

Determination of Total Quality Management in Operational Management

Dr. Nalin Chirakkara

Associate Professor,

Master In Business Administration (General Management), Presidency University, Bangalore, India,

Email Id: nalinkumar@presidencyuniversity.in

ABSTRACT:

Total Quality Management TQM is a complete strategy that emphasises the participation of all organisational levels in enhancing processes, goods, and services throughout time. The importance of TQM in operational management and its effects on raising quality, customer happiness, and overall organisational performance are examined in this chapter. Quality management offers a framework for continuous quality improvement, ensuring that businesses design and deploy the finest goods and services available. Quality management is both a mindset and a strategy for boosting customer happiness, lowering expenses, and eliminating mistakes.

KEYWORDS:

Customer Satisfaction, Employee Involvement, Total Quality Management (TQM), Operational Management, Quality Improvement.

I. INTRODUCTION

Customers nowadays want products and services that are more durable and reliable while also being affordable. This requires manufacturers to closely adhere to quality protocols from product design through shipment and installation. As a result, the objective of every competitive sector is to produce the product or service at the lowest possible cost while assuring complete client satisfaction. This is possible through Total Quality Management TQM, because quality is a systemic process that extends throughout all areas of the organisation, such as marketing, design, development, engineering, buying, and production/operations[1]. Total Quality Management is an effective system of integrating the quality development, quality maintenance, and quality improvement efforts of various groups in an organisation so as to enable marketing, engineering, production, and service at the most economical levels that allow for full customer satisfaction, according to Feigebaum.

Benefits of TQM

The advantages of TQM may be divided into two categories:

1. Benefits geared at customer happiness.
2. Economically focused advantages.

Customer Satisfaction Advantages

The following benefits fall within this category:

1. Product quality enhancement.
2. Product design enhancement.
3. Increased production flow.
4. Increased staff morale and quality awareness.
5. Product service enhancement.

6. Increased market acceptability.

Economic Enhancement Advantages

The following are the advantages in this category:

1. Operating cost reductions.
2. Operating loss reductions.
3. Cost savings in field service.
4. Liability exposure reductions.

ISO 9000 SERIES

ISO is an abbreviation for the International Organization for Standardization. It is an international organisation with representation from over 90 nations. This organization's members are these nations' national standard organisations. The Bureau of Indian Standards BIS is the Indian representation to ISO, and ISO and the International Electro Technical Commission IEC work together as a unified system. These are nongovernmental organisations that exist to provide uniform standards for international commerce in products and services. ISO 9000 standards require businesses to have a quality manual that follows ISO rules, paperwork, quality processes and job instructions, and thirdparty auditors to verify compliance. The ISO 9000 series includes five worldwide quality management standards. They are as follows:

1. **ISO 9000** — Quality assurance and management standards
2. **ISO 9001** — Quality systems: Design quality
3. **ISO 9002** — Manufacturing and installation quality systems
4. **ISO 9003** — Quality management systems: final inspection and testing
5. **ISO 9004** — Certification and management

Application Iso 9000: Iso 14000 Series

The ISO 14000 family of environmental management standards is designed to help businesses manage the environmental impact of their operations. The ISO 14000 series is comparable to the ISO 9000 series, which was issued in 1987. The ISO 9000 series' goal is to encourage enterprises to implement quality assurance management procedures. Although ISO 9000 deals with an organization's overall management and ISO 14000 deals with an organization's environmental consequences, both standards are engaged with processes, and there is consideration of integrating the two series into one. ISO, or the International Organization for Standardization, issued both series of standards. By producing worldwide standards, ISO aims to ease international commerce and collaboration in commercial, intellectual, scientific, and economic pursuits. ISO began with industrial and mechanical engineering standards. It is now attempting to establish standards for an organization's procedures, rules, and practises.

