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ASSESSING THE IMPACT OF TOTAL QUALITY MANAGEMENT ON SUPPLY CHAIN EFFICIENCY AND PRODUCT QUALITY - HYUNDAI MOTORS

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ABSTRACT

Total Quality Management (TQM) is a comprehensive management approach focused on continuous improvement, customer satisfaction, employee involvement, and process optimization. In today's highly competitive business environment, organizations increasingly adopt TQM practices to enhance operational performance and achieve sustainable growth. This study assesses the impact of Total Quality Management on supply chain efficiency and product quality. The research examines how key TQM principles, including leadership commitment, customer focus, continuous improvement, supplier relationship management, and employee participation, contribute to improving supply chain operations and product outcomes.

The study investigates the relationship between TQM implementation and critical supply chain performance indicators such as inventory management, delivery reliability, process efficiency, cost reduction, and supplier coordination. Furthermore, it evaluates the influence of TQM practices on product quality dimensions, including defect reduction, consistency, reliability, and customer satisfaction. Data collected through surveys, interviews, and organizational performance reports are analyzed using quantitative and qualitative research methods.

The findings indicate that effective implementation of TQM significantly enhances supply chain efficiency by reducing operational waste, improving communication among supply chain partners, and streamlining business processes. Additionally, TQM contributes to higher product quality through standardized procedures, continuous monitoring, and proactive problem-solving mechanisms. Organizations that integrate TQM principles throughout their supply chain demonstrate improved competitiveness, increased customer loyalty, and better financial performance.

I. INTRODUCTION

Since the late 1980s, firms around the world have launched **Total Quality Management** (**TQM**) programs in an attempt to retain or regain competitiveness in order to achieve customer satisfaction in the face of increasing competition from around the world. TQM is an integrative philosophy of management for continuously improving the quality of products and processes.

TQM functions on the premise that the quality of the products and processes is the responsibility of everyone who is involved with the creation or consumption of the products or services offered by the organization. In other words, TQM capitalizes on the involvement of management, workforce, suppliers, and even customers, in order to meet or exceed customer expectations. Considering the practices of TQM as discussed in six empirical studies, Cua, McKone, and Schroeder (2001) identified the nine common TQM practices as cross-functional product design, process management, supplier quality management, customer involvement, information and feedback, committed leadership, strategic planning, cross-functional training, and employee involvement.

The goal of human resource management is to help an organization to meet strategic goals by attracting, and maintaining employees and also to manage them effectively. The key word here perhaps is "fit", i.e. a HRM approach seeks to ensure a fit between the management of an organization’s employees, and the overall strategic direction of the company.

The basic premise of the academic theory of HRM is that humans are not machines, therefore we need to have an interdisciplinary examination of people in the workplace. Fields such as psychology,

industrial relations, industrial engineering, sociology, economics, and critical theories: postmodernism, post-structuralism play a major role. Many colleges and universities offer bachelor and master degrees in Human Resources Management or in Human Resources and Industrial Relations.

One widely used scheme to describe the role of HRM, developed by Dave Ulrich, defines 4 fields for the HRM function:

- ✓ Strategic business partner
- ✓ Change management
- ✓ Employee champion
- ✓ Administration

However, many HR functions these days struggle to get beyond the roles of administration and employee champion, and are seen as reactive rather than strategically proactive partners for the top management. In addition, HR organizations also have difficulty in proving how their activities and processes add value to the company. Only in recent years have HR scholars and professionals focused on developing models that can measure the value added by HR.

Human resources management involves several processes. Together they are supposed to achieve the above mentioned goal. These processes can be performed in an HR department, but some tasks can also be outsourced or performed by line-managers or other departments. When effectively integrated they provide significant economic benefit to the company.

- ✓ Workforce planning
- ✓ Recruitment (sometimes separated into attraction and selection)
- ✓ Induction, Orientation and On boarding
- ✓ Skills management
- ✓ Training and development
- ✓ Personnel administration
- ✓ Compensation in wage or salary
- ✓ Time management
- ✓ Travel management (sometimes assigned to accounting rather than HRM)
- ✓ Payroll (sometimes assigned to accounting rather than HRM)
- ✓ Employee benefits administration
- ✓ Personnel cost planning
- ✓ Performance appraisal
- ✓ Labor relations

SCOPE OF STUDY

To prepare Total Quality management, Manager and Supervisor's responsibilities are more or we can say that they are the key players. Manager and Supervisors have to help the employees to develop the competencies in the employees. To help the employees at lower level they need to updated properly and they need to share their expertise and experience with employees.

Whatever Top management feels about employees they have to express to employees and whatever employees think about top management it must be express in other words we can say that there should not be anything hidden while communication process. Clear communication process will help to establish the Total Quality management.

