**INVESTIGATING, IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN CAR MANUFACTURING COMPANY IN INDIA- PROBLEM, ISSUES AND RECOMMENDATIONS**

**By**

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**A Dissertation submitted in partial fulfilment of the requirements of the degree of**

**MASTER OF ENGINEERING WITH ADVANCED STUDIES**

**ENGINEERING MANAGEMENT**

**From**

**GRIFFITH UNIVERSITY**

**GOLD COAST CAMPUS**

**GRIFFITH SCHOOL OF ENGINEERING**

**2015**

**INVESTIGATING, IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT IN CAR MANUFACTURING COMPANY IN INDIA- PROBLEM, ISSUES AND RECOMMENDATIONS**

**DECLARATION**

I certify that the activities and documentation of this Dissertation have been undertaken by myself, and that the content is the direct result of my own effort except where contributed data and external assistance has been acknowledged.

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**Acknowledgement**

First and foremost, I have to thank my research supervisor, Dr Anisur Rahman .Without his assistance and dedicated involvement in every step throughout the process, this research project would have never been accomplished. I would like to thank you very much for your support and patience over the period of the research.

Secondly I want to thank Griffith University for making available the precious literature collection. This has been a huge resource during the 2 years master’s program and especially this research project.

I sincerely thank the participants of the research from Maruti Suzuki, who spent precious time and for the survey questionnaire.

Finally, I wish to thank my parents for their dedicated support throughout my Master’s Degree.

**Project Brief**

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**Title of Project:**

Investigating, implementation of Total Quality Management (TQM) in car manufacturing companies in India: Problem, Issues and Recommendations.

**Background:**

Total Quality Management became popular in all around the world in 1970s because of the success of Japanese quality control programs and it is a tool to keep the engineering and construction firms in competition with the cheap and excellent quality of their adversary. In the 1980s, TQM began to be used by the construction and engineering communities within the United States. However, the success of these implementations has been inconsistent.

The definition of quality depends on the role of the people defining it. Quality means “Delighting the customer by fully meeting their needs and expectations”. These may includes performance, appearance, availability, delivery, reliability, maintainability, cost effectiveness and price.

Many manufacturing companies are using quality methods and safety techniques. Sort, Set-In-Order, Shine, Sustain, and Standardize are the 5S methods. 5S methods effects for all trouble symptoms. 5S methods Usage is No matter how long we take the 5-S remedy, it is very effective, and there are no side effects. 5S methods are once implemented, never discontinue improving.

### Objectives:

1. Study and critical review of Total Quality Management principles applicable in Car manufacturing.

2. Identifying key points in implementation of Total Quality Management principles in car manufacturing companies in India.

3. Establish challenges and barriers.

4. Conduct a case study and draw conclusions to address the barriers

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# ABSTRACT

Implementation of Total Quality Management (TQM) approach is playing a vital role in the survival and growth of many industries.  Indian automobile sector has also adopted TQM path but it is still a player of little consequence in the global auto market. This study is based on the application of TQM in an Indian automobile manufacturing firm, Maruti Suzuki.

The main objective of this paper is to provide empirical evidence on different level of management’s awareness and understanding of the quality management and its role towards business survival and competitiveness. Business is based on the quality of product and services and it is very important to maintain the quality of goods in any business process. This current research will help find the objective in application of TQM.

This research starts with introduction to define the importance and application of total quality management. Main purpose of doing this chapter to finding the aim, objective, background of the study, research question, and background of the company. In second section is literature review, it is the total conceptual framework of the whole research. In the third chapter the research methodology is been discussed. Research methodology plays a key role in the whole research. Appropriate research design, method, philosophy, and approaches help to choose the right methodology.

Data is collected a simple email survey sent out randomly to the employees of a particular location . A questionnaire survey has been done through online for the case study and the questionnaire was checked for reliability and validity by experts and practitioners. Only 20 members have participated in the survey. The survey findings indicate that Maruti Suzuki organization is well aware of TQM practices and the implementation level too is more than moderate with the awareness level. The suitability of adapting to small-medium manufacturing organizations is also discussed on a surface level.

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# 1. INTRODUCTION

India has one of the biggest automobile markets in the world and it is also one of the leading ones in terms of growth. The commercial and passenger car industry in India is one of the top ten of its kind on a global scale. Over the last few decade, the car market in India has been in a burgeoning stage with all types of cars flooding the market in order to meet the demands of Indian customers who are increasingly exposed to state-of-the-world automobiles and want the best when it comes to purchasing a car.

In 1897, the first car ran on an Indian road. Through the 1930s, cars were only imported, and in very small numbers. An embryonic automotive industry emerged in India in the 1940s. The Indian automobile industry seems to come a long way since the first car that was manufactured in Mumbai in 1898. The automobile sector today is one of the key sectors of the country contributing majorly to the economy of India.

The past few years has seen a rapid rise in the Indian Automotive Sector. Economic reforms and deregulation have helped it to become one of the fastest growing industries globally. With an annual production of more than 3.7 million units in 2010, today India stands in the seventh position in the passenger vehicle manufacturing segment.

India is taking the route of Total Quality Management. There has been steady growth in the automobile sector, but, India is still a player of little consequence in the world auto market. This lack of international market penetration has been mirrored by a lack of continuing development of TQM.

## 1.1 Why Total Quality Management?

Quality is something that has been since the ages. It is not new to the modern market. Quality is a term which is noteworthy to both the producer and the customer. Total Quality Management is so widespread today that it has become one of the management strategies with the objective of ensuring customer satisfaction and loyalty, besides improving products and service quality reinforcing continuous improvement known as Kaizen. TQM is the only instrument to either maintain competitive advantage or survive competitive disadvantage (Spitzer et al., 1995)

Total Quality Management is the major factor in the business quality revolution that has proven itself to be one of the 20th century’s most powerful creator of sales and revenue growth, genuinely good new jobs, and soundly based sustainable business expansion (Lederer & Rhee, 1995).

The quality control process starts long before the first production models of a vehicle roll off the assembly line. When a car company releases a new product, they build prototypes, which are then tested to find weaknesses, mechanical problems and other details that could be improved. Once the prototypes have been vetted and polished, the design goes into production, where quality control continues on the production line, too. After being built, each car is tested for problems like fluid and air leaks, [mechanical problems](http://auto.howstuffworks.com/under-the-hood/diagnosing-car-problems/mechanical) and proper assembly.

You design a car, build a prototype, test the prototype and once you've worked out the kinks, start building production models. But, technological advances have made the crucial step of automotive quality control even more involved.

This study is basically to be clear about the total quality management and how TQM can be implemented in an automobile company and the pros and cons of implementation.

Quality management techniques and tools are instruments and methods that help to solve specific problems at different organization levels (Heinecke et al., 2004). There is a wealth of literature above all professional, on the specific tools related to quality management(B. G. Dale, Van Der Wiele, & Van Iwaarden, 2007) . They have been grouped according to different criteria and many classifications have been proposed, both in professional and academic literature; (Greene, 1993)describes up to 98 tools, grouped by the objectives set by companies.