ISO 14000 environmental standards address how a corporation maintains the environment within its facilities as well as the immediate outside environment. Yet, the guidelines also require an examination of a product's whole life cycle, from raw material to final disposal. These standards do not require a specific amount of pollution or performance, but instead focus on raising awareness of the activities and procedures that might have an impact on the environment. It should be emphasised that adhering to ISO 14000 standards does not exempt a corporation from any national or local requirements relating specific environmental performance concerns.

The Benefits of ISO 14000 Certification

The advantages of obtaining ISO certification extend beyond the gratification of doing good. Adherence to the standard may result in enhanced compliance with environmental rules, increased marketability, better resource use, higher quality goods and services, increased levels of safety, a better image, and

more earnings. The environmental knowledge and documentation needed by ISO 14000 standards help a corporation comply with environmental legislation. This implies that by following to the standard carefully, a firm is less likely to break environmental standards and is constantly ready for inspection by a regulatory body. Furthermore, the certification and paperwork may help a firm obtain money, defend itself in environmental lawsuits, and obtain insurance or licences.

Certification may result in a larger market for a company's goods and services. Several organisations and governments will be seeking for ISO 14000 certified providers in order to preserve their own certification and environmentally friendly image. Consumer goods manufacturers may discover that many customers will not only attempt to buy from environmentally friendly firms, but will also pay a bit extra if they believe they are helping the environment. To obtain this benefit, a corporation must publicise its environmental initiatives through advertising and labelling. Process studies associated with ISO 14000 certification may result in process simplification and more effective use of resources and raw materials, lowering a company's expenses. Reduced usage of potentially hazardous chemicals in a plant may come from reducing the amount of potentially hazardous compounds in an end product. This results in a safer working environment for employees as well as the prospect of lower insurance prices. Employee morale may improve when employees believe their workplace is safer and they are helping the environment[2]–[4].

II. DISCUSSION

Work Study

Productivity has now become a household term. It is critical to the wellbeing of industrial firms as well as the country's economic prosperity. High productivity is completing tasks in the shortest amount of time while spending the least amount of money on inputs and wasting the least amount of resources. Workstudy is the foundation for work system design. The goal of work design is to find the most efficient way to perform required duties. This workstudy attempts to improve existing and planned work methods and to set standard job performance timeframes. Workstudy includes two techniques: solve current problems and work measurement.

Productivity

Productivity is the quantitative relationship between what we create and what we use as a resource to generate it, i.e., the arithmetic ratio of output to resources input. Productivity may be defined as:

$$\text{Productivity} = \frac{\text{Input}}{\text{Output}}$$

The efficiency of the manufacturing system is referred to as productivity. It is the philosophy that governs the production system's administration. It measures how successfully the production elements land, capital, labour, and energy are used. According to the European Productivity Agency EPA, productivity is a state of mind. It is the philosophy of growth, of always improving what already exists. It is the conviction of being able to outperform yourself today and every day. It refers to the continuous adaptation of economic and social activity to changing circumstances. It is the ongoing attempt to incorporate new techniques and procedures. It is a belief in progress. One fundamental issue with speed is that it implies different things to different individuals. Economists calculate it based on Gross National Product GNP, managers consider it costcutting and speeding up, and engineers consider it higher production per hour. Yet, the commonly recognised definition is that it is the link between the commodities and services produced and the inputs used in their creation.

Factors Influencing Productivity

Productivity influencing factors may be roughly categorised into two categories: Controllable or internal variables A and uncontrollable or external factors B.

A Manageable or Internal Factors

1. Product Factor: In terms of productivity, this refers to the extent to which a product satisfies production criteria. A product's cost benefit factor can be enhanced by either boosting the benefit at the same cost or by lowering the cost for the same benefit.

2. Plant and Equipment: They play an important role in increasing output. Increased plant availability through efficient maintenance and reduced idle time boosts production. Productivity may be raised by paying close attention to use, age, modernization, cost, and investment, among other factors (Figure.1).

