P-2790

AN EXPLORATORY STUDY ON JAPANESE TQM MODEL DRIVEN PERFORMANCE MANAGEMENT SYSTEM FOR MIDDLE MANAGEMENT IN MALLADI DRUGS AND PHARMACEUTICAL LTD, CHENNAI.

A PROJECT REPORT
submitted by

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Reg. No. 0720400045

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

of

MASTER OF BUSINESS ADMINISTRATION

April, 2009

KCT Business School
Department of Management Studies
Kumaraguru College of Technology
(An autonomous institution affiliated to Anna University, Coimbatore)
Coimbatore-641 006

CERTIFICATE

MALLADI DRUGS & PHARMACEUTICALS LIMITE

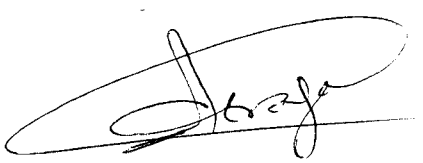
MDPL

16 April 2009

PROJECT COMPLETION CERTIFICATE

This is to certify that Ms **K.Shruthi** Roll No. 07 MBA 45 a student of KCT Business School, Kumaraguru college of Technology, Coimbatore had undergone a project entitled **An exploratory study on Japanese TQM model - driven performance management system'** between 19.01.09 (date of joining) and 10.04.09 (date of leaving).

During the tenure, her performance was **Very Good**.



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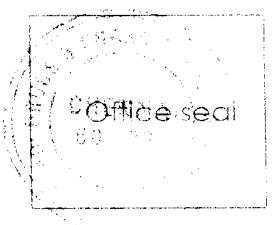

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BONAFIDE CERTIFICATE

Certified that this project report titled "An Exploratory Study On Japanese TQM Model Driven Performance Management System For Middle Management", with reference to Malladi Drugs and Pharmaceutical Ltd, Chennai is the Bonafide work of Ms. K.SHRUTHI (Reg No. 720400045) who carried out this 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.

Faculty Guide

Director

Evaluated and Viva Voce conducted on 05.05.09

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DECLARATION

DECLARATION

I, hereby declare that this project report entitled as "An Exploratory study on Japanese TQM model driven performance management system for Middle Management", with reference to Malladi drugs and pharmaceuticals Ltd., Chennai, has undertaken for academic purpose submitted to Anna University, Coimbatore in partial fulfillment of requirement 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 Hema Nalini.R, Lecturer, MBA Department during the academic year 2007-2008.

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

Date: 02.05.09

K. SHRUTHI

Place: Coimbatore

(K.SHRUTHI)

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

It is inevitable that thoughts and ideas of other people tend to drift into subconscious when one feels to acknowledge helping derived from others. I acknowledge to all those who helped me in the preparation of this project work.

I wish to express my sincere thanks to **Dr.C.Ramasamy**, President, Kumaraguru College of Technology for the facilities provided to complete my project work.

I wish to express my deep gratitude to **Dr.Joseph V. Thanikal** Principal, Kumaraguru College of Technology for the facilities provided to complete my project work.

I wish to express my sincere thanks to **DR.S.V.Devanathan** – Director, KCT Business School, for his continuous encouragement throughout my project.

I owe my heartfelt gratitude to **Mrs. R.Hema Nalini**, Lecturer KCT Business School, for his help and valuable guidance given to me throughout my project.

I also extend my heartfelt thanks to all the faculty members of KCT Business school, for their support in completing my project.

I like to extend my heartfelt thanks to **Mr. B.Anthony Thiagarajan**,General manager–HR, Malladi Drugs & pharmaceuticals Ltd., who guided me to complete my project work.

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ABSTRACT

ABSTRACT

Performance management is the process of planning performance, appraising performance, giving its feedback, and counseling an employee to improve his performance. Performance management is more comprehensive than performance appraisal, though latter is the key ingredient of the former. Besides performance appraisal, performance management involves performance planning and providing feedback and counseling to employees to improve their performance. In this the entire activities are linked with organizational objectives and strategies to achieve these objectives.

This project titled "An Exploratory study on Japanese TQM Model Driven Performance Management System for Middle Management". The main of the project is to study the effectiveness of Japanese TQM model and to map the gap between the deming standards and the real practice in the organization.
The questionnaire was prepared taking into account the leadership factors, cost reduction factors and business performance factors. A effective questionnaire was developed with the help of organizational guide and other sources, then it was administered to the respondents and data was collected.

After collection of data it was rated using appropriate statistical tools like percentage analysis, chi-square analysis, ANOVA, factor analysis and regression. From the analysis we found that leadership contributes more to overall TQM implementation in the organization. TQM implementation helps to develop an structured system for exceeding customer expectations and system that empowers employees and this will help the organization to achieve greater heights.

INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 ABOUT THE STUDY

Performance management helps organizations achieve their strategic goals. Rather than discarding the data accessibility previous systems fostered, performance management harnesses it to help ensure that an organization's data works in service to organizational goals to provide information that is actually useful in achieving them and focus on the Operational Networking Processes between that performance level. The main purpose of performance management is to link individual objectives and organisational objectives and bring about that individuals obey important worth for enterprise. Additionally, performance management tries to develop skills of people to achieve their capability to satisfy their ambitiousness and also increase profit of a firm.

Performance management is closely connected to Performance measurement. They are sometimes mistaken for each other. In careful usage, Performance Management is the larger domain and includes Performance Measurement as a component:

Performance measurement is the process of assessing progress toward achieving predetermined goals.

Performance management is building on that process, adding the relevant communication and action on the progress achieved against these predetermined goals.

1.1.1 Types

- In network performance management, (a) a set of functions that evaluate and report the behavior of telecommunications equipment and the effectiveness of the network or network element and (b) a set of various subfunctions, such as gathering statistical information, maintaining and examining historical logs,

determining system performance under natural and artificial conditions, and altering system modes of operation.

- In organizational development (OD), **performance** can be thought of as Actual Results vs Desired Results. Any discrepancy, where Actual is less than Desired, could constitute the performance improvement zone. Performance management and improvement can be thought of as a cycle:

1. *Performance planning* where goals and objectives are established
2. *Performance coaching* where a manager intervenes to give feedback and adjust performance
3. *Performance appraisal* where individual performance is formally documented and feedback delivered

A performance problem is any gap between Desired Results and Actual Results. Performance improvement is any effort targeted at closing the gap between Actual Results and Desired Results.

Other organizational development definitions are slightly different. The US Government's Office of Personnel Management indicates that Performance Management consists of a system or process whereby:

1. Work is planned and expectations are set
2. Performance of work is monitored
3. Staff ability to perform is developed and enhanced
4. Performance is rated or measured and the ratings summarized
5. Top performance is rewarded

- Application Performance Management (APM) refers to the discipline within systems management that focuses on monitoring and managing the performance and availability of software applications. APM can be defined as workflow and related IT tools deployed to detect, diagnose, remedy and report on application performance issues to ensure that application performance meets or exceeds end-users' and businesses' expectations.

- Business performance management (BPM) is a set of processes that help businesses discover efficient use of their business units, financial, human and material resources.
- Operational performance management (OPM) focus is on creating methodical and predictable ways to improve business results, or performance, across organizations.
- Integrated business planning (IBP) refers to the technologies, applications and processes of connecting the planning function across the enterprise to improve organizational alignment and financial performance.
- Project Performance Management is a sub-discipline of Project Management that seeks to establish measurements of project performance, such as technical performance, schedule performance and/or cost performance, and seeks to use such measurements to inform project stakeholders, lead the project team and improve project performance. Earned Value Management is notable method of Project Performance Management.
- Business Transaction Management (BTM) refers to the discipline within systems management that monitors business transactions across the datacenter in order to manage IT performance

1.1.2 Benefits

Managing employees performance facilitates the effective delivery of sales incentive plans. There is a clear and immediate correlation between using performance management programs or software and improved sales results.

Using integrated software, rather than a spreadsheet based recording system, may deliver a significant return on investment through a range of direct and indirect sales benefits, as well as significant administrative and overpayments savings as follows:[4]

Direct financial gains

- Grow Sales
- Eliminates over-payments

- Saves time and automates processes
- Accommodates plan changes

Motivated sales force

- Optimises incentive plans
- On-time reporting and payments
- Controlled data distribution data
- Visible calculations
- High confidence in payment accuracy
- Sells program, improves engagement

Improved management control

- Flexible, responsive to management needs
- Displays data relationships
- Easy to trace data calculations
- Helps audit / comply with legislative requirements
- Simple scenario planning
- Provides process documentation

1.1.3 FOUR KEY BENEFITS OF PERFORMANCE MANAGEMENT:

1. PM focuses on results rather than behaviors and activities.

   A common misconception among supervisors is that behaviors and activities are the same as results. Thus, an employee may appear extremely busy, but not be contributing at all toward the goals of the organization. An example is the employee who manually reviews completion of every form and procedure, rather than supporting automation of the review. The supervisor may conclude the employee is very committed to the organization and works very hard, thus, deserving a very high performance rating.

2. Aligns organizational activities and process to the goals of the organization.

   PM identifies organizational goals, results needed to achieve those goals, measures of effectiveness or efficiency (outcomes) toward the goals, and means (drivers) to achieve the goals. This chain of measurements is examined to ensure alignment with overall results of the organization.

3. Cultivates a system-wide, long term view of the organization.

   Richard A. Swanson, in *Performance Improvement Theory and Practice* (Advances in Developing Human Resources, 1, 1999), explains an effective performance improvement process must follow a systems-based approach while looking at outcomes and drivers. Otherwise, the effort produces a flawed picture. For example, laying off people will likely produce short-term profits. However, the organization may eventually experience reduced productivity, resulting in long-term profit loss.