The entire automotive industry has embraced quality tools, such as concurrent engineering, continuous improvement, and statistical process control but the main difficulty lies in determining what quality practices are the most likely to improve quality and overall firm performance. In the present paper, performance analysis of total quality management in a car manufacturing company is being carried out. The purpose of this study is to understand the effects of Total Quality Management on the overall business.

## 1.2 Objective of the study

**Primary:**

* To critically analyze the effects of implementing total quality management in car manufacturing companies in India.

**Secondary: Case Study of Maruti Suzuki**

* To understand the total quality management of the company.
* To evaluate the strategies of total quality management implemented in the company.
* To evaluate the pitfalls of implementing total quality management in Indian car manufacturing companies.

# 2. LITERATURE REVIEW

Total Quality Management aims at continuous improvement of quality of products and services through continuous feedback. Quality is something that people made an effort to achieve not just after it was defined but since several ages before. Quality is difficult to define but we all know when it is achieved and when it is not. The assessment of quality is subjective and it can vary from different perceptions of individuals. It is the perception of the individual, by what influences his experience and what he thinks. Quality is nothing but simply meeting the requirements and this has been expressed in many ways like use that is totally of features and characteristics of a product or service that bear on its ability to satisfy implied needs.

The word ***quality*** can mean different to different people.

The various definitions of Quality are as follows:

According to Business Dictionary,

In [manufacturing](http://www.businessdictionary.com/definition/manufacturer.html) quality means ‘a [measure](http://www.businessdictionary.com/definition/measure.html) of excellence or a state of being [free](http://www.businessdictionary.com/definition/free.html) from [defects](http://www.businessdictionary.com/definition/defect.html), [deficiencies](http://www.businessdictionary.com/definition/deficiency.html) and [significant](http://www.businessdictionary.com/definition/significant.html) [variations](http://www.businessdictionary.com/definition/variation.html)’. It is brought about by strict and [consistent](http://www.businessdictionary.com/definition/consistent.html) [commitment](http://www.businessdictionary.com/definition/commitment.html) to certain standards that [achieve](http://www.businessdictionary.com/definition/achieve.html) [uniformity](http://www.businessdictionary.com/definition/uniformity.html) of a [product](http://www.businessdictionary.com/definition/product.html) in [order](http://www.businessdictionary.com/definition/order.html) to satisfy specific [customer](http://www.businessdictionary.com/definition/customer.html) or [user](http://www.businessdictionary.com/definition/user.html) [requirements](http://www.businessdictionary.com/definition/requirements.html). ISO 8402-1986 [standard](http://www.businessdictionary.com/definition/standard.html) [defines](http://www.businessdictionary.com/definition/define.html) quality as "the totality of [features](http://www.businessdictionary.com/definition/feature.html) and [characteristics](http://www.businessdictionary.com/definition/characteristic.html) of a product or [service](http://www.businessdictionary.com/definition/final-good-service.html) that [bears](http://www.businessdictionary.com/definition/bear.html) its [ability](http://www.businessdictionary.com/definition/ability.html) to satisfy stated or implied [needs](http://www.businessdictionary.com/definition/need.html)." If an [automobile](http://www.businessdictionary.com/definition/automobile.html) [company](http://www.businessdictionary.com/definition/company.html) finds a defect in one of their cars and makes a product [recall](http://www.businessdictionary.com/definition/recall.html), customer [reliability](http://www.businessdictionary.com/definition/reliability.html) and therefore [production](http://www.businessdictionary.com/definition/production.html) will decrease because [trust](http://www.businessdictionary.com/definition/trust.html) will be lost in the car's quality,

The ability of a product or service to meet customer needs.

Meeting or exceeding customer requirements now and in the future.

The integrity in delivering what a customer has a legitimate right to expect in view of what was promised at the time of agreement or purchase.

Good quality means a predictable degree of uniformity and dependability with a quality standard suited to the customer.

* By W. Edwards Deming

Conformance to requirement is widely used in industry to define quality.

* By Philip Crosby

Fitness for purpose or use of the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs.

* By Dr.Joseph Juran.

Total Quality Management is defined as both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization.

Total Quality Management can be understood as:

Total – Made up of the whole.

Quality – The degree of excellence a product or service provides.

Management – The act or manner of handling, controlling, directing, etc.,

Total Quality Management is the art of managing the whole to achieve excellence.

## 2.1 History of Total Quality Management

The history of quality management, from mere 'inspection' to Total Quality Management, and its modern 'branded interpretations such as '[Six Sigma](http://www.businessballs.com/sixsigma.htm)', has led to the development of essential processes, ideas, theories and tools that are central to organizational development, change management, and the performance improvements that are generally desired for individuals, teams and organizations.

Before the concepts and ideas of TQM were determined, much work had taken place over the centuries to reach this stage.

During the early days of Indian manufacturing, an operative’s work was inspected and a decision made whether to accept or reject it. As businesses started growing larger, so too did this role, and full time inspection jobs were created.

The creation of this function has given rise to many problems like,

* Technical issues.
* Skilled labours were promoted to other levels.
* Operational jobs such as manufacturing were given to less skilled workers.
* Defective goods were accepted to increase productivity.

These various problems gave way to a separate inspection department headed by a chief inspector. This helped to properly identifying and addressing the issues and resolving them with fewer defects which improved quality. This was the case not only in India but all over the world.

Hence the quality control department evolved, supervised by a “quality control manager”, with responsibility for the inspection services and quality control engineering.

The inspections involved measuring, examining and testing the products, processes and services against specific requirements to ensure that each element adhered to set standards and guidelines.

Continuous Improvement trace back to Walter Shewhart who is said to be the Grand Father of Total Quality Management.

**Shewhart** joined the Western Electric Company in the year 1918 to assist their engineers in improving the quality of telephone hardware. Western Electric produced hardware for the Bell Telephone Company, which became the American Telephone and Telegraph Company (AT&T). The Western Electric Company manufactured telephone equipment for them and since 1905 its major plant was the Hawthorne Plant in Cicero.

He explained the importance of adapting management processes to create profitable situations for both businesses and consumers by promoting the utilization of his creation, the Statistical Process Control chart. Shewhart identified two categories of variation which he called “special‐cause” and “common‐cause” variation. He devised the control chart as a tool for distinguishing between the two. The various control charts that Shewhart proposed for variables and attributes include mean, range, np, p, c, and u charts. Shewhart reported that bringing a process into a state of statistical control, where there is only common‐cause variation and keeping it in control was needed to reduce waste and improve quality.

**Dr.W.Edwards Deming**, the Father of Quality is acknowledged as one of leading management thinkers in the field of quality. He was a statistician and a business consultant who contributed greatly in Japan’s recovery after the World War-II. His philosophy is co-operation and continual improvement which helps define mistakes as opportunities to improve.

He was very much influenced by the methods and techniques of Walter Shewhart. In the late l920’s Deming started applying Walter Shewhart’s statistical methods to non-manufacturing processes, particularly clerical, administrative and management activities. In 1939 Deming applied statistical process control to US Census Bureau techniques, which contributed to a six-fold improvement in productivity. Deming after a while was posted to Japan to be as an advisor to the Japanese Census. That is when Deming got the opportunity to closely involve with the Union of Japanese Scientists and Engineers (JUSE) and his career of lecturing to the Japanese on statistical methods and company-wide quality, a combination of techniques now known as Total Quality Management had begun.