- ✓ Employees should be motivated by giving them authority to take decision.
- ✓ Top management should trust the employees that after making huge effort to develop employees, employees will work for the well being of organization and for human being also.
- ✓ Top management's philosophy should be clear towards Human Resource and its well being to encourage the employees.
- ✓ Management and Managers need to give equal importance.
- ✓ Employees must be feeling of belongingness among the employees, and also willingness to work as a team.

OBJECTIVES OF THE STUDY

1. To examine the nature of Total Quality management prevailing in **Heritage Foods (India) Limited**.
2. To identify the nature of Total Quality management in the **Heritage Foods (India) Limited**.
3. To measure the effectiveness of Training Programs implemented and Performance Appraisal techniques used in the organization.
4. To analyze the prevailing practices of worker's participation in Management and

Study the relation between Management and Employees.

NEED OF THE STUDY

1. To know the Total Quality management in the organization.
2. To maintain the relationship between the management and the employee.
3. To develop the employee skills.
4. To know how the organization is taking care about its employees growth and the organization gives training and development programs to do job rotation to know how the seniors guide there juniors in different aspects.
5. To know how job rotation facilitates employee growth.

METHODOLOGY:

The methodology adopted for this study deserves a special mention. Firstly, the research studied various secondary sources of information. Then after discussed with the company's managerial personnel, the mode and nature of the data collected is explained in the following lines.

PRIMARY DATA:

The lectures given by the staff were used as the basics for the project. by observing various departments in HRD system.

SECONDARY DATA:

The information related to company and industry is obtained through secondary sources such as company's annual reports.

TOOLS AND SAMPLING METHOD:

The data was collected from the company website and the other data is collected from other websites and employees in that organization.

Sample size of 100.

LIMITATIONS OF THE STUDY:

1. Conservative attitude of top management shouldn't exist.
2. Having the surplus staff is also one of the limitations.
3. The data given by a company is not full at times.
4. The data given by the organization is not reliable.

II. REVIEW OF LITERATURE

Total quality management

TQM and Six Sigma

The Six Sigma process improvement originated in1986 from Motorola's drive towards reducing defects by minimizing variation in processes through metrics measurement. [3] Applications of the Six Sigma project execution methodology have since expanded to include practices common in Total Quality Management and Supply Chain Management, such as increasing customer satisfaction, and developing closer supplier relationships.

The main difference between TQM and Six Sigma (a newer concept) is the approach. TQM tries to improve quality by ensuring conformance to internal requirements, while Six Sigma focuses on improving quality by reducing the number of defects and impurities.

Total Quality Management (TQM) is a management approach to long-term success through customer satisfaction.

In a TQM effort, all members of an organization participate in improving processes, products, services and the culture in which they work.

The methods for implementing this approach come from the teachings of such quality leaders as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa and Joseph M. Juran.

A core concept in implementing TQM is Deming's 14 points, a set of management practices to help companies increase their quality and productivity:

The term "Total Quality Management" has lost favor in the United States in recent years: "Quality management" is commonly substituted. "Total Quality Management," however, is still used extensively in Europe.

Total Quality Management (TQM) is an approach that seeks to improve quality and performance which will meet or exceed customer expectations. This can be achieved by integrating all quality-related functions and processes throughout the company. TQM looks at the overall quality measures used by a company including managing quality design and development, quality control and maintenance, quality improvement, and quality assurance. TQM takes into account all quality measures taken at all levels and involving all company employees.

Origins of TQM

Total quality management has evolved from the quality assurance methods that were first developed around the time of the First World War. The war effort led to large scale manufacturing efforts that often produced poor quality. To help correct this, quality inspectors were introduced on the production line to ensure that the level of failures due to quality was minimized.

After the First World War, quality inspection became more commonplace in manufacturing environments and this led to the introduction of Statistical Quality Control (SQC), a theory developed by Dr. W. Edwards Deming. This quality method provided a statistical method of quality based on sampling. Where it was not possible to inspect every item, a sample was tested for quality. The theory of SQC was based on the notion that a variation in the production process leads to variation in the end product. If the variation in the process could be removed this would lead to a higher level of quality in the end product.

After World War Two, the industrial manufacturers in Japan produced poor quality items. In a response to this, the Japanese Union of Scientists and Engineers invited Dr. Deming to train engineers in quality processes. By the 1950's quality control was an integral part of Japanese manufacturing and was adopted by all levels of workers within an organization.

By the 1970's the notion of total quality was being discussed. This was seen as company-wide quality control that involves all employees from top management to the workers, in quality control. In the next decade more non-Japanese companies were introducing quality management procedures that based on the results seen in Japan. The new wave of quality control became known as Total Quality Management, which was used to describe the many quality-focused strategies and techniques that became the center of focus for the quality movement.