4. Produces meaningful measurements.

   These measurements have a wide variety of useful applications. They are useful in benchmarking, or setting standards for comparison with best practices in other organizations. They provide consistent basis for comparison during internal change efforts. They indicate results during improvement efforts, such as employee training, management development, quality programs, etc. They help ensure equitable and fair treatment to employees based on performance.

1.1.4 15 Other Benefits of Performance Management

1. Helps you think about what results you really want. You're forced to be accountable, to "put a stake in the ground".

2. Depersonalizes issues. Supervisor's focus on behaviors and results, rather than personalities.

3. Validates expectations. In today's age of high expectations when organizations are striving to transform themselves and society, having measurable results can verify whether grand visions are realistic or not.

4. Helps ensure equitable treatment of employees because appraisals are based on results.

5. Optimizes operations in the organization because goals and results are more closely aligned.

6. Cultivates a change in perspective from activities to results.

7. Performance reviews are focused on contributions to the organizational goals, e.g., forms include the question "What organizational goal were contributed to and how?"

8. Supports ongoing communication, feedback and dialogue about organizational goals. Also supports communication between employee and supervisor.

9. Performance is seen as an ongoing process, rather than a one-time, shapshot event.

10. Provokes focus on the needs of customers, whether internal or external.

11. Cultivates a systems perspective, that is, focus on the relationships and exchanges between subsystems, e.g., departments, processes, teams and employees. Accordingly, personnel focus on patterns and themes in the organization, rather than specific events.

12. Continuing focus and analysis on results helps to correct several myths, e.g., "learning means results", "job satisfaction produces productivity", etc.

13. Produces specificity in commitments and resources.

14. Provides specificity for comparisons, direction and planning.

15. Redirects attention from bottom-up approaches (e.g., doing job descriptions, performance reviews, etc., first and then "rolling up" results to the top of the organization) to top-down approaches (e.g., ensuring all subsystem goals and results are aligned first with the organization's overall goals and results)

1.1.5 TOTAL QUALITY MANAGEMENT:

The history of TQM starts with Elton Mayo's Hawthorne experiements from 1927 through 1932. These experiments showed that workers participation in decision making improves productivity. In the 1930s, the Hawthorne plant of the Western Electric Company studied lighting levels, workday lengths, and rest period lengths to maximize productivity. During the lighting level studies, researchers found that when the lights were brighter, worker productivity increased. However when lighting level was decreased worker productivity also increased. This change in behavior from the employees is now called the Hawthorne effect. It basically states that when workers are involved in studies or decision making, productivity increases. Also during the 1930s, Walter Shewhart developed control charts. which are a statistical method to control processes.

In the 1950s Edward Deming taught statistical methods and Dr Juran taught quality management techniques to the Japanese.

Armand Feigenbaun wrote Total Quality Control. This became the first work that started many Total Quality Management theories.

In 1954 Abraham Maslow created a pyramid of self actualization needs. In terms of work productivity, the lower levels of needs must be met prior to employees performing at higher levels. The needs in order are

1. Physiological which is to eat, sleep, and have shelter
2. Safety which is to have economic and physical security
3. Belonging which is to be accepted by family and friends
4. Esteem which is to be held in high regard

5. Self actualization which is to achieves ones best
6. In the 1960s Douglas McGregor formed the Theory X and Theory Y leadership models.
7. A Theory X leader applies a negative approach to management. They assume most workers really do not like to work and try to avoid work.
8. A Theory Y leader believes workers want to do a good job. They believe workers will offer solutions to problems and participate in problem solving events. An involved employee is a productive employee.

In the 1990s' TQM evolved. Experts introduce new methods that supported TQM. These include Lean Manufacturing and Six Sigma. Organizations could now become certified to ISO 9001 The Malcom Baldridge National Quality Award (MBNQA) was created for the US. MBNQA auditors give this award to companies who show the most outstanding quality management practices.

In the 2000s, ISO revised ISO 9001 to focus more on business planning, quality management and continuous improvement. Other certification standards were created including AS9100 for aerospace, TS16949 for automotive, ISO 14001 for environmental, TL9000 for electronics, and ISO 17025 for laboratories. These standards all include the ISO 9001 elements.

Key Concepts of Total Quality Management include

- structured system for exceeding customer expectations
- system that empowers employees
- drives higher profits
- drives lower costs
- continuous improvement.
- management centered approach on improving quality.

Benefits of TQM include

- Improves competitive position
- increase adaptability to global markets
- elevated productivity
- superior global image
- eliminates defects
- significantly reduces waste.
- reduces quality costs
- Improves management communication
- raises profits
- drives customer focus
- customer loyalty

1.1.6 W. EDWARDS DEMING:(1900-1993). THE FATHER OF MODERN QUALITY:

To achieve this level of performance requires more than a good philosophy - the organization must change its behavior and adopt new ways of doing business. This is what Dr. Deming preached to the Japanese in 1950, and in the 1980s and 90s until his death, in America. Deming's approach were amply summed up in his famous 14 Points. These exhort management to rational action instead of merely sloganizing quality and blaming workers for issues beyond the workers' control. We call this "walking the talk." Deming formulated this into his System of Profound Knowledge™ by which management could change itself only with a view from the outside; the system cannot understand itself.

Deming based much of his work on earlier work done by Walter Shewhart on statistical quality control (SQC). Shewhart is considered the father of quality control. SQC uses control charts to identify and control sources of variation in manufacturing processes. In TQM, we apply the principles of controlling the quality of machine-based factory operations to controlling the quality of people-based management operations. The principles we will learn are:

- Variation is inherent in all processes - mechanical and human.
- The Plan-Do-Study-Act (PDSA) cycle developed by Dr. Walter Shewhart helps us manage the effects of variation. This is the scientific method applied to problem solving which has us plan and test our improvements, make adjustments, and then standardize them to prevent recurrence. PDSA or PDCA (check) is fundamental to TQM.
- To do PDSA, we must collect data relevant to the process and understand what this data means.
- Understanding this data helps prioritize and direct improvement.
- Improvement increases stakeholder (shareholder, employee, customer, community) satisfaction both now and in the future.

1.1.7 DEMING AWARD:

The Deming prize, established in December 1950 in honor of W. Edwards Deming, was originally designed to reward Japanese companies for major advances in quality improvement. Over the years it has grown, under the guidance of Japanese Union of Scientists and Engineers (JUSE) to where it is now also available to non-Japanese companies, albeit usually operating in Japan, and also to individuals recognized as having made major contributions to the advancement of quality. The awards ceremony is broadcast every year in Japan on national television.

Two categories of awards are made annually, the Deming Prize for Individuals and the Deming Application Prize.

Winners of individual award

- 1951: Motosaburo Masuyama

- ... 1952 to Present

Winners of application prize

- 1951:
  - Fuji Iron & Steel Co., Ltd. (now part of Nippon Steel)
  - Showa Denko K.K.
  - Tanabe Seiyaku Co., Ltd.
  - Yawata Iron & Steel Co., Ltd (now part of Nippon Steel)

2001: Sundram Brake Linings, the world's first friction material company to win.

2006: Sanden International (Singapore) Pte Ltd (SIS), the first Singapore-based company to win.

2008: Tata Steel is the first integrated steel plant in Asia to win Deming award in 2008.

1.2 About the Industry

1.2.1 Indian Pharmaceutical Industry: An Overview

"The Indian pharmaceutical industry

is a success story providing employment for millions and ensuring that essential drugs at affordable prices are available to the vast population of this sub-continent."

-Richard Gerster

The **Indian Pharmaceutical Industry** today is in the front rank of India's science-based industries with wide ranging capabilities in the complex field of drug manufacture and technology. A highly organized sector, the Indian Pharma Industry is estimated to be worth $ 4.5 billion, growing at about 8 to 9 percent annually. It ranks very high in the third world, in terms of technology, quality and range of medicines manufactured. From simple headache pills to sophisticated antibiotics and complex cardiac compounds, almost every type of medicine is now made indigenously.

Playing a key role in promoting and sustaining development in the vital field of medicines, **Indian Pharma Industry** boasts of quality producers and many units approved by regulatory authorities in USA and UK.The Indian Pharmaceutical sector is highly fragmented with more than 20,000 registered units. It has expanded drastically in the last two decades. The leading 250 pharmaceutical companies control 70% of the market with market leader holding nearly 7% of the market share.

The pharmaceutical industry in India meets around 70% of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulations, chemicals, tablets, capsules, orals and injectibles. There are about 250 large units and about 8000 Small Scale Units, which form the core of the pharmaceutical industry in India (including 5 Central Public Sector Units). Following the de-licensing of the pharmaceutical industry, industrial licensing for most of the drugs and pharmaceutical products has been done away with. Manufacturers are free to produce any drug duly approved by

the Drug Control Authority. Technologically strong and totally self-reliant, the pharmaceutical industry in India has low costs of production, low R&D costs, innovative scientific manpower, strength of national laboratories and an increasing balance of trade.

1.2.2 Origins and Evolution

The modern pharmaceutical industry is a highly competitive non-assembled global industry. Its origins can be traced back to the nascent chemical industry of the late nineteenth century in the Upper Rhine Valley near Basel, Switzerland when dyestuffs were found to have antiseptic properties. A host of modern pharmaceutical companies all started out as Rhine-based family dyestuff and chemical companies e.g. Hoffman-La Roche, Sandoz, Ciba-Geigy (the product of a merger between Ciba and Geigy), Novartis etc. Most are still going strong today. Over time many of these chemical companies moved into the production of pharmaceuticals and other synthetic chemicals and they gradually evolved into global players. The introduction and success of penicillin in the early forties and the relative success of other innovative drugs, institutionalized research and development (R&D) efforts in the industry. The industry expanded rapidly in the sixties, benefiting from new discoveries and a lax regulatory environment. During this period healthcare spending boomed as global economies prospered.