Walter Shewhart originated the concept of the PDCA cycle and introduced it to Deming. Deming promoted the idea widely in the 1950s and it became known as the Deming Wheel.

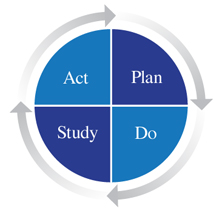


Figure 1

***Plan***  what is needed

***Do*** it

***Check*** that it works

***Act*** to correct any problems or improve performance

And Deming’s 14 point taken from the book “Out Of the Crisis” serve as management guidelines which was widely accepted in the Indian manufacturing companies.

* Create and communicate to all employees a statement of the aims and purposes of the company.
* Adapt to the new philosophy of the day; industries and economics are always changing.
* Build quality into a product throughout production.
* End the practice of awarding business on the basis of price tag alone; instead, try a long-term relationship based on established loyalty and trust.
* Work to constantly improve quality and productivity.
* Institute on-the-job training.
* Teach and institute leadership to improve all job functions.
* Drive out fear; create trust.
* Strive to reduce intradepartmental conflicts.
* Eliminate exhortations for the work force; instead, focus on the system and morale.
* (a) Eliminate work standard quotas for production. Substitute leadership methods for improvement.
* (b) Eliminate MBO. Avoid numerical goals. Alternatively, learn the capabilities of processes, and how to improve them.
* Remove barriers that rob people of pride of workmanship
* Educate with self-improvement programs.
* Include everyone in the company to accomplish the transformation.

Deming's ideas of hard work, sincerity, and personal responsibility, changed the world of management and greatly affected the Indian manufacturing industry.

***"It is not enough to just do your best or work hard. You must know what to work on."***

***- W. Edwards Deming***

**Joseph M. Juran** was a management consultant who developed the Quality Triology.

The Quality Triology includes quality planning, quality control and quality improvement.



Figure 2

He stated that Good quality management requires quality actions to be planned out, improved and controlled. Juran’s Trilogy is an approach to cross functional management that is composed of three managerial processes such as planning, control, and improvement.

He further explained these three processes as:

**Quality Planning** is the activity of developing the products and processes required to meet customer’s needs. It involves a series of steps. They are:

* Establish quality goals
* Identify the customers- those who will be impacted by the efforts to meet the goal.
* Determine the customers’ needs.
* Develop product features that meet the customers’ needs.
* Develop processes that are able to produce those product features.
* Establish process controls, and transfer the resulting plans to the operating forces.

Quality Control consists of steps:

* Evaluate actual quality performance
* Compare the performance to quality goals.
* Act on the variations.

**Quality Improvement** process involves, raising quality performance to unprecedented levels. The methodology consists of a series of steps:

* Establish the infrastructure needed to secure annual quality improvement.
* Identify the specific needs for improvement.
* For each project establish a project team with clear responsibility for bringing the project to a successful conclusion.
* Provide the resource, motivation, and training needed by the team to:
  1. Diagnose the cause.
  2. Stimulate establishment of remedies.
  3. Establish controls to hold the gains.

Juran’s 10 steps of Quality improvement are:

* Build awareness of the need and opportunity to improve
* Set goals for that improvement
* Create plans to reach the goals
* Provide training
* Conduct projects to solve problems
* Report on progress
* Give recognition for success
* Communicate results
* Keep score
* Maintain momentum

Juran has contributed more to the field and over a longer period of time than any other person, and yet, felt he had barely scratched the surface of his subject.

**Armand Vallin Feigenbaum** was an American quality control expert and businessman. He devised the concept of Total Quality Control, later known as Total Quality Management

He defined Total Quality Control as,

Total quality control is an effective system for integrating the quality development, quality maintenance, and quality improvement efforts of the various groups in an organization so as to enable production and service at the most economical levels which allow full customer satisfaction.

Feigenbaum gave few elements of total quality which he said are of prime focus.

* Quality is the customers perception of what quality is, not what a company thinks it is
* Quality and cost are the same not different
* Quality is an individual and team commitment
* Quality and innovation are interrelated and mutually beneficial
* Managing Quality is managing the business
* Quality is a principal
* Quality is not a temporary or quick fix but a continuous process of improvement
* Productivity gained by cost effective demonstrably beneficial Quality investment
* Implement Quality by encompassing suppliers and customers in the system.

**Philip Crosby** was a management consulting. His response to the quality crisis was the principle of

***“Doing it right the first time “.***

He also include four major principles which he defined as levels of absolutes.

1. The First Absolute - The definition of quality is conformance to requirements (not as goodness)
2. The Second Absolute - The system of quality is prevention (not appraisal)
3. The Third Absolute - The performance standard is zero defects (not “that’s close enough”).
4. The Fourth Absolute - The measurement of quality is the price of nonconformance (not indexes)

Crosby’s promotion of zero defects paved the way for quality improvement in many companies.

**Kaoru Ishikawa** the most dominant leader in JUSE, Kaoru Ishikawa also served as president of the Japanese Society for Quality Control and the Musashi Institute of Technology and co-founded and served as president of the International Academy for Quality.

Kaoru Ishikawa talked about company-wide quality and he built on Feigenbaum’s concept of total quality and suggested that all employees have a greater role to play, arguing that an over-reliance on the quality professional would limit the potential for improvement. He stated that from top level management to the low level management everybody’s participation is required as every area in the organization affects the quality.

* Quality comes first, not short-term profits;
* The customer comes first, not the producer;
* Customers are the next process with no organizational barriers;
* Decisions are based on facts and data;
* Management is participatory and respectful of all employees;
* Management is driven by cross-functional committees covering product planning, product design, production planning, purchasing, manufacturing, sales, and distribution. (Ishikawa & Lu, 1985)

Today TQM Total Quality Management is the name for the philosophy of a broad and systemic approach to managing organizational quality.

Quality standards such as the [**ISO 9000 series**](http://asq.org/learn-about-quality/iso-9000/overview/overview.html) and quality award programs such as the **Deming Prize** and the [**Malcolm Baldrige National Quality Award**](http://asq.org/learn-about-quality/malcolm-baldrige-award/overview/overview.html) specify principles and processes that form Total Quality Management.

TQM uses facts, process measurement and statistical assessments, rather than personal opinions, experience-based practices, or arbitrarily set numerical targets. It makes clear distinction between processes and events – it uses different protocols for systemic issues and for incidents. It’s a different management paradigm, an unwavering business-wide dedication to long-term success via structured thinking, continuous improvement and focus on customer satisfaction.

## 2.2 TQM in Manufacturing:

The TQM concepts are practiced in the worldwide manufacturing community. The origins trace back to the aftermath of the world war two in Japan, where the Japanese needed efficient practices to enhance profitability in the Car manufacturing segment.

In a Traditional methodology, mass production systems are produce big batches of the same model. The repetitive practices decrease the costs at a greater extent.

In a dynamic global environment, this system is uncompetitive and can be fatal because you may suddenly get stuck with very high inventory of models and products customers don't want anymore. Global competitiveness can only be achieved by world class manufacturing systems like flexible manufacturing systems and Just-in-time systems which can produce high variety of products with small lot sizes and short changeover times.