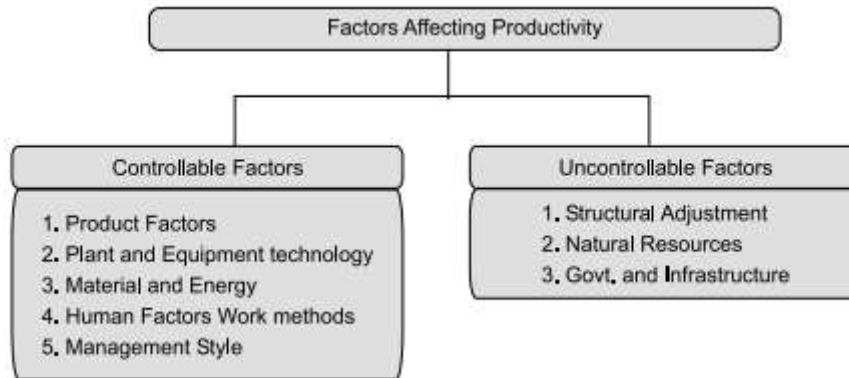


Figure 1: Represent the factors affecting productivity [Wisdomjob].

3. Technology: Cuttingedge technology boosts productivity significantly. Automation and information technology aid in material handling, storage, communication systems, and quality control. The following technological criteria must be considered: I plant size and capacity, ii timely supply and quality of inputs, iii production planning and control, iv repairs and maintenance, v waste reduction, and vi efficient material handling system.

4. Material and Energy Usage: Efforts to minimise material and energy consumption result in significant increases in productivity.

- i. Choose highquality and appropriate materials.
- ii. Waste and scrap management.
- iii. Good inventory management.
- iv. Creation of supply sources.
- v. Maximum energy utilisation and savings.

5. Human Factors: Human competence and ability are fundamental to productivity. Employees' ability to work successfully is regulated by a variety of criteria such as education, training, experience, aptitude, and so on. Employee motivation has an impact on productivity.

6. Work Methods: Enhancing the means by which work is done methods increases productivity. Work research, industrial engineering approaches, and training are areas that improve work methods, which in turn increases productivity.

7. Management Style: This has an impact on organisational design, organisational communication, policy, and procedures. A more adaptable and dynamic management style is a better way to boost productivity.

Work Study

Work study is a catchall word for the methodologies, method study, and work measurement employed in the research of human work in all of its guises (Figure. 2). And which leads to a methodical analysis of all the aspects affecting the efficiency and economy of the situation under evaluation in order to effect improvement [5]–[7].

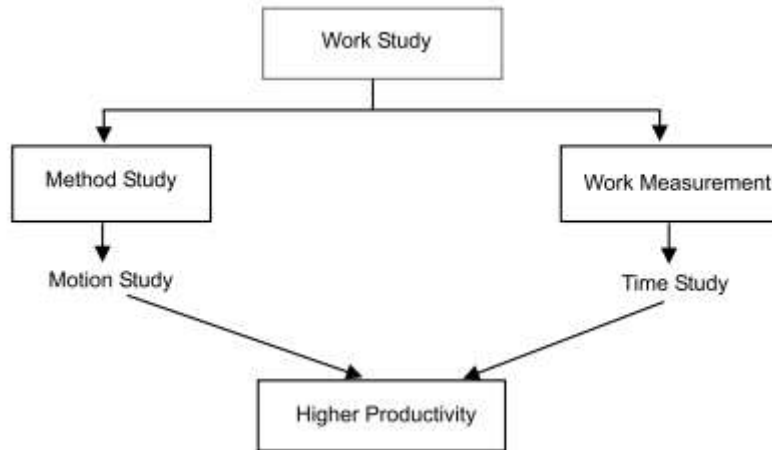


Figure 2 : Represent the Framework of work study [Word Press].