The industry witnessed major developments in the seventies with the introduction of tighter regulatory controls, especially with the introduction of regulations governing the manufacture of 'generics'. The new regulations revoked permanent patents and established fixed periods on patent protection for branded products, a result of which the market for 'branded generics' emerged.

Competent workforce: India has a pool of personnel with high managerial and technical competence as also skilled workforce. It has an educated work force and English is commonly used. Professional services are easily available.

Cost-effective chemical synthesis: Its track record of development, particularly in the area of improved cost-beneficial chemical synthesis for various drug molecules is excellent. It provides a wide variety of bulk drugs and exports sophisticated bulk drugs.

Globalisation: The country is committed to a free market economy and globalization. Above all, it has a 70 million middle class market, which is continuously growing.

1.2.3 THE GROWTH SCENARIO

India's US$ 3.1 billion pharmaceutical industry is growing at the rate of 14 percent per year. It is one of the largest and most advanced among the developing countries. Over 20,000 registered pharmaceutical manufacturers exist in the country. The domestic pharmaceuticals industry output is expected to exceed Rs260 billion in the financial year 2002, which accounts for merely 1.3% of the global pharmaceutical sector. Of this, bulk drugs will account for Rs 54 bn (21%) and formulations, the remaining Rs 210 bn (79%). In financial year 2001, imports were Rs 20 bn while exports were Rs.87 bn.

1.2.4 STEPS TO STRENGTHEN THE INDUSTRY

Indian companies need to attain the right product-mix for sustained future growth. Core competencies will play an important role in determining the future of many Indian pharmaceutical companies in the post product-patent regime after 2005. Indian companies, in an effort to consolidate their position, will have to increasingly look at merger and acquisition options of either companies or products. Research and development has always taken the back seat amongst Indian pharmaceutical companies. In order to stay competitive in the future, Indian companies will have to refocus and invest heavily on R&D.

The Indian pharmaceutical industry also needs to take advantage of the recent advances in biotechnology and information technology. The future of the industry will be determined by how well it markets its products to several regions and distributes

risks, its forward and backward integration capabilities, its R&D, its consolidation through mergers and acquisitions, co-marketing and licensing agreements.

1.2.5 Pharmaceutical Industry Trend

The Pharmaceutical Industry is normally seen as a profit earning industry. The Pharmaceutical Industry Trend is positive and a growing one.

Some Information about Recent Pharmaceutical Industry Trend

- In the year 2006, for the first time in the history of pharmaceutical industry, the spending done on prescribed drugs touched $600 billion. This amount is significant because the growth has reached this far in spite of the growth rate in North America and Europe being on the slower side.

- Prescription Medicines have reached an amount of $602 billion with a rise of 7 percent worldwide according to some major pharmaceutical and medical information companies.Statistics show that US has the highest selling pharmaceutical market and a positive Pharmaceutical Industry Trend with more than $252 billion annual sale. The sale has increased around 5.7 percent annually.

1.2.6 Information About Pharmaceutical Market Trend in Some Leading Countries in The World:

- The Indian Pharmaceutical Industry Trend with an annual growth rate of 20 percent is also one of the positive markets in the world. The Indian Pharmaceutical Market is evolving as one of the major Industries in the world with its huge market , a great availability of skilled labors and improved laboratories.

- Alongside India, the Chinese Pharmaceutical market also has a positive trend in progress. The Chinese Pharmaceutical Market Trend has remained positive for the last 15-20 years since the time China started using drugs that are used worldwide. The Chinese Pharmaceutical Industry growth in the last few years have remained nearly10 percent.

- American Pharmaceutical Industry is the biggest in the world with sales around $250 billion. The American Pharmaceutical Industry Trend has remained positive throughout and by the end of last year, it was around 6 percent.

It can be seen that most of the Pharmaceutical Industry Trends are on a positive note. It is expected to be there with the growing health consciousness among the people allover the world.

1.2.7 Indian Pharmaceutical Sector: Current Scenario

According to the Economic Survey (2006-07), the pharmaceuticals industry had achieved a turnover of about US$ 12 billion in 2005-06, and is expected to grow by 13% in 2007. Its pharma export value reached about US$ 4.7 billion during 2005-06.

Pharmaceutical industry accounts for about 2.91% of total FDI into the country. The FDI in pharmaceutical sector is estimated to have touched US$ 172 million, thereby showing a compounded annual growth rate of about 62.6%. Drugs and pharmaceuticals sector is at 8th rank in India's top 10 FDI attracting sectors. According to the Economic Survey for the year 2006-07, the value of pharma output has increased ten times over the last 15 years.

From Rs. 50 billion in 1990 it has grown to Rs.550 billion (US$ 12 billion) in 2005-06. Driven by growing number of pharmaceutical units, increased knowledge skills, improved quality and increasing national as well as international demand, India is now recognized as a leading global pharma player.

The Indian Pharmaceutical Industry is capable to meet the country's demand for every drug. The manufaturing units within the country are meeting about 80% of the country's drug requirements. The drug production sector is equipped with technology and researched knowledge base. The industry produces drugs worth rupees 18000 crores and is growing at 9 per cent every year. It offers quality products with internationally accepted quality standards. There are about 20,000 production units in India with products sold at competitive lower prices than international drug prices.

India has various competitive advantages in Pharma production over western world. It has a large pool of educated manpower with technical and managerial skills.

It has a well-developed research and development base equipped with advanced technology. Low cost of research over the Western countries gives India a potential advantage for future developments. The country has an open market policy where foreign capital investment is permitted. Restriction on capital investment has been removed in the recent years with a view to make new investments profitable. Also, the country has a strong legal framework, an essential for pharmaceutical industry. The most promising fact about India is a 70 million middle class population with good consumption power.

1.2.8 Indian Pharmaceutical Sector: Future Scenario

The dream of Indian pharmaceutical companies for marking their presence globally and competing with the pharmaceutical companies from the developed countries like Europe, Japan, and United States is now coming true.

The new patent regime has led many multinational pharmaceutical companies to look at India as an attractive destination not only for R&D but also for contract manufacturing, conduct of clinical trials and generic drug research. With market value of about US$ 45billion in 2005, the generic sector is expected to grow to US$ 100billion in the next few years.

1.3 ABOUT THE COMPANY

INTRODUCTION:

Malladi Drugs and Pharmaceuticals Ltd is a quality focused, leading manufacturer of Active pharmaceutical ingredients(API), based out of Chennai, India. Malladi is armed with a strong portfolio of innovative healthcare products, supported by its in-house research & development.

1980:Founded by M.L.N. Sastry, a pioneering microbiologist with expertise in fermentation technology.

1982:Became the first company in India to manufacture Ephedrine & pseudophedrine salts through a fully indigenous process.

1985:Received the ICMA PC ray award for indigenous technology development.

1989:Became an export focused company; products being sold to more than 60 countries globally.

1991:Two new API plants established in Ranipet, India.

1992:Department of science & technology, India award for R & D efforts in industry.

1999:Third API facility established in Tirupati, India.

2001:First US FDA inspection for API plant in Ranipet, India.

2005:Acquired Novus Fine Chemicals, USA to become the first Indian company to acquire an API facility in USA.

2005:Acquired Tantec Agro Chemicals in India to expand capacity and to offer pharmaceutical intermediates.

2008:Established a lab in Hyderabad to focus on the personal cares segment.

2008:Acquired ProVentus Life Sciences to increase our development and scale capacity.

Some of the noteworthy achievements are

- The first company in India to manufacture Ephedrine & Pseudoephedrine salts through a fully indigenous process.
- The first Indian company to acquire an API manufacturing facility out of India – Novus Fine Chemicals in New Jersey, USA.
- They currently market their products in over 60 Countries and are supported by highly motivated and talented partners.

At the heart of this pharmaceutical company there is desire to heal and contribute to the wellness of mankind. They are constantly innovating; Providing Value added services and always ensure that they have excellent relationships with everyone which encompasses their businesses and beyond.

1.3.1 NOVUS FINE CHEMICALS:

They decided to spread their business further and better to serve their customers in the west. In 2005, they became the first Indian company to acquire an API manufacturing facility outside India , namely, Novus Fine Chemicals in Carlstadt , New Jersey , a US FDA manufacturing facility.

Novus was just the right platform that Malladi needed to bridge the gap between their customers' requirements and their production capabilities. With Novus, they adopted a unique Nearshore/Offshore model with USFDA approved API manufacturing facilities in both the India and USA . Intermediates produced at their manufacturing facilities in India are finished at Novus. Thus they are able to offer their US customers, products manufactured in USA at the cost competitiveness of an Indian Supplier.

Novus has a total manufacturing area of 70,000 square feet and over 50,000 gallons of reaction capacity in Stainless Steel, Glass and Hastelloy contact surfaces . It also has a pilot plant to scale-up processes from lab-scale to 500 gallon scale reactor trains. Novus offers total adaptability in production through flexible manufacturing facilities for development, scale-up and commercial manufacture of New Chemical

Entities (NCEs), mature Active Pharmaceutical Ingredients (API) and advanced chemical intermediates in a cGMP environment.

1.3.2 MISSION & VISION:

Malladi's Mission is to commit itself to adding superior value to all its customers, suppliers, employees and shareholders through creation of research based innovative products and high quality services in all the facets of manufacturing quality medicines, for the benefit of the medical community, healthcare and personal care companies around the world.