In the Toyota factory in Japan, you can see cars of different models and colors alternate and flow in the same production line. The just-in-time system has made Toyota the benchmark of all other car companies in the world. In Japan, the growing trend in some industries, like metalworking, is to offer customers a "minimum order of one piece" at no extra charge. The assured formula for failure in the export market is to have long lead times, large minimum orders, with little or no product variety. With short lead times and set-up times, a lean and mean manufacturer can satisfy even "unreasonable" customers who frequently change their minds and their orders with short notice. TQ companies look at unreasonable customers as a gold mine, since competitors do not want to serve them.

TQM is has received global acceptance and every organization tries to follow and implement TQM. However, Sink feels that this rush to show the world that the TQM philosophy is being practiced by organizations is made without proper understanding of TQM (Sink, 1991). Dale and Lightburn also claim that not all companies are willing to embrace the fundamentals of TQM. It is argued that there is a considerable number of companies who are using all the popular quality management tools and techniques (B. Dale & Lightburn, 1992); however, these techniques, procedures and systems are used in a superficial manner. The main reasons for such a situation are lack of management commitment to the basic principles of TQM and quality improvements and ineffective leadership to direct the improvement process. The study carried out by Lewis to compare the attitudes of Spanish and American quality assurance managers reveals that many of the responses of both groups were incompatible with TQM principles. The general conclusion reached is that managers must be further educated in TQM principles.

## 2.3 TQM in India:

In the early 1980's, confederation of Indian industries (CII) has set up TQM practices in India and in 1982 quality circles were introduced for first time in India. Bharat Electronics Ltd, Bangalore and Bharat Heavy Electricals Ltd, Trichy were the ones who launched quality circles first, in India. In 1987, a TQM division was set up by the CII and this division had 21 companies agreed to contribute resources to it and formed the National committee on quality.

In 1991, the LPG (Liberalization Privatization and Globalization) has paved a way for many multi-national companies to operate in India through joint ventures with local companies, like Hero Honda and Maruti Suzuki, TVS, Escorts Yamaha. This brought about a lot of changes in the social and economic environment, developments in quality, control and assurance.

It is true that the effort on quality improvement will escalate only when it becomes an issue for survival and sustainability and that is dependent upon the intensity of fair competition in the market place.

A survey carried out by Singh to assess the status of TQM in India revealed that only 39 companies out of 1,000 surveyed are practicing TQM to some extent {Singh, 2010 #3}. However, it concluded that these organizations are not able to distinguish between TQM and quality control.

## 2.4 Evolution of TQM in Car manufacturing in India:

It is on record that the first motorcar on the streets of India was seen in 1897. Mumbai (earlier Bombay) had its first taxicabs by the turn of the century and in 1903, an American company began to operate a public taxi service with a fleet of 50 cars. Until 1930s, cars were directly imported until foreign manufacturers began to realize the vast potential India had with its vast distances and large population.

Indian automobile industry mainly focused on servicing, dealership, finance and maintenance of vehicles. Later, only after a decade from independence manufacturing started.

In the last decade, Indian manufacturing companies have imbibed world-class practices in manufacturing management. They are today being rated among the best. At the end of the first decade of the 21st century, Indian manufacturing companies are at par with the best in the world from a quality perspective. The next step will be to gain scale.

India’s interest in TQM came about from years of selfless contribution of one Japanese unsung hero, Professor Yoshikazu Tsuda who was invited by the CII to introduce TQM to the Indian manufacturing industry. He was the guide assigned by the Union of Japanese Scientists and Engineers (JUSE) which is responsible for TQM promotion in Japan and the world over. After the success of TQM implementation in Sundaram Clayton in India, Tsuda set up two clusters of 20 of Maruti’s top suppliers to take them through this journey. In 2001, K Mahesh of Sundram Brakes Linings got the first Deming Prize followed by others. Sona Koyo was among these companies!

Today, Mahindra & Mahindra, Tata Motors and others are pursuing this roadmap as well. The Nano has revolutionized the global automotive thrust towards affordable cars

## 2.5 Barriers to Total Quality Management:

Understanding the factors that are likely to impede the implementation of the TQM allows managers to develop more effective strategies for improving the chances of successfully deploy TQM and thereby to achieve excellence in the businesses (Jacobsen, 2008)

Study by [**Dr. Ali Mohammad**](https://ir.linkedin.com/pub/dr-ali-mohammad-mosadeghrad/26/953/223) **Mosadeghrad (2014)** adopted a pathological approach to understand why TQM programs fail. He identified 54 obstacles to successful TQM implementation. The most frequently mentioned reasons for TQM implementation failures include

* Insufficient education and training
* Lack of employees' involvement
* Lack of top-management support
* Inadequate resources
* Deficient leadership
* Lack of a quality-oriented culture
* Poor communication
* Lack of plan for change
* Employee resistance to the change program

(JOHNSON & KLEINER, 2013) argues that the main barriers were found to be the lack of benchmarking and employee resistance to change. Organizations should realize that benchmarking can help understand the requirements that make for job success.  Moreover, it is arguably the most common method of establishing the validity of an assessment process. Benchmarking compares the results obtained from a test or a test battery with the current levels of performance of job incumbents, benchmarking thus is a form of concurrent validity.

Authors like (Sebastianelli & Tamimi, 2003) have identified five barriers in the implementation of TQM:

* Poor planning
* Practice management and development of human resources insufficient and inadequate
* Lack of quality planning
* The lack of leadership in the development of a quality culture
* Lack of customer orientation.

So the major barriers to implementation of Total Quality Management could me:

* Poor Strategic Planning
* Lack of long term vision
* Lack of Communication
* Human resources
* Employee’s resistance to Change
* No Benchmarking
* Lack of top level management support
* Lack of training and education
* Insufficient use of power
* Lack of co-ordination between departments
* Lack of co-ordination between employees
* Competitive markets
* Lack of Financial support
* Lack of focus
* Lack of evaluation and self-evaluation
* Ineffective correcting measures

A TQM process is unique. Commitment of top level management and motivation to middle level management to focus on long term goals and not short term helps achieving total quality in any organization. Team work is the key to achieve this.

# 3. METHODOLOGY

## 3.1 Quality Principles and Car Manufacturing

### 3.1.1 General TQM Principles:

It is generally accepted that the concept of TQM can be beneficial for firms and business, this is proved toward many examples of TQM practices by different companies throughout the world. (Fuentes-Fuentes, Albacete-Sáez, & Lloréns-Montes, 2004) Based on the reviews of many quality gurus, which happened before, the concept of the Total Quality Management can be summarized to six main principles.

1. Product and Service Quality

2. Customer Satisfaction

3. Leadership for continuous Improvement

4. Quality Systems and Employee Involvement

5. Competitiveness

6. Organization Benefit

However these principles are made as a general overview toward all the organizational activities. In other words, these principles are not specific for any particular firm or business. For the sake of this study and the fact that we want to analyze these principles in car manufacturing industry we need to look at them in car manufacturing point of view.

**ISO-9000 and QS-9000:**

ISO-9000 and QS-9000 standards are designed for audit of the quality system based upon the hypothesis that if a supplier has a good quality system in place, the supplier can be trusted for supply of good quality parts/products. ISO-9000 has twenty elements of requirements for examining the presence of an effective quality assurance system using TQM approach.QS-9000 also uses these same twenty elements of ISO-9000 as core requirements along with the auto industry's specific requirements, and individual customer's specific requirements.

