

## **A Study on TQM Practices and Effectiveness of Employees Participation in Indian Manufacturing Industries**

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**Abstract:** The aim of this study is to focus on the TQM approach in manufacturing industries to sustain the over all productivity through employees effective participation at research. This study explores the importance of TQM concepts and the impact of TQM approach for aligning employees towards voluntary participation in their work and to achieve the objective of the organisation. TQM occupies a vital part in business strategy to achieve in relation to the product, cost, quality, services and satisfy the over all needs of customers. It helps the management to co-ordinate every one towards objectives of the organisation. Also, it creates employee's active participation in product/process development and increases the self discipline of the entire organisation to perform the business excellence on par with the best industries at national and international levels. Again this study focussing on new concepts of TQM implementation to get effective co-ordination from all the people in the organisation for strengthening the employees voluntary participation effectively and to achieve continuous improvement by increasing motivation and commitment. These are making flexibility with suitable climate to meet challenges in the competitive business environment in an organisation. It is a bridge to reach the goal of an organisation.

**Key words:** OEE (Overall Equipment Effectiveness), TPM (Total Productive Maintenance), organization, SAP (System Application Programming), IE (Industrial Engineering)

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### **INTRODUCTION**

Total Quality Management (TQM) is a systematic activity carried out by the whole organization efficiently and effectively to achieve the objective of an organization relating to the product and services in the terms of quality, cost and delivery for satisfying the customers through involving people at various levels of voluntary participation. Commonly said TQM is a management philosophy that seeks to integrate all organizational functions (Design, Production, Quality Engineering, Finance, Marketing and customer service, etc.) to focus on meeting customer needs and organizational objectives. TQM was applied late in the 1980's and early 1990's before ISO 9000 In the late 1970's and early 1980's, the developed countries like North America and Western Europe suffered economically and stiff competition from Japan because Japan has possessed remarkable ability to produce superior product with cheapest cost. Quality control techniques had been successfully implemented in Japanese's manufacturing industries. These are playing a vital role to turnout the concept of TQM which is being boosting productivity with superior quality, this turns the economic growth across the country. The builds on TQM

by Dr. W. E. Deming, Dr. J. H. Juran, both are described to sustain the continuous process improvement that ensure the product's quality and services on time which is a significant part in long-term success through customer satisfaction.

### **REFERENCE REVIEWS OF TQM CONCEPTS**

Employee participation and company performance review in ISBN: 185952995 by Juliette Summers and Jeff Hyman concluded an effect on employee orientations and possibly behaviour if a genuine ownership effect can be established. There is some evidence that combinations of participative approaches may be associated with indicators of enhanced performance, though there is more doubt about management-initiated performance regimes predicated largely on individualistic assumptions about the employment relationship. This introduces the point that the assumed shift to individualistic values and hence employees' willing acceptance of management policies designed to engage with these values has yet to be established.

Townsend and Gebhardt (1992) described that TQM is really something new, includes an emphasis on

philosophy or culture, a holistic approach to the organization and a distinct accent on the role of leadership in changing an organizational culture. Perhaps, another way to summarize the difference is to say that total quality is something that is achieved from within the organization.

Yusuf Noah TQM program will be more effective in increasing the capabilities and performance of government, businesses and the general public in Nigeria. The leaders in Nigeria should be willing to emphasize on the people-oriented elements of management commitment and people's involvement which will increase or change the process elements of continuous improvement and the people of Nigeria's satisfaction in improving the effectiveness of performance must be highlighted. Many researchers agree with the writings of TQM experts such as Deming, Juran and Crosby which emphasized that the four key components of TQM program are essential for any nation planning to implement a TQM program. Yusuf Noah concluded that workers in the study establishments are generally not much involved in the management decision making within their respective establishments. Workers who are subjects of this study generally demonstrated willingness to accept the responsibility of involvement in management decision making whenever such opportunity arises. However, many hold the view that management decision making is the preserve of the management. This implies that while the workers are willing to accept the responsibility of greater involvement in management decision making they are not ready to challenge the management in this regard. Lastly, effects on productivity are expected to be greatest when the organization adopts a coherent system of work organization and industrial relations practices.

Business Process Management Journal Emerald Article published that investigating process management in firms with quality systems: A multi-case study defined that quality management is a comprehensive and not especially precise concept. Some researchers emphasize dimensions such as customer orientation, quality assurance, process orientation, and continuous improvement while others are more concerned with worker involvement, empowerment and teamwork (Cartin, 1993; Ho and Fung, 1994). Hammer and Stanton (1999) stated that business processes have become the primary organizational units in these firms. Investing in a quality system has not led to process awareness by either executives or employees authority (Hammer and Stanton, 1999) and to form a matrix organization with all the challenges these organizations face regarding coordination and conflicts.

A study of managers attitudes to employee involvement, negative attitudes to employee involvement do exist among some managers at all levels. These seem more related to lack of experience. It is unlikely that simple training will be remedy this. Organisations seeking to implement initiatives need to ensure they have a core of managers with significant experience of employee involvement. This may imply recruiting such managers from elsewhere. Other managers need positive developmental experiences of employee involvement. These could include opportunities for secondments or extended visits to other organisation with a participative culture or working alongside other managers with experience of making employee involvement work. Coaching and mentoring may have a part to play but need to focus as much on building managers in their ability to manage in a participative style and skills. Building managerial experience in this way is not cheap and may be time consuming. However, employee involvement on the cheap is unlikely to deliver significant benefits.