Malladi's Vision is to become a compelling partner providing all the key services to our customers, in the innovation and manufacturing of quality medicine and healthcare products, to make the world healthier.

We will achieve this by:

- Understanding the needs of our customers, and devoting our resources to meeting these needs through highest levels of scientific excellence, innovation and research.
- Motivating the key stakeholder groups, customers, employees, the shareholders and the suppliers- each of whom will be empowered with a strong voice in determining our success.
- Operating from the state of art facilities meeting the most stringent quality and environmental norms.
- Adopting the highest levels of governance, integrity and ethics to become the best corporate citizen.

1.3.3 PRODUCTS AND SERVICES:

They are very competitive in the range of Products & Services that they offer; but more importantly, what sets them apart, are the relationships that they share with their valued customers.

Malladi offers the following:

Products

- Active Pharmaceutical Ingredients
- Steroids & Hormones and Molecules under Scale Up
- Speciality and Intermediate Product List

Services

Contract Manufacturing

- GMP compliant manufacturing
- Collaborative and non-competing business model
- Exclusive project working relationship for grams – kilos- commercial
- Intellectual Property Protection

Contract Research

- New Chemical entities – Global patents
- Non-infringing processes
- Competently staffed- Doctorates in Organic Chemistry, Analytical Chemistry, Pharmacology and Microbiology
- In-house process development and technology driven.

1.3.4 MANUFACTURING FACILITIES:

They have **FIVE** manufacturing units in India and **ONE** in the USA In fact, this is the only facility in the United States of America for manufacturing Pseudoephedrine HCl.

Their manufacturing units, which are ISO 9001:2000, cGMP compliant, audited by the USFDA, EDQM, TGA and other big Pharma Majors; establish a benchmark for other manufacturing units in the industry. They have validation capabilities across the Product Development Cycle and facilitate quick and efficient DMF compilation with

dedicated QA and QC teams for identified projects. They ensure that their manufacturing units are completely safe for the environment as well as for workers. Their units have Zero effluent discharge and an impeccable safety record.

They undertake Contract Manufacturing and Custom Synthesis API's, Advanced Intermediates and Clinical supplies. Their reaction conditions range from -70C to +230C. They also have expertise in Fermentation-based products and can also offer their customers exclusive project working relationships and utmost confidentiality and protection of IPR.

1.3.5 R&D:

Research and Development has played a big role in Malladi's success. Their R&D centre has been recognised by Anna University , a 150-year-old premier institution in Chennai as a center for doctoral research. The Department of Science and Technology, Government of India has also recognized Malladi's R&D efforts. They developed an indigenous process for the manufacture of Ephedrine HCl.

Non-infringing processes, Synthesis of API's, Complex Advanced Intermediates and Biosynthesis of APIs, Intermediates and Performance Chemicals. Their research team is staffed with Scientists and Doctors in Organic Chemistry, Analytical Chemistry, Pharmacology, Microbiology and Biotechnology.

1.3.6 AWARDS:

- Acharya P.C.RAY award for R&D Excellence-1986.
- Ministry of science and Technology, India- National Award for Research& Development in industry – 1990.
- IDMA Award for excellence in Quality- 1991.
- Chemexcil Award for Export performance-1990,1991.
- Safety Award by Government of Tamil Nadu- 1998, 2001.
- Chemexcil Award for Exports of bulk drugs- 1999,2000.
- Chemexcil Award for merchant Exports- 2000,2001.
- Chemexcil gold award(large scale sector)- 2002-2003.

- IDMA award for quality excellence- 2003.
- Best renewable energy application award(Silver Rolling Trophy) for the year 2003- 2004 by Andhra Pradesh government.
- Cleaner production award from Andhra Pradesh pollution control board- 2004.

1.3.7 SAFETY, HEALTH & ENVIRONMENT:

Malladi has implemented safety and environmental systems complying with current industry standards. The systems and practices are subjected to continuous improvements.

All our facilities are zero discharge and have well designed treatment and evaporation systems. Malladi has been awarded the FIRST prize in two categories by Government of Tamil Nadu for safety practices.

1.3.8 FUTURE PLAN:

To effectively face the challenges of the future and sharpen our focus on innovation and continual growth, malladi has carried out a strategic rerlignment. From a manufacturing based organization focused on providing services for healthcare.

Their focus areas will include:

- Contract Research & Manufacturing
- Formulation R&D
- Toxicology studies
- Clinical Research
- Medical Diagnostics

To achieve these objectives quickly, Malladi is spreading its wings and establishing infrastructure in malaysia and china.

MAIN THEME OF THE PROJECT

CHAPTER 2

MAIN THEME OF THE PROJECT

2.1 OBJECTIVE OF THE STUDY:

- To study the effectiveness of Japanese TQM model.
- To map the gap between the deming standards and the real practice in the organization.

2.2 SCOPE OF THE STUDY:

- This study is confined only to middle management. Hence it is not applicable to other level of employees.
- Cultivates a system-wide, long-term view of the organization.
- Produces meaningful measurements.
- PM focus on results, rather than behaviors and activities.
- The findings may not be applicable to other companies.

2.3 LIMITATIONS OF THE STUDY:

- The main limitation was the time constraint in data collection.
- The findings are based on the opinion given by the respondents and hence there is chance for bias.

2.4 RESEARCH METHODOLOGY:

2.4.1 Type of the study

The nature of study is exploratory research.

An exploratory study is undertaken when not much is known about the situation, or no information is available on how similar problems or research issues have been solved in the past.

2.4.2 Method of data collection

Primary data is collected through questionnaire. Pre-structured questions were used to collect the data's from the respondents.

Secondary data was gathered from sources like records, files of organization, internet.

2.4.3 Sampling design

There are 650 employees in the organization and 100 middle management staffs. Sample of 100 employees were selected on census method.

2.4.4 Tools used for analysis

- Percentage analysis.
- Chi- square analysis.
- ANOVA.
- Factor analysis.
- Regression.

2.5 REVIEW OF LITERATURE

1) Neely, A.D., Gregory, M.J., and Platts, K.W. (1995)[1] 'Performance Measurement System Design: A Literature Review and Research Agenda', International Journal of Operations and Production Management, Vol. 15, No. 4, pp. 80-116.

Neely et al. defined performance measurement its strictest sense as the process of quantifying the efficiency and effectiveness of action. Neely went on to identify the activities required to measure performance by defining a performance measurement system as consisting of three inter-related elements:

- Individual measures that quantify the efficiency and effectiveness of actions.

- A set of measures that combine to assess the performance of an organisation as a whole.

- A supporting infrastructure that enables data to be acquired, collated, sorted, analysed, interpreted and disseminated.

2) Armstrong, M. and Baron A. (2003)[2] 'Performance Management: The New Realities', Chartered Institute of Personnel and Development.

Armstrong and Baron highlight the importance of performance management being strategic, integrated (vertical, functional, HR integration and integration of individual needs), concerned with performance improvement and concerned with development. The breadth of the subject area and lack of a concise definition make it difficult to identify the boundaries of what is and isn't performance management. The area which is most indicative of the evolution of performance management, and the area perhaps has the most identifiable stream of literature is that of performance

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[1] Neely, A.D., Gregory, M.J., and Platts, K.W. (1995) 'Performance Measurement System Design: A Literature Review and Research Agenda', International Journal of Operations and Production Management, Vol. 15, No. 4, pp. 80-116.

[2] Armstrong, M. and Baron A. (2003) 'Performance Management: The New Realities', Chartered Institute of Personnel and Development.

measurement, and in particular that of the Balanced Scorecard, with which in many people's eyes it has become synonymous. The Balanced Scorecard began life as an operational tool designed to measure and help improve operational performance in a manufacturing organisation. Once discovered by an accounting Professor, Bob Kaplan, its scope broadened to the measurement of organisational performance. It has now developed from a measurement tool into a strategic performance management approach of which measurement is but a small part. Balanced Scorecard is a much used, and abused term, in the field but it is the most identifiable concept. However in order to study performance management the comprehensiveness of the subject must be reflected, recognising its vertical and horizontal spread throughout organisations.

3) Franco, M. and Bourne, M (2003)[3] 'Factors that Play a Role in "Managing Through Measures"', Management Decision, Vol. 41, No. 8, pp 698-710.

Franco and Bourne identify the most significant factors affecting the use of performance management. These factors are heavily influenced by the change management literature reflecting the need not only to manage the implementation of a performance management system but also the ongoing change hat results from the review and management of performance. Corporate culture - some studies highlight the need for a corporate culture that encourages team working, ownership of problems and risk-taking or entrepreneurship, while others emphasise the need for a corporate culture orientated to continuous improvement and use of the SPM system. Alignment - the integration and linkage of individual strategies and goals, and the 'good match' between managers' responsibilities and the performance being managed. Review and update - a continuous review of the strategy, the performance being managed and systems and processes being used to manage. The focus of performance management should be to drive action for improvement and learning rather than control. There should also be focus on the development of action plans in

[3] Franco, M. and Bourne, M (2003) 'Factors that Play a Role in "Managing Through Measures"', Management Decision, Vol. 41, No. 8, pp 698-710

order to explain how the gaps between performance measures and goals could be closed, and review their progress periodically. There is emphasis on the need for prompt and formal feedback. There is consensus around the benefits of making everyone participate in the development of measures. Involvement in the selection and definition of measures can reduce employees and managers' resistance to performance management, and increase their usage level of performance measures. Compensation link – there is inconsistency in the literature regarding the linkage between incentive compensation and strategic performance measures. In addition, a lack of understanding around the concept of compensation seems to exist, since studies use the words 'incentives', 'rewards' and 'compensation' interchangeably.

