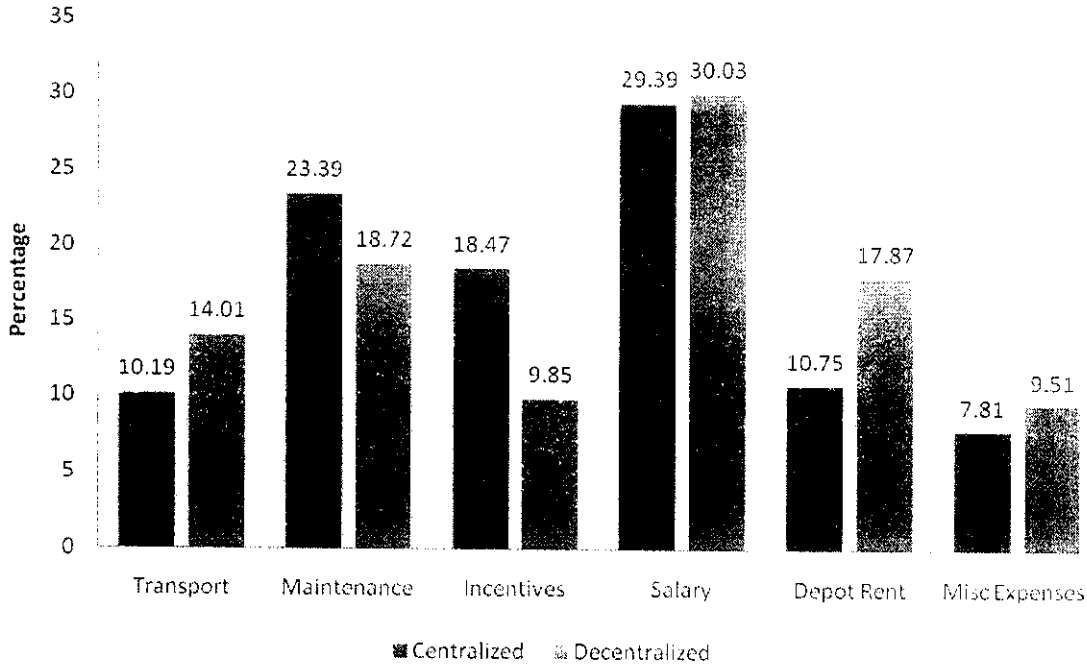
INTERPRETATION

It is inferred from the above table that according to the new decentralization model, 7.12% of expense has raised on depot rent, 3.82% of expense has raised on transport, 1.7% of expense has raised on miscellaneous expense, 0.64% of expense has raised on salary. It is also noticed that 8.62% of expense is reduced on incentives and 4.67% of expense is reduced on maintenance. While noticing the total expenses occurred on centralized distribution is Rs.23.17 lakh and on decentralization distribution is Rs.23.34 lakh, a small increase on the current expenses.

INFERENCE

The proposed decentralization model optimizes the cost on incentives and maintenance.

Chart 12: Centralized and Decentralized Expenses Performance



3.3 PAIRED T-TEST ANALYSIS

Table 3.12: t-TEST – Coimbatore actual vs Area wise projected expenses

Paired Samples Test

		Paired Differences					t	df	ig. (2-tailed
		Mean	td. Deviatio	Std. Erro Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Coimbatore (O - Mettupalayam	2.8967	1.53750	.62768	1.2832	4.5102	4.615	5	.006
Pair 2	Coimbatore (O - Tirupur	2.1800	1.82494	.74503	.2648	4.0952	2.926	5	.033
Pair 3	Coimbatore (O - Pollachi	2.6183	1.55439	.63458	.9871	4.2496	4.126	5	.009

INFERENCE

It is understood from the above table that paired samples t test is performed between the expenses occurred in actual area and projected area. According to

- Coimbatore actual and Mettupalayam, mean value is 2.896, standard deviation is 1.538, t value is 4.615 and p value is 0.006
- Coimbatore actual and Tirupur, mean value is 2.18, standard deviation is 1.82, t value is2.926 and p value is 0.033.
- Coimbatore actual and Pollachi, mean value is 2.62, standard deviation is 1.55, t value is 4.126 and p value is 0.009.

It is also noticed from the above table that all p values are less than 0.05. hence it is significant. So the Coimbatore actual has significant difference with projected areas of all cases.