Principles of TQM

TQM can be defined as the management of initiatives and procedures that are aimed at achieving the delivery of quality products and services. A number of key principles can be identified in defining TQM, including:

- Executive Management – Top management should act as the main driver for TQM and create an environment that ensures its success.
- Training – Employees should receive regular training on the methods and concepts of quality.
- Customer Focus – Improvements in quality should improve customer satisfaction.
- Decision Making – Quality decisions should be made based on measurements.
- Methodology and Tools – Use of appropriate methodology and tools ensures that non-conformances are identified, measured and responded to consistently.
- Continuous Improvement – Companies should continuously work towards improving manufacturing and quality procedures.
- Company Culture – The culture of the company should aim at developing employees ability to work together to improve quality.
- Employee Involvement – Employees should be encouraged to be pro-active in identifying and addressing quality related problems.

The Cost of TQM

The **Cost of Total Quality Management (TQM)** refers to the financial, human, technological, and organizational resources that a company invests to establish, implement, maintain, and continuously improve a quality management system. Although TQM aims to reduce defects, increase customer satisfaction, and improve organizational performance, its successful implementation requires significant initial and ongoing investments. These costs should not be viewed merely as expenses but as strategic investments that generate long-term benefits through improved efficiency, reduced waste, enhanced product quality, and increased customer loyalty.

One of the major costs associated with TQM is **training and employee development**. Organizations must provide continuous education and skill development programs to ensure that employees understand quality principles, process

improvement techniques, problem-solving methods, and customer-focused practices. Training programs may involve workshops, seminars, certifications, quality circles, and on-the-job learning activities, all of which require financial resources and employee time. Additionally, companies often invest in hiring quality experts, consultants, and trainers to guide the implementation process.

Another significant cost is the **cost of process improvement and system redesign**. TQM requires organizations to analyze existing business processes, identify inefficiencies, and redesign workflows to improve quality and productivity. This may involve upgrading machinery, adopting new technologies, implementing quality management software, improving production systems, and establishing standardized operating procedures. Such improvements often require substantial capital investment and may temporarily disrupt normal operations during the transition period.

The **cost of quality measurement and monitoring** is also an important component of TQM. Organizations must establish systems for collecting, analyzing, and reporting quality-related data. This includes inspections, audits, testing procedures, statistical process control systems, performance measurement tools, and quality documentation. Maintaining these systems requires specialized personnel, software applications, and regular monitoring activities, which contribute to the overall cost of TQM implementation.

TQM also involves **prevention costs**, which are expenses incurred to prevent defects before they occur. These costs include quality planning, supplier evaluation, process design, employee training, preventive maintenance, and continuous improvement initiatives. While prevention costs may appear high initially, they help organizations avoid much larger costs associated with product failures and customer complaints in the future.

Total Quality Management (TQM)

Total Quality Management (TQM) is a comprehensive and organization-wide management philosophy that focuses on continuously improving the quality of products, services, processes, and organizational performance to achieve long-term customer satisfaction and business success. TQM emphasizes that quality is not the responsibility of a single department but rather a collective responsibility shared by every employee, from top management to operational staff. The core objective of TQM is to create a culture of continuous improvement where customer needs and expectations are consistently met or exceeded. This approach integrates quality principles into every aspect of an organization's activities, including planning, production, procurement, supply chain management, customer service, and decision-making processes.

TQM is built upon several fundamental principles, such as customer focus, leadership commitment, employee involvement, process-centered management, continuous improvement, fact-based decision-making, and mutually beneficial supplier relationships. Organizations implementing TQM utilize various quality tools and techniques, including Statistical Process Control (SPC), Six Sigma, Kaizen, benchmarking, quality circles, root cause analysis, and performance measurement systems to identify inefficiencies and eliminate defects. Through continuous monitoring and improvement of processes, TQM helps reduce operational costs, minimize waste, improve productivity, enhance product reliability, and strengthen customer trust. In supply chain management, TQM promotes collaboration among suppliers, manufacturers, distributors, and customers to ensure consistent quality throughout the value chain. Effective TQM implementation requires strong leadership support, employee training, open communication, teamwork, and a commitment to quality at every organizational level.

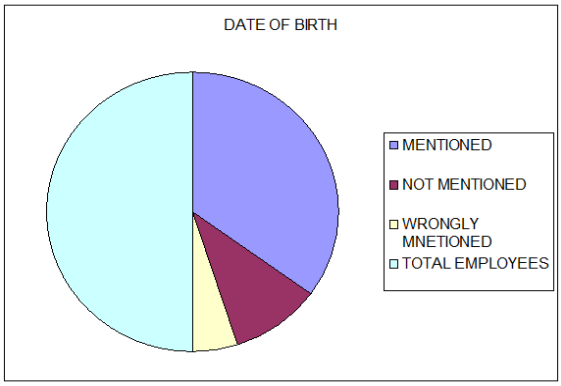
As global competition intensifies, organizations increasingly adopt TQM as a strategic approach to achieve operational excellence, maintain a competitive advantage, improve customer satisfaction, and ensure sustainable business growth. By fostering a culture of quality and continuous learning, TQM enables organizations to adapt to changing market demands while consistently delivering superior products and

services that create value for customers and stakeholders.