4) Michael Armstrong[4], A Handbook of human resource management practice, Kogan Page, London, 1999, p. 431.

According to Armstrong, performance management is a means of getting better results from the organization, teams and individuals by understanding and managing performance within an agreed framework of planned goals, standards and competence requirements. It is a process for establishing shared understanding about what is to be achieved and an approach to managing and developing people in a way that increase the probability that it will be achieved in shorter and longer term.

Performance management is closely connected to performance measurement. They are sometimes mistaken for each other. In careful usage, performance management is the larger domain and includes performance measurement as a component:

Performance measurement is the process of assessing progress towards achieving predetermined goals.

Performance management is building on that process, adding the relevant communication and action on the progress achieved against these predetermined goals.

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[4] .Michael Armstrong, A Handbook of human resource management practice, Kogan Page, London, 1999, p. 431.

5) Jeffery Pfeffer[5], "The Real Keys to High Performance", Business Today, New Delhi, 22 December 1999, p. 158.

Pfeffer commends three basic principles, which effective leaders use to transform their organizations into high-commitment models of management: build trust, encourage change, and use appropriate measures of performance. He describes these three principles as follows:

Building trust. You cannot build trust without treating people with respect and dignity. So, build trust by initially treating all members of the organization as trustworthy. This means, among other things, sharing information with everyone.

Encouraging change. Leaders can encourage change by example by exposing themselves and their colleagues to alternative management models, or by doing things that break old ways of organizing.

Measuring what matters. Leaders recognize that what gets measured, gets done. Jeffery Pfeffer refers to Robert Kaplan and david norton's balance score card approach, in which 'financial measures are weighted against measures of customer satisfaction and retention, employee attitudes and retention, new product and business development, or readiness for change'.

6) Peter F.Drucker[6], The practice of management, alied publishers, Bombay, 1970, p.63.

For Drucker, objectives are needed in every area where performance and results directly and vitally affect the survival and prosperity is important and all will need to be suitably translated in the context of each role. Otherwise, there is a danger of role objectives becoming extremely micro and detailed to the extent of snatching all flexibility, autonomy or discretion from a role, making it totally soulless. The primary

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[5] Jeffery Pfeffer, "The Real Keys to High Performance", Business Today, New Delhi, 22 December 1999, p. 158.

[6] Peter F.Drucker, The practice of management, alied publishers, Bombay, 1970, p.63.

purpose of setting goals and subsequently reviewing performance against these goals is to create and sustain goal focus in the manager and manage scheme of things. According to drucker again, an organization cannot just assume that everyone in its staff will automatically work to fulfill their goals.

7) Heinz weihrich[7], management excellence: productivity through MBO, McGraw-Hill International editions, 1987.

According to weihrich, when clear and shared objectives are set organization-wide at various levels, they bring about: An improved understanding of individual roles, what is expected of each individual and the respective role accountabilities, More effective vertical and horizontal integration of goals and tasks in the organization, Concrete and valid context to interpret inter role communication vertical as well as horizontal, Basis to build and expect commitment to integrated role objectives and outcomes, Higher level work motivation through self-direction and control, Well founded bases for planning and control, Reduced inter role conflict resulting in improved relations across the organization, including those between a manager and her manages.

8) Robert R. Carkhuff[8], sources of human productivity, Human resource development press, Washington D.C, 1983,p.207.

Says Carkhuff, 'There is substantial evidence to relate human communication to human productivity. Persons who communicate at high levels facilitate the productivityof others. Persons who are trained to communicate at high levels are more productive'.

Effective dialogue between a manager and her managee is a back and forth process involving repetitions and revisions of what is discussed. It is not a linear process from

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[7] Heinz weihrich, management excellence: productivity through MBO, McGraw-Hill International editions, 1987.

[8] Robert R. Carkhuff, sources of human productivity, Human resource development press, Washington D.C, 1983,p.207.

the beginning to the end, form the plan to the achievement of a plan or from the surface to the root. Relevant data may either be missing or disputed; feelings may be unconscious, misunderstood or denied. Questions help achieve deeper insights and awareness. An effective dialogue involves dealing with reality at four levels they are factual levels, reflective levels, interpretive levels, decisional levels.

9) A.A.Naizi[9], Performance appraisal-another look at its objectives, Indian management, July 1979, quoted in A.A.Naizi, Appraisal and administrative decisions, Indian management, vol.21, No.6, All India management association, New Delhi, June,1982,p.3.

Niazi holds that appraisal is the only subsystem, which provides for the use of hierarchy channels: To communicate organizational objectives and expectations to manage, to agree on main tasks and responsibilities of the manage, to review progress, problems, tasks and needed support from time to time, to record achievements and failures during the appraisal period.

According to him, the basic purpose of appraisal 'is connected with the very process of management which is to plan, coordinate, organize, motivate, guide, develop and encourage'. As such it is the manager's responsibility to prepare a periodic record of what her manages have achieved and hoe they have done it.

[9] A.A.Naizi, Performance appraisal-another look at its objectives, Indian management, July 1979, quoted in A.A.Naizi, Appraisal and administrative decisions, Indian management, vol.21, No.6, All India management association, New Delhi, June,1982,p.3.

10) Wendell French[10], organization development: objectives, assumptions and strategies (1969), in newton Margulies, & antony P. raia, organizational development-values, process and technology, tata McGraw-Hill Publishing company Ltd., New Delhi, 1975, p.31.

French, OD 'refers to a long- range effort to improve an organization's problem solving capabilities and its ability to cope with changes in its external environment with the help of external or internal behavioral scientist consultants, or change agents'. Each organization will need to decide for itself how long the 'long-range' can be for the overall effect to represent a sustainable mix of stability and change. This will depend upon the organization's internally and externally induced rate of change, its ability to reliably forecast the changes likely to occur and its ability to retain its commitment to a viable plan in the face of compulsions to deviate.

11) Paul lyons(2003)[11], influencing performance improvement using skill charting,journal: journal of european industrial training, volume: 27 issue:8, publisher: MCB UP Ltd, page:398-404, year:2003.

Paul lyons (2003), provides a brief exposition on the general definitions and features of skills and competence in organizations, presents an overview of skill charting, offers specific methods to demonstrate training for development using constructive approaches; and then presents the results of a brief study that encompasses the approaches discussed. The findings of the study indicate that the skill charting methods have value, promise, and that they require further study.

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[10] Wendell French, organization development: objectives, assumptions and strategies (1969), in newton Margulies, & antony P. raia, organizational development-values, process and technology, tata McGraw-Hill Publishing company Ltd., New Delhi, 1975, p.31.

[11] Paul lyons(2003), influencing performance improvement using skill charting,journal: journal of european industrial training, volume: 27 issue:8, publisher: MCB UP Ltd, page:398-404, year:2003.

12) Kanin-Lovers, Jill Bevan, Richard[12], Don't evaluate performance--manage it, Journal of Compensation & Benefits; Mar/Apr92, Vol. 7 Issue 5, p51, 3p.

Offers ways to strengthen performance management of employees. Changing of the language of performance evaluation; Use of fewer performance distinctions; Close attention to poor performers; Continuous training of managers and supervisors; Salary increases; Utilization of variable pay to reward exceptional performance; Establishment of clear performance standards and expectations.

13) Sethi, Rajesh Sethi, Anju[13], Can Quality-Oriented Firms Develop Innovative New Products?, Journal of Product Innovation Management; Mar2009, Vol. 26 Issue 2, p206-221, 16p.

Research suggests that a strong focus on quality improvement can adversely affect exploration and thus the development of innovative new products. The focus on quality improvement including total quality management (TQM) has been termed quality orientation. The literature suggests that one way to reduce the adverse effect of a quality orientation on innovativeness is to adopt ambidextrous or dual organizational forms. However, dual organizational forms are cumbersome and expensive to implement. This paper argues that a less demanding structural arrangement for developing innovative products in quality-oriented organizations involves the creation of cross-functional teams that are explicitly encouraged to take risk and granted autonomy. In this model, the two dimensions of innovativeness—namely, novelty and appropriateness— are treated separately because quality orientation and encouragement to take risk can have differential effects on these two dimensions. Quality orientation is able to mitigate the adverse effect of encouragement to take risk on appropriateness. But encouragement to take risk does not influence the relationship between a quality orientation and novelty. Autonomy

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[12] Kanin-Lovers, Jill Bevan, Richard, Don't evaluate performance--manage it, Journal of Compensation & Benefits; Mar/Apr92, Vol. 7 Issue 5, p51, 3p.

[13] Sethi, Rajesh Sethi, Anju, Can Quality-Oriented Firms Develop Innovative New Products?, Journal of Product Innovation Management; Mar2009, Vol. 26 Issue 2, p206-221, 16p.

improves the positive effect of encouragement to take risk on new product novelty but does not influence the effect of a quality orientation on novelty.

14) Grant, Michael[14],Six Sigma for People? The Heart of Performance Management. Human Resource Planning; 2006, Vol. 29 Issue 1, p10-11, 2p.

The article discusses the process of performance management for employees. The process culminates in a face-to-face meeting between employee and manager in which both parties often feel awkward and leave unsatisfied. The article presents a method for human resources officers to maximize the value of yearly performance reviews. Steps involve the theory of six sigma, which is traditionally utilized for organizational management but can also be tailored to personnel management with the adjustment of a few objectives.

15)Kume[15], H. 'Business Loss and Quality Management'. Quality Progress, July 1988.