### 3.1.2 Car manufacturing Characteristics:

Car manufacturing industry, like any other industry has special characteristics for itself which are special to it (Fandel & Reese, 1991). Any plan or practices to improve the industry cannot be effective without consideration of these characteristics. These characteristics are:

* The cast number of customers
* High cost
* Longer Product life time
* Frequent contact between customer and firm
* Consists of both production and service sector

Based on a study in 2007, there were six hundred cars and this count is believed to be doubled by 2030. Car Registrations in India increased to 228997 Cars in September from 224700 Cars in August of 2015. Car Registrations in India averaged 99002.65 Cars from 1991 until 2015, reaching an all-time high of 304900 Cars in March of 2012 and a record low of 6508 Cars in April of 1992. Car Registrations in India is reported by the Centre for Monitoring Indian Economy.

3.2 Research Design:

The design is the basic plan for a piece of empirical research, and includes main ideas such as strategy, sample, and the tools and procedures to be used for collecting and analyzing empirical data (Punch, 2000). The role of research design is to connect the questions to data. Design sits between the two, showing how the research questions will be connected to the data, and the tools and procedures to use in answering them.

## 3.3 [Quantitative Research](http://atlasti.com/quantitative-software/)

It is considered to have it as a main purpose, the quantification of data. This allows generalization of results from a sample to an entire population of interest and the measurement of the incidence of various views and opinions in a given sample. Yet, quantitative research is not infrequently followed by qualitative research which then aims to explore select findings further. In the quantitative research 20 questions will be through to the customer/ employee/ laborer. In the quantitative method sample size will be 50-55 and each question must have 3-5options. Quantitative research method consumes time but, this process is considered to be the easier one and this method is based on numbers. The advantage of a quantitative method is that, it is possible to measure the reactions of many great people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data.

The main differences between quantitative and qualitative research consist in respect to data sample, [data collection](http://atlasti.com/data-collection/), [data analysis](http://atlasti.com/analyzing-data-data-analysis/), and last but not least in regard to outcomes.

## 3.4 Qualitative research:

Data collection in qualitative research is not seldom based on unstructured or semi-structured, but methodologically flexible techniques, e.g. individual depth interviews or group discussions, which are suited to elicit great detail and a comprehensive view. Quantitative research uses highly structured, rigid techniques such as online questionnaires, on-street or telephone interviews. Unlike qualitative research, which allows unlimited expression from respondents, quantitative research relies responses to pre-formulated questions.

In order to avoid their respective disadvantages, one important way to strengthen a research design is to use both qualitative and quantitative methods. A number of research strategies are available for conducting social sciences: Experiments, surveys, histories, case studies, and the analysis of archival information. The kinds of research strategies adopted in a study should be dependent on three conditions: The type of research questions, the control an investigator has over actual behavioral events, and the focus on contemporary, as opposed to historical, phenomena. However, the first and most important condition for differentiating among the various research strategies is to identify the type of research questions being asked (Yin, 1989).

**Indian Car Sales Figures & Analysis:**

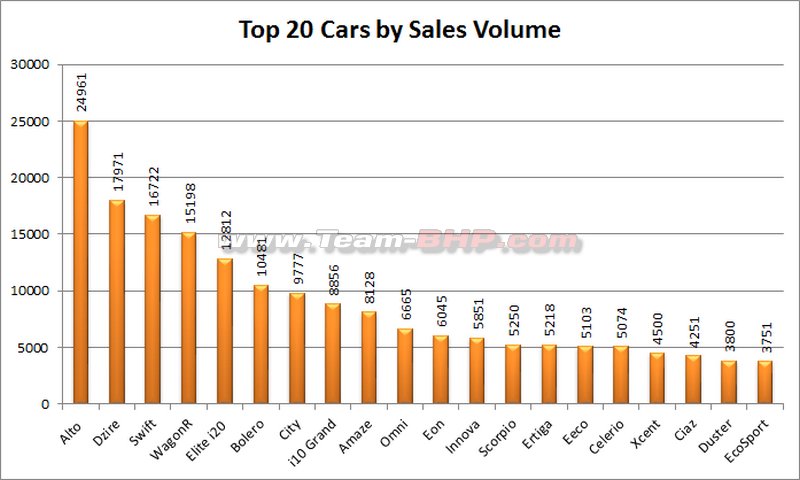
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Figure 3*Source: (Support, 2015)*

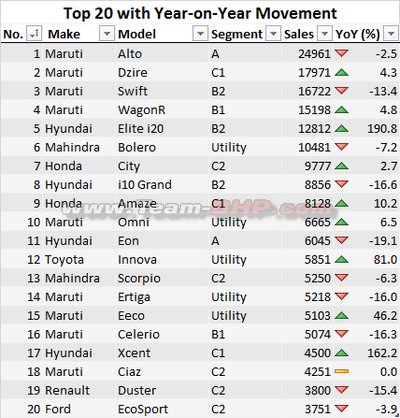


Figure 4 *Source: (Support, 2015)*

Second characteristics of car manufacturing industry is that fact that car production is a costly procedure. (Ogden, Williams, & Larson, 2004) In comparison to the number of cars in the world car production is considered to be a costly procedure.

Although the life period of a car depends on various factors, the average life time of a car is between 15 and 20 years. Additionally, cars need constant repair and service. These features produce a unique customer-firm relationship.

Car manufacturing is a vast industry and consists of both production and service sections. Moreover these sections need to be in constant contact to get the desirable result. Emphasis on either of them is not enough for this industry.

## 3.5 Quality Principles in Car manufacturing:

Almost all the car manufacturers in India are not originally Indian. The design and efficiency of cars originally take place in their original countries. The manufacturing plants in India are mostly engaged in assembling of the parts. Thus, the quality principles that are applicable can be modified as:

Customer Satisfaction

Continuous Improvement

Leadership and communication

Employee participation

Dealer’s performance

## 3.6 Limitations:

The study is restricted to India.

The study analysis is restricted to MARUTI SUZUKI India Limited.

## 3.7 Questionnaire Survey:

**What is TQM** and **the overall business performance within TQM** are the two basic questions that are descriptive in nature. This descriptive study helps to collect, organize, and summarize information about the matter being studied

The research question**-“What are the effects of TQM implementation on overall business performance in car manufacturing company, Maruti Suzuki in India?”-** is to examine the effects of TQM implementation on overall business performance. Two theoretical models were derived from the existing theories. According to (Punch, 2000), a theory verification study aims to test a theory or, more accurately, to test hypothesis derived from the existing theory. It is a common practice in social science areas that have traditionally emphasized quantitative research. Such a study starts with a theory, deduces hypotheses from it, and proceeds to test these hypotheses. Thus, a questionnaire survey was the most appropriate strategy to answer this research question. Online questionnaires too help in covering a wider population. This way helps in lowering the cost when compared to the other methods. A questionnaire survey can be used only when the objective of the study is clear and not complex (Bourque & Fielder, 1995). In the area of TQM implementation, much research has been conducted using questionnaire surveys to collect information (Forza & Filippini, 1998). These researchers tested the effects of TQM implementation on overall business performance using questionnaire surveys. In this study, the questionnaire survey was used to obtain information about TQM implementation and overall business performance from a wide range of Indian car manufacturing firms. Such data could be used to examine the effects of TQM implementation on these firms’ overall business performance.