Work study is a method of increasing the firm's production efficiency productivity by eliminating waste and superfluous procedures. It is a method for identifying nonvalueadded tasks by investigating all of the elements impacting the work. It is the only precise and methodical procedureoriented strategy for establishing time standards. It will add to profit since the savings will begin immediately and continue throughout the product's life. Work study includes method study and work measurement. Motion study is a component of method research, and work measurement is sometimes known as Time study[8], [9].

Advantages of Work Study

The following are the benefits of research work:

- i. It contributes to a smooth production flow with few disruptions.
- ii. It helps to lower product costs by removing waste and needless activities.
- iii. Improved labormanagement relations.
- iv. Meets the delivery deadline.
- v. Reduced rejects and scrap, as well as better utilisation of the organization's resources.
- vi. Contributes to improved working conditions.
- vii. Improved workspace layout.
- viii. Enhances current processes or techniques by standardising and simplifying them.
- ix. Assists in establishing the standard time for an activity or job, which is useful in labour planning and production planning.

III. CONCLUSION

Total Quality Management TQM, a critical component of operational management, focuses on the ongoing improvement of procedures in order to achieve better quality and customer satisfaction. Organisations may develop a qualityfocused culture and foster performance excellence by putting TQM concepts into practise. The need of employee participation at all levels is emphasised by TQM. It motivates staff members to actively participate in projects for quality improvement, exchange ideas, and take responsibility for their job. The feeling of ownership, empowerment, and responsibility fostered by this engagement increases motivation and commitment.

REFERENCES

- [1] H. Labdhagati, Pengaruh Penerapan Total Quality Management, Supply Chain Management dan Orientasi Kewirausahaan terhadap Kinerja Operasi Studi pada Pengrajin Tas di Sentra Industri Tas Ciampea, Kab. Bogor, *DIPONEGORO J. Manag.*, 2017.
- [2] C. Raßfeld, F. Behmer, M. Dürlich, and R. Jochem, Do quality costs still matter?, *Total Qual. Manag. Bus. Excell.*, 2015, doi: 10.1080/14783363.2015.1068591.
- [3] Y. Hala, Effect of Earning Asset Quality and NonPerforming Loans on Capital Adequacy Level,

Atestasi J. Ilm. Akunt., 2020, doi: 10.57178/atestasi.v3i2.265.

- [4] M. Haifa Labdhagati, Engaruh Penerapan Total Quality Management, Supply Chain Management, Dan Orientasi Kewirausahaan Terhadap Kinerja Operasi Studi pada Pengrajin Tas di Sentra Industri Tas Ciampea, Kab. Bogor, *DIPONEGORO J. Manag.*, 2017.
- [5] C. S. S. Paixão, A. F. dos Santos, M. A. Voltarelli, R. P. da Silva, and F. M. Carneiro, Times of efficiency and quality of soybean crop mechanical operation in geometry functions of plots, *Eng. Agric.*, 2017, doi: 10.1590/18094430Eng.Agric.v37n1p106115/2017.
- [6] K. Gopal, S. S. Tripathy, J. L. Bersillon, and S. P. Dubey, Chlorination byproducts, their toxicodynamics and removal from drinking water, *Journal of Hazardous Materials*. 2007. doi: 10.1016/j.jhazmat.2006.10.063.
- [7] G. K. Menza and J. M. Rugami, Total Quality Management Practices and Performance of Deposit Taking Savings and Credit Cooperatives in Mombasa County, Kenya, *Int. J. Bus. Manag. Entrep. Innov.*, 2021, doi: 10.35942/jbmed.v3i1.165.
- [8] K. Juhos, S. Czigány, B. Madarász, and M. Ladányi, Interpretation of soil quality indicators for land suitability assessment – A multivariate approach for Central European arable soils, *Ecol. Indic.*, 2019, doi: 10.1016/j.ecolind.2018.11.063.
- [9] J. T. Tauzović, Modern Business Model as The Basis of Continuous Competitiveness, *Int. J. Bus. Mark. Manag. IJBMM*, 2017.