The following guidelines should be helpful for creating plans. They are given as follows: when formulating plans, any restrictions on available resources(i.e., people, cost, materials and equipment) and timescales must be clarified and the methods feasible under these restrictions must be found. Procedures must be devised for checking and evaluating whether the plans are effective and whether or not they are being followed and incorporated into the original plans. Information must be constantly collected and organized and made full use of when plans are drawn. A good balance between goals and resources must be achieved. It is counterproductive to set pointlessly high targets. Effective information systems must be constructed in order to communicate the aims of the plans to every part of the organization.

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[14] Grant, Michael,Six Sigma for People? The Heart of Performance Management.Human Resource Planning; 2006, Vol. 29 Issue 1, p10-11, 2p.

[15] Kume, H. 'Business Loss and Quality Management'. Quality Progress, July 1988.

ANALYSIS AND INTERPRETATION

CHAPTER 3

ANALYSIS AND INTERPRETATION

This chapter consists of five broad sections.

Section 3.1 deals with Percentage analysis.

Section 3.2 deals with Factor analysis.

Section 3.3 deals with Chi-square analysis.

Section 3.4 deals with ANOVA.

Section 3.5 deals with Regression analysis.

3.1 PERCENTAGE ANALYSIS

The Percentage analysis is the simple frequency and percentage analysis over the selected factor. It describes about the distribution pattern of the respondents/ responses and it assist to find out the effective frequency among the list of factors.

Table 3.1.1: Age group of the respondents

This table shows the age group of the respondents with the age limit starting from below 25 years, 25-34 years, 35-44 years, above 44 years.

Age	**No. of Respondents**	**Percent**
Below 25 years	13	13.00
25 - 34 years	36	36.00
35 - 44 years	32	32.00
Above 44 years	19	19.00
Total	**100**	**100.00**

Interpretation:

From the above table it is inferred that 36% of the respondents belongs to 25 – 34 years age group, 32% of the respondents belongs to35 – 44 years age group, 19% of the respondents belongs to above 44 years age group and 13% of the respondents belongs to below 25 years age group. Thus the organization contains employees from all age groups, since it contains 19% of experienced people it will be a greater advantage for the improvement of the organization.

Figure 3.1.1: Age of the respondents

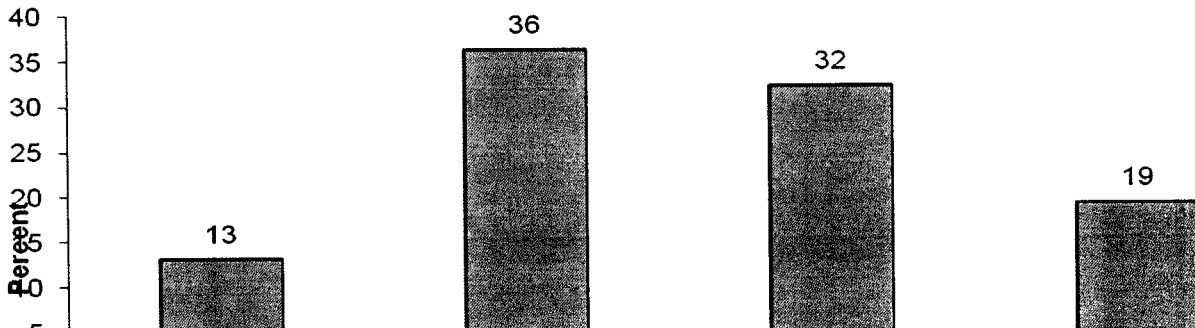


Table 3.1.2: Gender of the respondents

This table shows the number of male and female employees present in the organization.

Gender	No. of Respondents	Percent
Male	68	68.00
Female	32	32.00
Total	**100**	**100.00**

Interpretation:

From the above table it is observed that 68% of the respondents are male and 32% of the respondents are female. Since the organization is involved in chemical handling so female employees are not interested in such kind of work environment.

Figure 3.1.2: Gender of the respondents

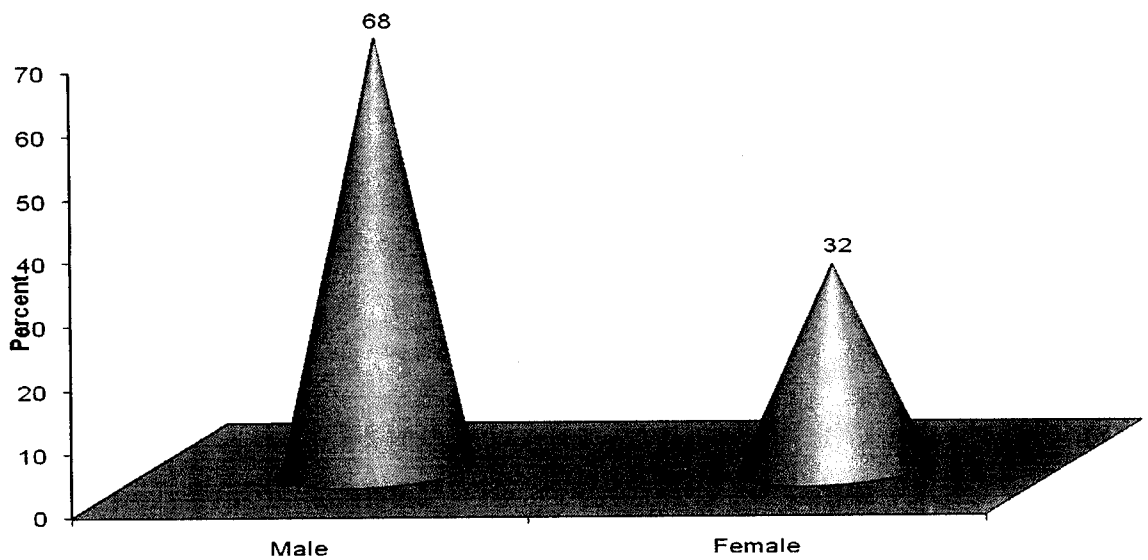


Table 3.1.3: Educational qualification of the respondents

This table shows the educational qualification of the respondents with various degrees such as graduate, post graduate and doctoral.

Education Qualification	**No. of Respondents**	**Percent**
Graduate	55	55.00
Post Graduate	45	45.00
Doctoral	0	0.00
Total	**100**	**100.00**

Interpretation:

From the above table it is inferred that 55% of the respondents are graduate level educational qualification and 45% of the respondents are post graduate level educational qualification. It is concluded that most of the employees are graduates because the opportunity for higher studies is less in the organization. So the organization should provide more opportunities that will help in the development of organization.

Figure 3.1.3: Education Qualification

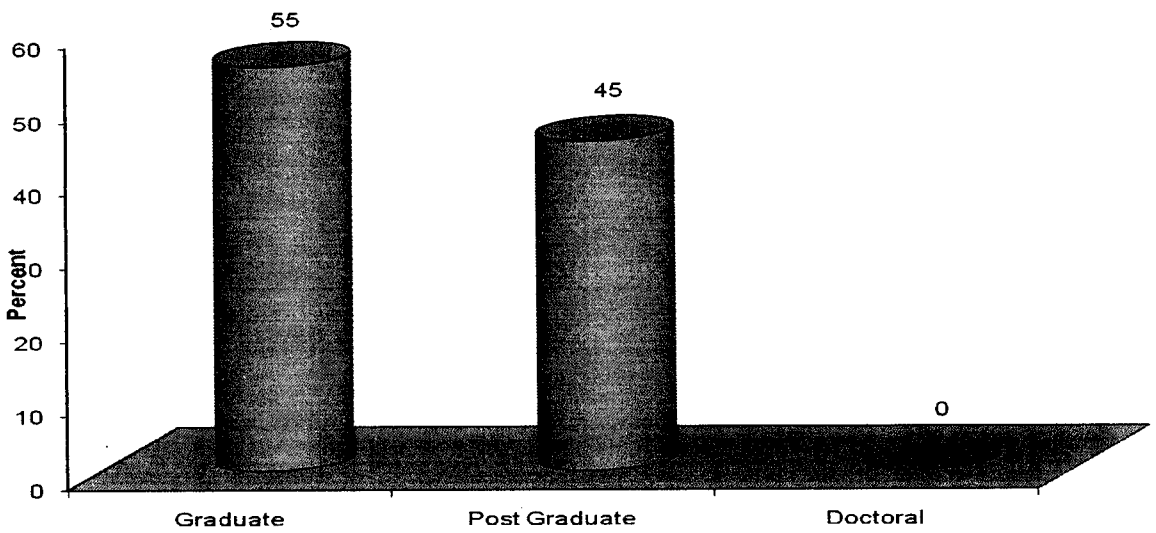


Table 3.1.4: Working experience of the respondents

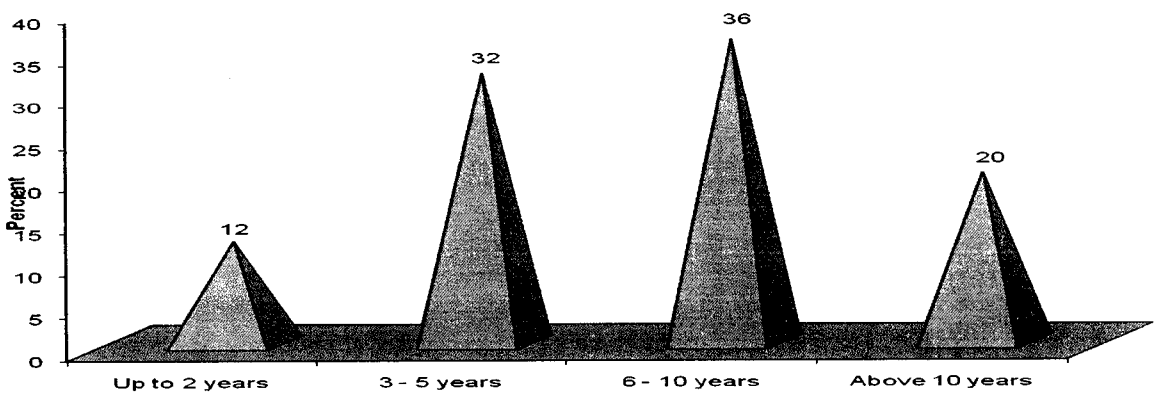
This table shows that working experience of employees with the range starting from up to 2 years, 3-5 years, 6-10 years and above 10 years.