Currently Automobile Industry in India is growing very rapidly. It appears that the manufacturing sector activities in India is going to be driven to a very large extend by the automobile sector. The small car segment in Indian automobile sector is very large which forms the corner stone, of this growth which would probably the pivot around which the automobile sector in India would resolve in years to come.

a) Study & Classify Car market based on segments like – small car, Hatch back, Sedan Class, premium Sedan, SUV & MUV and Luxury Car.

b) Study on purchase decision process.

c) Broad classification of behaviors and their effect on various car segments.

### 3.7.1 Awareness of Quality Management:

Due to the importance of quality practices in the Organizations, this question was used to determine the number of organizations which are aware of these practices. Awareness is the state or ability to perceive, to feel, or to be conscious of events, objects or sensory patterns. The answers to this question were invariably yes, and it is probably safe to assume that if the answer had been no then the respondent would not be in a position to answer the rest of the questions. However, it is generally true that, TQM and its implications for marketing are well known among the manufacturers in India and a unanimous positive reply was expected. Most of the Indian companies have adopted ISO 9000 as a starting point in their quality journey. India is at number eights position in the survey of 2005. Most of the companies which are ISO 9000 certified are from manufacturing sector. The companies were asked to indicate their awareness about Quality management. The table below shows that 100% of the companies are aware of Total quality management along with ISO 9000.

**Comprehension Level of TQM**

|  |  |  |  |
| --- | --- | --- | --- |
| Comprehension Level |  | Frequency | % |
| Heard of Total Quality Management | YES | 50 | 100 |
|  | NO | 0 | 0 |

Table 1 Comprehension Level of TQM

The depicted Figure shows that, an overwhelming 55% of the respondents said that, the importance of Quality management has increased significantly over the last 10 years. And 40% felt that quality today has become critical to their operations. Only 4% felt that the importance of quality management has increased only marginally and 1% felt that its importance has remained the same.

**QUALITY MANAGEMENT ISSUE IMPORTANCE**

Figure 5

## 3.7.2 HYPOTHESIS:

1) H1 – There is no significant influence of TQM implementation on high productivity and quality at Suzuki Motors.

2) H2 - There is a significant influence of TQM implementation on high productivity and quality at Suzuki Motors.

# 4. Data Collection Method:

Data collected from the case study. The Maruti Suzuki car company, was taken as a case study. The survey was intended to be a random collection of the general perspective of Maruti employees. Therefore an email based survey questionnaire was sent out and 20 employees from different departments from the company such as management, design, manufacturing, procurement and human resources were participated in the survey.

Since the background of the participants is not constrained the opinions expressed can be taken in objective sense without any biased pre supposition.

The following section gives an over view of the target organization-Maruti Suzuki.

## 4.1 Case study: Maruti Suzuki in India

Maruti Suzuki has been in existence since 1982 .The passenger car landscape has changed considerably since its inception .It is India’s largest passenger vehicle company with a market share close to 40%.

* **Year of inception : Setup in 1982**
* **Equity Structure : 56.2 % Suzuki, 43.8% with Public**
* **Market Share : 43 %(approximately)**
* **Plants : 6 Plants in Gurgaon & Manesar**
* **Models : 14 Models with over 160+ variants**
* **Net Production/ Sales : 1.15 million units p.a./ Rs.426,448**
* **Net Profit : Rs.27, 831 Million**
* **Manpower : 14000+ Employees**
* **Joint ventures : 20 Joint ventures for components**
* **Customer Satisfaction : No.1 in JD Power Customer**

**satisfaction for 13years in a row.**

**CRISIL Ratings**

The Company has been awarded the highest financial credit rating of AAA/stable (long term) and A1+ (short term) on its bank facilities by CRISIL. The rating underscores the financial strength of the Company in terms of the highest safety with regard to timely fulfillment of its financial obligations.

**QUALITY**

The Company has again been awarded ISO: 27001certification by STQC Directorate (Standardizations, Testing and Quality Certificate), Ministry of Communications and Information Technology, Government of India after re-assessment.

The Company is thus certified to meet international standards for maintaining information security. During the year, ISO 14001 re-certification audits were carried out by M/s AVI, Belgium and the auditors renewed the ISO 14001 certificate till 2014. The quality management system of the Company is certified against ISO 9001:2008 standard.

ACCOLADES

Maruti Suzuki is the leading car and car-products manufacturer in India. So it's no surprise that the company has been showered with awards ever since its inception! It would be impossible to list all the awards won by the company.

**"Manufacturer of the Year" by CNBC TV18 Overdrive.**

**For the 15th year in a row, customers rated Maruti Suzuki as Number One in Customer Satisfaction Index (CSI) Study.**

Market leader Maruti Suzuki emerged at the top in the JD Power Asia Pacific 2005 India Initial Quality study awards, with three of its models - Alto, Swift and Esteem - bagging first position in their respective categories.

During 2009–10, the company, its products and services received reputed awards and accolades instituted by independent expert groups, media houses and research agencies.

These include

* Rated as No. 1 in J D Power Sales Satisfaction Index
* Hatchback of the year – Ritz by Auto-car
* Car of the year – Ritz by Business Motoring
* Manufacturer of the year by CNBC Overdrive
* Ranked third amongst global car companies in the World's Most Reputed Company Survey 2009
* National Award for Excellence in Corporate Governance by ICSI

## 4.2 IMPACT

Human Resource Development

The Company provides tremendous learning and development opportunities to its employees starting from induction and orientation when a new employee joins the Company. The Company believes that to have a sustainable competitive advantage in the new knowledge economy, learning would be the key catalyst for an organization’s survival and success. The Company’s extensive training calendar encompasses training programs for all categories of employees i.e. associates, supervisors and those at junior, middle, senior and top management level. To have a well-rounded development of employees, the training calendar comprises of behavioral, functional and safety trainings. The training programs vary according to the need of the employees at various levels and business requirements and are designed after doing a thorough process of three stage need identification.

**Leadership:**

What's interesting about the TQM environment is leadership does not bully employees, but rather provides support and encourages growth. A key part in this approach is to promote an encouraging environment where managers and employees respect one another. It does not believe in engaging in punishment when things do not go right. Instead, leaders who follow TQM philosophies work with their employees to resolve the problem and focus on ways of improvement for the future. They recognize low morale does not benefit the employees or the organization, and as a result offer motivation and encouragement. In the TQM workplace, it is highly unlikely you will find any degrading behavior occurring.

**Teamwork:**

TQM roots and prides itself with utilizing teamwork. And Maruti Suzuki believes that teams which come together and work well with one another typically bring inventive ideas and strong performances to their jobs. Overall an emphasis on teamwork nurtures a happy work environment and benefits both the internal members of the company and the external community members.