3.4 STUDENT T TEST

Table 3.13: Coimbatore Actual vs Overall Projected

Group Statistics

	Category	N	Mean	Std. Deviation	Std. Error Mean
Coimbatore (Overall)	Coimbatore Actual	6	3.8617	1.98201	.80915
	Overall Projected	6	3.8900	1.77452	.72444

Independent Samples Test

		evene's Test fc uality of Varianc		t-test for Equality of Means						
									5% Confidenc Interval of the Difference	
		F	Sig.	t	df	g. (2-taile	Mean ifferenc	Std. Erro ifferenc	Lower	Upper
Coimbatore (	Equal varia assumed	.397	.543	-.026	10	.980	-.0283	.08607	44825	39158
	Equal varia not assum			-.026	9.880	.980	-.0283	.08607	45223	39557

INFERENCE

It is inferred from the above table that the Coimbatore actual mean value is 3.86, standard deviation is 1.98 and overall projected mean value is 3.89, standard deviation is 1.77. The t value is -0.026 and p value is 0.980, which is greater than 0.05, means not significant. It is found there is no significant difference between Coimbatore actual and overall projected. The new strategy can be implemented; even initial cost is slightly higher than the actual cost. When it is initiated, the goods or materials can be delivered by supplier the appropriate location. In order to balance the expenses, sales area will be increased. At present nearly 18% of sales is performed in this area and it is found that there is a huge potential market in the rural areas, the implementation of decentralization will helps to overcome all transport related problems, and increase the revenue through sales.

CHAPTER 4

FINDINGS, SUGGESSIONS AND CONCLUSION

CHAPTER – IV
FINDINGS, SUGGESTIONS & CONCLUSION

4.1 FINDINGS

Summary Statistics

- A purchase of an average Rs.60.74 lakh/month is made throughout the financial year 2006-07. There was a high purchase of Rs.72.56 lakh in the month of November 2006 and minimum purchase of Rs.49.24 lakh in the month of April 2006.
- A purchase of an average Rs.49.85 lakh/month is made throughout the financial year 2007-08. There was a high purchase of Rs.59.11 lakh in the month of October 2007 and minimum purchase of Rs.39.74 lakh in the month of April 2008.
- During the financial year 2006 the mean sale of Rs.54.81 lakh per month, there was a high sale of Rs.64.98 lakh in the month of August 2006 and minimum sale of Rs.50.37 lakh in the month of May 2006.
- During the financial year 2007 the mean sale of Rs.66.02 lakh per month, there was high sale of Rs.129.82 lakh in the month of December 2007 and minimum sale of Rs.50.20 lakh in the month of June 2007.
- During the financial year 2006 the mean stock of Rs.11.69 lakh stored per month, there is a high stock of Rs.13.55 lakh stored in the month of October 2006 and minimum stock of Rs.8.01 lakh in the month of July 2006.
- During the financial year 2008 the mean stock of Rs.11.42 lakh stored per month, there is a high stock of Rs.14.89 lakh stored in the month of June 2007 and minimum stock of Rs.8.00 lakh in the month of January 2008.

Percentage Analysis

- 82.23% of sales executed from Coimbatore location.
- According to overall expenses made during 2007-08, major portion of the expenditure is the salary paid to their staff i.e. 29.39%
- The projected expenses for Mettupalayam confirmed the majority 41.45% of expenses may happen for salary.
- The projected expenses for Tirupur confirmed that the majority 24.68% of expenses may occur for depot rent.
- According to projected expenses of Pollachi, the majority 37.53% of expenses may occur for salary to their staffs.

Paired t-test

- Coimbatore actual expenses have significant difference with each projected location in this study.

Student's t-test

- It is found there is no significant difference of overall expenses currently made by the company and decentralized projected expenses.

4.2 SUGGESTIONS

- It is suggested to implement the decentralization of the supply chain management.
- It is also proposed three stations for decentralization. According to their convenient, it can be tested with one particular location.

4.3 CONCLUSION

Cost effectiveness is a primary solution for successful business of chain store. Due to high credit period in market and less credit period from vendor make the distributor tough to do their business. The cost effectiveness can be achieved through various levels such as inventory and reduce of the expenses. This study applied the cost effectiveness strategy through supply chain management and decentralization of the current unit. The new strategy can be implemented; even initial cost is slightly higher than the actual cost. When it is initiated, the goods or materials can be delivered by the supplier at the appropriate location. In order to balance the expenses, sales of the area will be increased. At present nearly 18% of sales is performed in this area, and it is found that there is a huge potential market in the rural area, the implementation of decentralization will helps to overcome all transport related problems, and increase the revenue through sales.

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