Working Experience	No. of Respondents	Percent
Up to 2 years	12	12.00
3 - 5 years	32	32.00
6 - 10 years	36	36.00
Above 10 years	20	20.00
Total	**100**	**100.00**

Interpretation:

From the above table it is inferred that 36% of the respondents having 6 – 10 years working experience, 32% of the respondents are having 3 – 5 years working experience, 20% of the respondents are having above 10 years working experience and 12% of the respondents are having up to 2 years experience. It is concluded that the organization consists most of the experienced employees and that will help to make correct decisions at the critical positions in the organization.

Figure 3.1.4: Working Experience



3.2 FACTOR ANALYSIS

A principle component factor analysis was employed to validate the underlying self-assessment of TQM practices. According to Rollins (1992), a loading of 0.4 or higher is generally considered good in statistical terms. Thus, the survey instrument had been validated to have construct validity.

Table 3.2.1: Factor Analysis – Leadership Factors

This tables deals with the factor analysis with various leadership factors.

Leadership	**Initial**	**Extraction**
Workforce Commitment	1	0.674
Shared Vision	1	0.512
Customer Focus	1	0.654
Use of Workforce	1	0.758
Personnel Training	1	0.780
Co-operative Supplier	1	0.455
Use of Just-in-time Principles	1	0.741

Interpretation:

From the above table it is inferred that among the list of factors considered for the leadership related factors, personnel training is having high extraction value of 0.780, use of workforce has extraction value of 0.758, use of just-in-time principles has extraction value of 0.741 and so on. The respondents believe that TQM implementation has given good personnel training.

Table 3.2.2: Factor Analysis – Cost Reduction

This tables deals with the factor analysis with various cost reduction factors.

Cost Reduction	Initial	Extraction
Customer Complaints	1	0.737
Defect Rate	1	0.706
Cost of Rework & Waste	1	0.650
Process Variance	1	0.629
Manufacturing Cost	1	0.707
Quality Cost	1	0.675
Delivery Time	1	0.709

Interpretation:

From the above table inferred that the factor analysis performed for the TQM implementation on cost reduction factors. It is noticed from the above table that customer complaints has high extraction value of 0.737, delivery time has extraction value of 0.709, defect rate has extraction value of 0.706 and so on. The TQM implementation has reduce the customer complaints.

Table 3.2.3: Factor Analysis – Business Performance

This tables deals with the factor analysis with various business performance factors.

Business Performance	**Initial**	**Extraction**
Capacity of Machinery & Equipment	1	0.640
Business Orders	1	0.572
New Product Introduction	1	0.496
Product Functionality	1	0.659
Overall Profitability	1	0.687
Product Reliability	1	0.545

Interpretation:

From the above table it is inferred that the factor analysis is performed for the TQM implementation on business performance. It is observed from the above table that overall profitability has high extraction value of 0.687, product functionality has extraction value of 0.659, capacity of machinery & equipment has extraction value of 0.640 and so on. According to business performance, TQM implementation has create a high impact on overall profitability of the organization.

3.3 CHI-SQUARE ANALYSIS

Chi-square is a test which describes the magnitude of difference between observed frequencies and the frequencies expected under certain circumstances. The test statistics show the characteristics of the test; when the data are from a normal distribution, the test statistic is smaller than the level of significance and the hypothesis is accepted. $\chi^2 = \sum \frac{(O-E)^2}{E}$

Hypothesis: The age of the respondents have no significant influence on agreeability towards TQM implementation.

Table 3.3.1: age of the respondents vs factors for TQM implementation

S. No	factors	Chi square value	P value	S/NS
1	Workforce commitment	4.455	0.615	NS
2	Insist the shared vision	3.651	0.724	NS
3	Improve the customer focus	21.505	0.043	S
4	utilization of work force	14.98	0.243	NS
5	improve the quality	9.112	0.427	NS
6	TQM enhances supplier relations	3.779	0.987	NS
7	Use of just in time	9.986	0.352	NS
8	Reducing customer complaints	22.55	0.035	S
9	Reducing defect rate	7.529	0.582	NS
10	Reducing the cost of reworks	7.226	0.614	NS
11	Reducing the process variance	22.98	0.013	S
12	Reducing the manufacturing cost	12.444	0.411	NS
13	Reducing the quality cost	15.128	0.235	NS
14	Reducing the delivery time	4.027	0.91	NS
15	Improving the capacity of machinery	5.287	0.809	NS
16	Improving the business orders	4.681	0.585	NS
17	Speeding the new product	7.217	0.843	NS
18	Improving the product functionality	23.86	0.026	S
19	Improving the overall profitability	5.068	0.821	NS
20	Improving the product reliability	8.135	0.521	NS

Interpretation:

The chi square test for the age of the respondents have revealed the factors like Improve the customer focus, Reducing customer complaints, Reducing the process variance, Improving the product functionality have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

Hypothesis: The Gender of the respondents have no significant influence on agreeability towards TQM implementation.

Table 3.3.2: Gender of the respondents vs factors for TQM implementation

S. No	factors	chi square value	P value	S/NS
1	Workforce commitment	3.858	0.145	NS
2	Insist the shared vision	2.165	0.339	NS
3	Improve the customer focus	23.554	0.039	S
4	utilization of work force	1.628	0.804	NS
5	improve the quality	4.381	0.223	NS
6	TQM enhances supplier relations	21.266	0.047	S
7	Use of just in time	4.821	0.185	NS
8	Reducing customer complaints	6.567	0.161	NS
9	Reducing defect rate	0.812	0.847	NS
10	Reducing the cost of reworks	1.661	0.646	NS
11	Reducing the process variance	4.517	0.105	NS
12	Reducing the manufacturing cost	26.824	0.038	S
13	Reducing the quality cost	0.392	0.983	NS
14	Reducing the delivery time	0.435	0.092	S
15	Improving the capacity of machinery	1.794	0.616	NS
16	Improving the business orders	0.378	0.828	NS
17	Speeding the new product	27.459	0.017	S
18	Improving the product functionality	2.540	0.637	NS
19	Improving the overall profitability	1.875	0.599	NS
20	Improving the product reliability	4.352	0.226	NS

Interpretation:

The chi square test for the gender of the respondents have revealed the factors like Improve the customer focus, TQM enhances supplier relations, Reducing the manufacturing cost, Reducing the delivery time, Speeding the new product have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

Hypothesis: The Qualification of the respondents have no significant influence on agreeability towards TQM implementation.

Table 3.3.3: Qualification of the respondents vs factors for TQM implementation

S. No	factors	chi square value	P value	S/NS
1	Workforce commitment	2.730	0.255	NS
2	Insist the shared vision	2.742	0.254	NS
3	Improve the customer focus	21.99	0.041	S
4	utilization of work force	4.074	0.396	NS
5	improve the quality	20.75	0.049	S
6	TQM enhances supplier relations	5.983	0.342	NS
7	Use of just in time	1.118	0.773	NS
8	Reducing customer complaints	3.628	0.514	NS
9	Reducing defect rate	22.88	0.035	S
10	Reducing the cost of reworks	20.21	0.05	S
11	Reducing the process variance	0.886	0.642	NS
12	Reducing the manufacturing cost	3.367	0.498	NS
13	Reducing the quality cost	5.259	0.262	NS
14	Reducing the delivery time	23.554	0.039	S
15	Improving the capacity of machinery	7.235	0.065	
16	Improving the business orders	3.771	0.152	NS
17	Speeding the new product	0.257	0.992	NS
18	Improving the product functionality	2.035	0.729	NS
19	Improving the overall profitability	1.793	0.617	NS
20	Improving the product reliability	1.527	0.676	NS

Interpretation:

The chi square test for the qualification of the respondents have revealed the factors like Improve the customer focus, improve the quality, Reducing defect rate, Reducing the cost of reworks, Reducing the delivery time have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

Hypothesis: The Experience of the respondents have no significant influence on agreeability towards TQM implementation.

Table 3.3.4: Experience of the respondents vs factors for TQM implementation

S. No	factors	chi square value	P value	S/NS
1	Workforce commitment	5.252	0.512	NS
2	Insist the shared vision	8.367	0.212	NS
3	Improve the customer focus	5.936	0.919	NS
4	utilization of work force	12.448	0.410	NS
5	improve the quality	23.86	0.026	S
6	TQM enhances supplier relations	8.728	0.726	NS
7	Use of just in time	15.700	0.073	NS
8	Reducing customer complaints	3.035	0.995	NS
9	Reducing defect rate	27.459	0.017	S
10	Reducing the cost of reworks	8.075	0.527	NS
11	Reducing the process variance	7.053	0.316	NS
12	Reducing the manufacturing cost	26.14	0.024	S
13	Reducing the quality cost	14.294	0.282	NS
14	Reducing the delivery time	6.399	0.699	NS
15	Improving the capacity of machinery	5.965	0.743	NS
16	Improving the business orders	4.371	0.627	NS
17	Speeding the new product	10.670	0.557	NS
18	Improving the product functionality	25.19	0.029	S
19	Improving the overall profitability	8.811	0.455	NS
20	Improving the product reliability	12.323	0.196	NS

Interpretation:

The chi square test for the experience of the respondents have revealed the factors like improve the quality, Reducing defect rate, Reducing the manufacturing cost, Improving the product functionality have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

3.4 ANOVA

ANOVA is used to test if there is any significant difference in the barriers to optimum productivity among the departments. It enables to test for the significance of the difference more than two sample means.