**Integrity:**

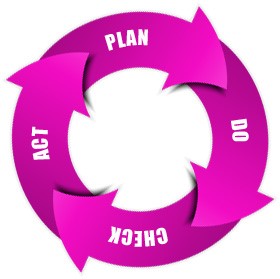
Strong ethics are deeply entwined with TQM principles. Maruti Suzuki has embrace these concepts that are helping them to make ethically sound decisions and the right choices. As a result, solid business practices result and this has been adding up a significant value to their organization.

**Focus is on the customer:**

TQM philosophies accept and understand this notion that “Customers are the heart of a successful business”; without them, there would be no growth or achievement. Maruti Suzuki strongly believes this and follows it. The TQM centered company like this organization expects all managers and employees will commit themselves to providing the best customer service possible. If any weaknesses or dissatisfaction arise, TQM helps stipulate everyone’s hard work to improve or come up with a solution.

**The Quality Policy of Maruti Suzuki:**

Consumer satisfaction through continuous improvement of our products and services by following PDCA in all functions and levels out of organization.



**Training:**

Maruti arranges the training at several intervals. The training is mandatory for all the employees. The training schedule of all employees is maintained by the HR manager.

**Training Details**

The strength of any organization is its manpower. Each organization would like to have executives who are well trained so that they can be more productive. The vehicle manufacturers conduct several trainings so that they can achieve their goals. In the Training master form, you can enter the information about the training, which have been conducted during a particular time period. We are also maintaining the information regarding the attendance of the executives in a specific training. That is, how many executives out of the given list have attended the training? With the help of these training details we are generating various MIS reports. The details provided here can help the management to find out an efficient person for a special task. Searching facility is also available, so you can find out the total information of a particular training with just one click over there.

This company is following quality programs such as Quality Control Circle, Justin-time, Statistical Process Control, Quality Audit, Total Productivity Maintenance 85 (TPM), FMEA, the PDCA (Plan, Do, Check, Act) cycle, 5 ‘S’, Kaizen and QFD. The quality tools include check list, flow chart, 7 Quality Control tools and 7 new management tools. According to JUSE, TQM is a set of systematic activities carried out by the entire organization to achieve effectively its objectives to provide products or services at a quality that satisfies customers at the appropriate time and price. And the shortest way to Deming is to undertake only those activities that are really necessary for its business and which are unique to its business and scale.

Implementation of TQM in this company has not led to any change in the organization structure. Neither has any additional staff been employed for the purpose of implementing TQM. Interestingly, the Maruti Suzuki Company adapted to the TQM concepts and assimilated them in its own 'Maruti Suzuki culture'. The company encourages and allows its employees to identify and diagnose quality problems and to take corrective actions without going through the management hierarchy.

Factors Facilitating Successful Implementation of TQM There are certain factors considered and found by many experts and researchers to be important and necessary for the successful implementation of TQM. Such factors identified from survey of empirical studies were presented to the twenty employees who were selected for interview. Their agreement on these factors as facilitating successful implementation of TQM is presented in the following table.

Upper management commitment, developing employee involvement, close cooperation among functions, orientation to improve quality, use of quality tools, orientation to teamwork, increasing customer orientation, and identifying customer requirements and needs are unequivocally accepted as facilitating factors for the successful implementation of TQM in this company.

Next to the above, these respondents consider employee empowerment, improving communication between management and labour, quality training, fast response to customer needs and orientation to improve productivity as facilitators for the successful implementation of TQM. While one out of ten is not sure, all others agree that quick decision making process and achievement of a positive change orientation have been important for the successful implementation of TQM.

Role of the quality department as a facilitator for the successful implementation of TQM is not agreed by three out of twenty; six are not sure about the role of the quality department. Only three persons strongly agree on the facilitating role of the quality department. Orientation towards exports and attracting foreign investments have not been the facilitators or driving forces for the successful implementation of TQM, for only six and five out of twenty agree respectively on these two factors. Disagreement and equivocation are found on these two factors besides the role of the quality department.

**Success Factors Descriptive**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Mean Rank** | **Facilitating Factors** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| 01 | Upper management commitment and involvement | 1.00 | 2.00 | 1.9500 | .2238 |
| 02 | Developing employee involvement | 1.00 | 2.00 | 1.9000 | .3071 |
| 03 | Improving quality | 1.00 | 2.00 | 1.9000 | .3071 |
| 04 | Teamwork | 1.00 | 2.00 | 1.9000 | .3071 |
| 05 | Use of quality tools | 1.00 | 2.00 | 1.8000 | .4238 |
| 06 | Quality training | .00 | 2.00 | 1.7500 | .5489 |
| 07 | Identifying customer requirements and needs | 1.00 | 2.00 | 1.7500 | .4451 |
| 08 | Increasing customer orientation | 1.00 | 2.00 | 1.6500 | .4888 |
| 09 | Fast response to customer needs | 0.00 | 2.00 | 1.6500 | .5865 |
| 10 | Employee empowerment | 0.00 | 2.00 | 1.5500 | .6044 |
| 11 | Close cooperation among functions | 1.00 | 2.00 | 1.5500 | .5108 |
| 12 | Improving communication between management and labor | 0.00 | 2.00 | 1.4500 | .6048 |
| 13 | Quick decision making process | 0.00 | 2.00 | 1.3500 | .6708 |
| 14 | Achieving positive change | 0.00 | 2.00 | 1.3500 | .6708 |
| 15 | Improving productivity | 0.00 | 2.00 | 1.3000 | .5712 |
| 16 | Role of the quality department | 1.00 | 2.00 | 0.5500 | .9445 |

Table 2 Success Factors Descriptive

The most important factors for the successful implementation of TQM at Maruti Suzuki are:

upper management commitment and involvement, developing employee involvement, orientation to quality improvement, teamwork, and use of quality tools, identifying customer requirements and needs, and increasing customer orientation. Top management commitment is the first prerequisite for a firm’s TQM implementation efforts. Lack of management commitment is one of the reasons for the failure of TQM efforts. Top managers need to demonstrate their commitment through their actions rather than words. Top management commitment can positively affect employees’ commitment to TQM and culturally change people involved. If top management views quality as more important than cost, more important than meeting production schedules, employees’ quality awareness is easily improved. To implement TQM, top managers should be committed to establishing a firm that continually views quality as a primary goal.

Quality training is rated high, but there is a little equivocation as indicated by the relatively higher standard deviation (few respondents neither agrees nor disagrees). The manager interviewed reported that there is almost always some kind of employee quality training going on in our plant.

Fast response to customer needs, employee empowerment, orientation to improve productivity, improving communication between management and labor are also found to be important factors. Quick decision making process, achievement of a positive change orientation and orientation to improvement in productivity come next to these factors as facilitators for the successful implementation of TQM.

# 5. DATA ANALYSIS AND INTERPRETATION

A survey was conducted in the Maruti Suzuki Company. 20 employees from different departments of the company such as management, design, manufacturing, procurement and human resources participated in the survey.