III. DATA ANALYSIS & INTERPRETATION

DATE OF BIRTH

DATA	NO OF EMPLOYEES
MENTIONED	70
NOT MENTIONED	10
WRONGLY MNETIONED	20
TOTAL EMPLOYEES	100



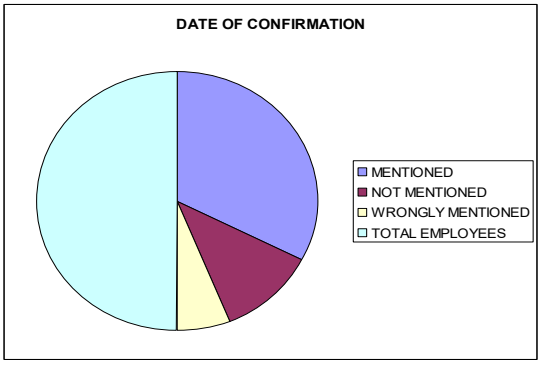
Interpretation

Out of Sample Size of 100 Employees, 70 mentioned date of birth correctly, 10 of them did not mention date of birth at all , 20 of the employees mentioned wrong date of birth .

Correct mentioning of birthday would facilitate correct date of retirement

DATE OF CONFERMATION

DATA	NO OF EMPLOYEES
MENTIONED	70
NOT MENTIONED	20
WRONGLY MENTIONED	10
TOTAL EMPLOYEES	100



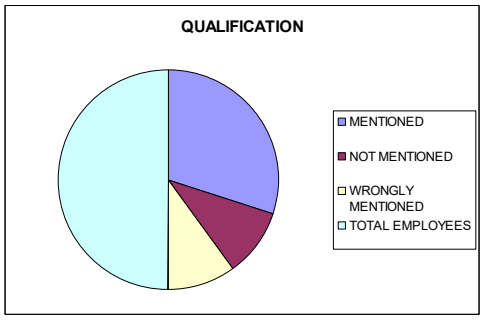
Interpretation

Out of Sample Size of 100Employees, 70 mentioned date of confirmation

Correctly, 20 of them did not mention date of confirmation at all, 10 of the Employees mentioned wrong dates of confirmation.

QUALIFICATION

DATA	NO OF EMPLOYEES
MENTIONED	60
NOT MENTIONED	20
WRONGLY MENTIONED	20
TOTAL EMPLOYEES	100



Interpretation

Out of Sample Size of 100 Employees , 60 mentioned qualification details correctly, 20 of them did not mention Qualification at all , 20 of the employees mentioned wrong Qualification details.

Correct mentioning of Qualification would facilitate correct information on Employee

IV. SUGGESTIONS

➔ Since majority of the people feel that they are not underpaid, this causes dissatisfaction. To avoid that company may introduce different assertive schemer through which pay and productivity can be minimized.

➔ As employees feel that they don't have freedom to take decision which affects job satisfaction adversely, employees should have some degree of freedom decisions at their workplace.

➔ Some employees have low level of commitment has they feel they are not much important in the dept they can explained how important there in the deportment.

➔ Some of the employees felt that their skills are not utilized completely; proper

measure can be taken job design and placement.

- ➔ As more than half of the people not satisfy their personal development, company may provide carrier development programmers were people can achieve their personal and profit zonal goals.

V. FINDINGS

- ➔ Morality of the respondents has freedom to take decisions. This shows TQM effects the organization.
- ➔ Employees feel that they are very important person in the deportment, which shows their level of commitment.
- ➔ Employees in **Heritage Foods (India) Limited** Can see themselves in a better position in near future which indicates the carrier growth on the company.
- ➔ Company successful in providing good working conditions.
- ➔ Megacity of the respondents feels that they are under paid.
- ➔ Employees in the **Heritage Foods (India) Limited** have good relationship with their peers, superiors and sub-ordinates.
- ➔ All most all the employees have positive attitude of the management towards security as employees feel highly secured in **Heritage Foods (India) Limited**.

VI. CONCLUSTIONS

- ➔ Half of the Employees are not satisfied with the personal development.
- ➔ Employees in **Heritage Foods (India) Limited** are satisfied with the company policies and procedures.
- ➔ Employees in all dept are well planned while performing their activities.
- ➔ On the whole employees in **Heritage Foods (India) Limited** have Job Satisfaction the contributing factors for their satisfaction are good relationship, working conditions, Company polices and other benefits.

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