Hypothesis: There is no significant difference between the leadership factors among the departments.

Table 3.4.1: Leadership factors vs departments

This table shows the variation between the Leadership factors and various departments in the organization.

S. No	factors	F value	P value	S/NS
1	Workforce commitment	2.711	0.035	S
2	Insist the shared vision	0.704	0.591	NS
3	Improve the customer focus	0.856	0.493	NS
4	utilization of work force	2.873	0.025	S
5	improve the quality	0.658	0.622	NS
6	TQM enhances supplier relations	1.219	0.308	NS
7	Use of just in time	0.784	0.538	NS

Interpretation:

The ANOVA test for the leadership factors among the departments have revealed the factors like Workforce commitment, utilization of work force have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

Hypothesis: There is no significant difference between the cost factors among the departments.

Table 3.4.2: Cost reduction factors vs departments

This table shows the variation between the Cost reduction factors and various departments in the organization.

S. No	factors	F value	P value	S/NS
1	Reducing customer complaints	0.479	0.751	NS
2	Reducing defect rate	0.584	0.675	NS
3	Reducing the cost of reworks	0.687	0.602	NS
4	Reducing the process variance	2.645	0.019	S
5	Reducing the manufacturing cost	0.746	0.563	NS
6	Reducing the quality cost	2.574	0.024	S
7	Reducing the delivery time	0.627	0.644	NS

Interpretation:

The ANOVA test for the leadership factors among the departments have revealed the factors like Reducing the process variance, Reducing the quality cost have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

Hypothesis: There is no significant difference between the business performance factors among the departments.

Table 3.4.3: Business performance factors vs departments

This table shows the variation between the business performance factors and various departments in the organization.

S. No	factors	F value	P value	S/NS
1	Improving the capacity of machinery	0.428	0.788	NS
2	Improving the business orders	0.111	0.978	NS
3	Speeding the new product	2.880	0.029	S
4	Improving the product functionality	1.166	0.331	NS
5	Improving the overall profitability	2.945	0.011	S
6	Improving the product reliability	0.612	0.655	NS

Interpretation:

The ANOVA test for the leadership factors among the departments have revealed the factors like Speeding the new product, Improving the overall profitability have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

3.5 REGRESSION ANALYSIS

It is a functional relationship between dependent variable and independent variables. It is classified under two categories as simple regression and multiple regressions. In this study multiple regressions is performed between a dependent variable and independent variables using step reduction method mainly to assess the degree of explanation each important variable on the dependent variable through R2, coefficient of determination.

Table 3.5.1: Regression – Overall Performance after implementing TQM

Model	**R**	**R Square**	**Incremental value**
Leadership	0.629	0.395	0.395
Cost Reduction	0.880	0.774	0.379
Business Performance	1.000	1.000	0.226

Interpretation:

From the above table it is inferred that the multiple regression analysis is performed between the study factors such as leadership, cost reduction and business performance. The leadership has r value of 0.629, cost reduction has r value of 0.880 and business performance has r value 1.0. According to the regression analysis leadership explains 39.5% contribution to overall TQM implementation, cost reduction explains 37.9% contribution to overall TQM implementation and business performance explains 22.6% contribution to overall TQM implementation.

CHAPTER 4

FINDINGS, SUGGESTIONS, CONCLUSION

4.1 FINDINGS:

- It is found that 36% of the respondents belongs to 25 – 34 years age group, 32% of the respondents belongs to35 – 44 years age group, 19% of the respondents belongs to above 44 years age group and 13% of the respondents belongs to below 25 years age group. Thus the organization contains employees from all age groups, since it contains 19% of experienced people it will be a greater advantage for the improvement of the organization.
- It is observed that 68% of the respondents are male and 32% of the respondents are female. Since the organization is involved in chemical handling so female employees are not interested in such kind of work environment.
- It is found that 55% of the respondents are graduate level educational qualification and 45% of the respondents are post graduate level educational qualification. It is concluded that most of the employees are graduates because the opportunity for higher studies is less in the organization. So the organization should provide more opportunities that will help in the development of organization.
- It is found that 36% of the respondents having 6 – 10 years working experience, 32% of the respondents are having 3 – 5 years working experience, 20% of the respondents are having above 10 years working experience and 12% of the respondents are having up to 2 years experience. It is concluded that the organization consists most of the experienced employees and that will help to make correct decisions at the critical positions in the organization.
- The chi square test for the age of the respondents have revealed the factors like Improve the customer focus, Reducing customer complaints, Reducing the process variance, Improving the product functionality have

got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.

- The chi square test for the gender of the respondents have revealed the factors like Improve the customer focus, TQM enhances supplier relations, Reducing the manufacturing cost, Reducing the delivery time, Speeding the new product have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- The chi square test for the qualification of the respondents have revealed the factors like Improve the customer focus, improve the quality, Reducing defect rate, Reducing the cost of reworks, Reducing the delivery time have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- The chi square test for the experience of the respondents have revealed the factors like improve the quality, Reducing defect rate, Reducing the manufacturing cost, Improving the product functionality have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- It is inferred that among the list of factors considered for the leadership related factors, personnel training is having high extraction value of 0.780, use of workforce has extraction value of 0.758, use of just-in-time principles has extraction value of 0.741 and so on. The respondents believe that TQM implementation has given good personnel training.
- It is inferred that the factor analysis performed for the TQM implementation on cost reduction factors. It is noticed from the above table that customer complaints has high extraction value of 0.737, delivery time has extraction value of 0.709, defect rate has extraction value of 0.706 and so on. The TQM implementation has reduce the customer complaints.

- It is inferred that the factor analysis is performed for the TQM implementation on business performance. It is observed from the above table that overall profitability has high extraction value of 0.687, product functionality has extraction value of 0.659, capacity of machinery & equipment has extraction value of 0.640 and so on. According to business performance, TQM implementation has create a high impact on overall profitability of the organization.
- The ANOVA test for the leadership factors among the departments have revealed the factors like Workforce commitment, utilization of work force have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- The ANOVA test for the leadership factors among the departments have revealed the factors like Reducing the process variance, Reducing the quality cost have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- The ANOVA test for the leadership factors among the departments have revealed the factors like Speeding the new product, Improving the overall profitability have got the p value less than 0.05. Hence the hypothesis has been rejected and all other p values are greater than the level of significance i.e., 0.05, hence hypothesis is accepted.
- It is inferred that the multiple regression analysis is performed between the study factors such as leadership, cost reduction and business performance. The leadership has r value of 0.629, cost reduction has r value of 0.880 and business performance has r value 1.0. According to the regression analysis leadership explains 39.5% contribution to overall TQM implementation, cost reduction explains 37.9% contribution to overall TQM implementation and business performance explains 22.6% contribution to overall TQM implementation.

CONCLUSION

4.2 SUGGESTIONS:

According to the findings of the study, it is found that the employees have given their opinion as satisfied with some of the factors provided by the management such as Workforce commitment, Insist the shared vision, improve the quality, Improving the overall profitability etc.

Thus the management of malladi drugs and pharmaceuticals should take note of the findings and they should improve some of the factors like cost reduction and business performance factors, which will fulfil their requirements and also make them to achieve the deming award.

4.3 CONCLUSION:

This study concludes that the performance management is a multi-step process of aligning employee's work behaviors with the strategy and goals of the organization. It is the process of creating a work environment in which people are enabled to perform to best of their abilities. It is a tool for implementing strategic planning and achieving continuous improvement at all levels of an organization. As per findings the existing performance management system in the organization is good. Thus the management should take note of the findings and they should improve some of the factors like cost reduction and business performance factors, which will make them to achieve the deming award.

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APPENDIX

QUESTIONNARIE

AN EXPLORATORY STUDY ON JAPANESE TQM MODEL DRIVEN PERFORMANCE MANAGEMENT SYSTEM FOR MIDDLE MANAGEMENT.

I. PERSONAL FACTORS

1. Name :

2. Age : a) Below 25yrs b)25 – 34yrs c)35 – 44 d)Above 45 yrs

3. Gender : a)Male b)Female

4. Education : a)Graduate b)Post Graduate c)Doctoral

5. Experience: a)up to 2 yrs b)3 – 5yrs c)6 – 10yrs d)Above 10 yrs

6. Deparment:

II. LEADERSHIP FACTORS

7. Workforce commitment has improved

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

8. Insist the shared vision of the organization

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

9. Improve the customer focus

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

10. Utilization of workforce has been improved

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

11. Organization is providing personnel training to maintain and improve the quality

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

12. TQM enhances co-operative supplier relations

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

13. Use of just-in-time principles is effective

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

III. COST REDUCTION

14. Reducing customer complaints

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

15. Reducing defect rate of the product

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

16. Reducing the cost of reworks and waste

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

17. Reducing the process variance

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

18. Reducing the manufacturing cost

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

19. Reducing the quality cost

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

20. Reducing the delivery time

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

IV. BUSINESS PERFORMANCE

21. Improving the capacity of machinery and equipments

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

22. Improving the business orders

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

23. Speeding the new product introduction

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

24. Improving the product functionality

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

25. Improving the overall profitability of the organization

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

26. Improving the product reliability

☐ Strongly Agree ☐ Agree ☐ Neutral

☐ Disagree ☐ Strongly Disagree

27. Please give us your suggestion to be improved further