Overview of the data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics (No. of Survey Questions)** | **No. of employees Participated** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** |
| Top management actively participating in quality management activities | 20 | 3.00 | 5.00 | 4.250 | 0.63870 |
| Top management learns quality related concepts and skills | 20 | 3.00 | 5.00 | 4.100 | 0.64072 |
| Top management strongly encourages employee involvement in quality related activities | 20 | 3.00 | 5.00 | 4.250 | 0.71635 |
| Management empowers employees to solve quality issues | 20 | 3.00 | 5.00 | 4.300 | 0.65695 |
| Arrange adequate resources for employee education and training | 20 | 3.00 | 5.00 | 4.100 | 0.71818 |
| Discussion on quality issues in management meetings | 20 | 3.00 | 5.00 | 4.200 | 0.61559 |
| Focus on product quality rather than yields | 20 | 3.00 | 5.00 | 4.100 | 0.64072 |
| Pursuing long-term business success | 20 | 3.00 | 5.00 | 4.250 | 0.63867 |
| Establishing long-term co-operative relations with suppliers | 20 | 3.00 | 5.00 | .300 | 0.65695 |
| Firm regards product quality as the most important factor in selecting suppliers | 20 | 3.00 | 5.00 | 4.100 | 0.64072 |
| Firm’s participation in supplier activities related to quality | 20 | 3.00 | 5.00 | 4.100 | 0.71818 |
| Providing feedback on the  performance of suppliers’ products | 20 | 3.00 | 5.00 | 4.250 | 0.71635 |
| Recording detailed  information about  supplier performance | 20 | 3.00 | 5.00 | 3.800 | 0.83351 |
| Regularly supplier quality audit | 20 | 3.00 | 5.00 | 4.250 | 0.71635 |
| Having clear long-term vision statement | 20 | 3.00 | 5.00 | 3.800 | 0.76777 |
| Vision effectively  encouraging employees’  commitment to quality  management | 20 | 3.00 | 5.00 | 3.750 | 0.71635 |

Table 3 overview of the data

# 6. FINDINGS AND DISCUSSION

This section consists of the data acquired through the qualitative interview approach. The primary objective of the research study is to analyze the adoption of total quality management in a car manufacturing company and ISO 9001 in India and also evaluate strategies and pitfalls of implementation. The survey questionnaire was formulated from past literature dealing with dimensions of Total Quality Management.

The first aspects to be investigated were the general background of the respondents, such as the job position of respondents in the company, company size, company ownership, and length of time involved in TQM, the certification and the awards received. The findings reveal that a majority of respondents were to the survey were mainly the middle level management like the Quality Manager of the company as they are directly involved and have firsthand knowledge and experience of quality implementation program in their companies.

Figure 6 Respondents survey

Before the era of economic liberalization in India, i.e., till the late 1980s, the automobile manufacturing sector in India had been stagnant; there were few indigenous auto manufacturers. One significant event - the start of a new era for Indian automobile manufacturing was when, in 1983, Maruti, the Government of India and Suzuki started manufacturing small cars. With liberalization came increased competition and manufacturers came under pressure to improve quality this was necessary for growth in this competitive market, and, indeed, for survival, automakers begun to implement formal quality improvement programs, including TQM.

Since objective of this study is to analyze the effects of implementing the Total Quality Management in a car manufacturing company like Maruti Suzuki in India.

Our study criteria shows that the Maruti Suzuki Company is the prominent player in the market and it contributes about 22 percent of the country’s manufacturing industry gross domestic product. It occupies about 43 percent of market’s share.

A questionnaire survey has been done in the organization to know how TQM has made an impact in the organization and on them. In the report of survey, 20 members have participated, the response is positive and effective. The analysis shows that the company practices various quality programs to achieve the objectives of the company. Maruti Suzuki’s main objective is to satisfy its customers like every other organization and to build a trust like relationship with its customers.

Implementation of TQM in this company has not made any changes in its organizational structure or in the size of the organization. The organization is educating its employees about TQM by making them go through various training programs which will help them to work efficiently and effectively to achieve the goals and objectives of the organization.

The results show that there is quite an emphasis for achieving quality and Continuous improvement in the organization. The ground level scenario from the results suggests that the mid-level manager are more interested in responding to a quality based survey. However this is a subjective inference which cannot be totally validated in an objective sense.

The effects of implementation of TQM clearly show a positive attitude towards the organization. Past research on this organization shows due to the magnanimity of the organization, the implementation of TQM and evaluation of its effects is quite challenging. This statements defeats the purpose of the project, however the idea can be drawn on the current state and apply to other emerging manufacturing companies in Indian context.

The Results clearly show the keenness to get involved with quality at the mid-level managerial positions where the clarity of achieving quality is essential.

# 7. FUTURE SCOPE

The research projects an elementary effort to examine and evaluate the TQM implementation in an Indian Car manufacturing company. This research project touches base with the ground reality of TQM implementation. This can be further emphasized in small to medium manufacturing companies. The following recommendations are suggested

* 1. Inception of TQM principles in small to medium companies from the beginning
  2. Education and awareness programs for staff and stakeholders

India being an emerging economy, the future scope of a manufacturing is quite positive. And the TQM inception will benefit the organization and country in an objective context.

# 8. CONCLUSION

The research project is an effort to evaluate the TQM implementation in Maruti Suzuki. The perception of quality in India is being skeptical, however this research proves otherwise. The urge for achieving higher quality products and customer service is on an increasing trend.

A detailed intensive analysis is done on Total Quality Management (TQM) in a supply chain including commitment of management. The research work is confined to a multinational company Maruti Suzuki. More over research is needed to prove its suitability for other national and international company. There is a future scope for this research is to study optimizing availability of both new and existing multiple varied technologies within the business. Thus, starting from product design to supplier certification, the total quality management (TQM) approach can be effectively implemented for achieving quality excellence and competitiveness in a world market place. In India, Maruti Suzuki have successfully implemented the TQM approach for gaining a competitive edge in the Indian marketplace. An understanding of TQM, its philosophy and development of a vision are the necessary requirements for future quality goals.

The research project suggest the healthy increase in TQM implementation in a multinational organization based in India. This can be a model organization to other budding small to medium manufacturing companies. However a detailed research is needed to prove its suitability for smaller organizations. The point is that it can be seen as a model organization.

The achievement of this research is that it gained a surface level understanding of the TQM, its philosophy and development in Maruti and it can be concluded that there is a possibility of successful implementation into a wide spread small to medium organization from their inception.

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**10. Apendix**

**Success Factors of TQM Implementation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Facilitating Factors | Strongly Agree | Agree | Undecided | Disagree | Strongly Disagree |
| Upper management commitment and involvement | **18** | **2** |  |  |  |
| Developing employee involvement | **17** | **3** |  |  |  |
| Employee empowerment | **11** | **6** | **2** |  |  |
| Improving communication between management and labour | **9** | **8** | **2** |  |  |
| Quick decision making process | **7** | **8** | **5** |  |  |
| Close cooperation among functions | **9** | **11** |  |  |  |
| Achieving positive change | **8** | **9** | **3** |  |  |
| Improving quality | **17** | **3** |  |  |  |
| Quality training | **18** | **2** |  |  |  |
| Use of quality tools | **17** | **3** |  |  |  |
| Role of the quality department | **4** | **9** | **5** | **2** |  |
| Teamwork | **18** | **2** |  |  |  |
| Increasing customer orientation | **12** | **8** |  |  |  |
| Identifying customer requirements and needs | **16** | **4** |  |  |  |
| Fast response to customer needs | **13** | **5** | **2** |  |  |
| Improving productivity | **6** | **11** | **3** |  |  |

Table 4 Success Factors of TQM Implementation