The late Edwards Deming TQM seeks to make the whole organization work together they also learned that involving everyone in the process of continual improvement through the team concept has instilled an understanding of the program and put everybody in the company to work to accomplish the transformation. The transformation is everybody's job. Saylor (1992) offers his perspective as follows with respect to leadership they must convey the importance of the individual in the organization and the role of each contributor in making the vision a reality. Create constancy of purpose toward improvement of product and service with the aim to become competitive and to stay in business and to provide jobs; his 7th point, adopt and institute leadership; his 8th point, drive out fear; his 11th point, eliminate numerical quotas for the work force and numerical goals for people in management and his 12th point, remove barriers that rob people of pride of workmanship.

In Juran (1988)'s Quality Control Handbook, the new name signals the change in emphasis from quality control, traditionally the concern of those working on the manufacturing floor to an emphasis on the management of quality generally, a concern of managers throughout an organization.

Jones and Seraphim (2008), i.e., TQM concept was originally developed to increase the efficiency of occidental and Japanese organisations. As a consequence of its success there, it has spread worldwide. His study based on a case of a company with characteristics that are in conflict with what are accepted to be necessary for successful implementation of TQM. Sajad Beshkol and Fateme Rahimi explained in Australian

journal, i.e., Total Quality Management (TQM) is not only a culture and philosophy but also a guidance outline for the basis of permanent development. Implementing this strategies guide the organizations in a way that enable them to have the best operation on the controllable environmental factors. TQM help companies while getting familiar with these principles, find their place and to achieve high performance. Iranian companies in this process might be better to improvement TQM in order to increase performance.

### **ROLE OF CULTURE IN TQM**

Total quality management is a systematic approach that originated in the 1950's and it has been popular since the early 1980's. It has described the culture, attitude and behaviour of individuals, as well as a whole in the organization. It strives to provide customers with products and services that satisfy their needs. Culture plays a dominant role in changing the attitude and behaviour which requires quality in all aspects of the company's working processes being done right from the first time and every time to prevent the defects and waste eradicated from operations.

**TQM and Indian industries:** TQM is a tool in modern business for increasing the growth of business by reducing waste. So, Indian industries like Ashok Leyland, Ford and Hyundai Motors have taken keen efforts to implement the TQM concepts through Gemba movement which means work place improvements by the employees participation at various level. In this movement, HR role is being treated as a prime role to co-ordinate every one in an organization to implement TQM in an effective manner. In order to achieve, Indian industries are being focused today towards lean manufacturing system through lean 6 sigma concepts for sustaining quality in process, taking financial austerity measure, adapting waste prevention methodology and also focusing on defect free techniques in the manufacturing system. Subsequently, the following initiatives are focused on in daily management through Gemba activities which playing a vital role in aligning each and every one towards the objective of the organisation.

#### **TQM implementation practices in Indian industries:**

- Being ensured self certificate, process development, defect preventive techniques like mistake proof and 6 sigma concepts have been helping to improve the quality
- Work simplification has been designed through IE techniques for improving productivity with fatigue reduction

- Cost saving techniques and methodology have been initiated to ensure lean manufacturing
- Unsafe act and unsafe conditions are measured and protective working environment by suitable techniques and methodology are provided to ensure accident free zone
- Inventory control is a key activity in an industry to control stock and flow of material which helps to maintain cost control and ensure free flow production. So, most of the industries have adapted SAP System for inventory control
- 5 s is purely influenced by human culture and attitudes. It is treated as the back bone of industries which helps to increase the work simplicity. So, it is being facilitated to improve working conditions and focuses in the front line
- OEE is a metric which highlights the breakdown and utility of equipments, this leads the effectiveness of TPM which influences to improve the over all life cycle of equipments providing employees empowerment
- Today, new concepts have been developed to protect environment which is mandatory for every one to save the life of the next generation, hence the recycling process has been developed to control the effluents in the manufacturing system

The employees involvement contributes as a catalyst to the success of all initiatives. It act as a pivotal role. But it is a difficult task in front of management because of union resistance. Hence, it is a big challenge to the management to bring the employees under an umbrella. Due to this, the industries are being planned to align the unionised employees using green steps like providing rewards, recognition, special gifts and promotion, etc. So, the industries have adapted various methods to aid the effectiveness of motivation through special gifts for valuable suggestions, rise award for individual's improvements, gifts for employees participation, etc.

But, when researchers look back, the current scenario of employees participation in many Indian industries is not very satisfactory, even though a lot of green steps are taken by the management because of employees attitude and behaviours are having vibrant level to align the objective of TQM. Relating to this, a lot of reviews and case studies have focussed that the success of TQM is based on effective employees participation.

**TQM success:** A strategy for TQM practice is a prime role to achieve customer needs in relation to the products, costs, quality and services through continuous improvement involving all the people in a business process which is the best practice in an industry (Fig. 1):

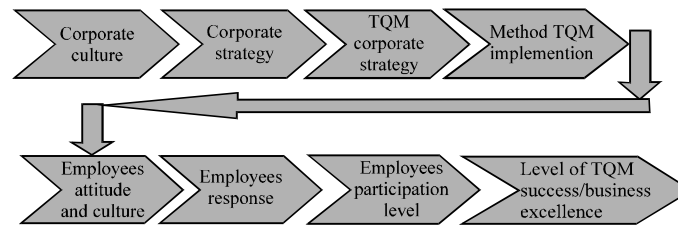


Fig. 1: TQM role to achieve employees participation

- Optimum utilization of resources in an organisation
- Employees flexibility and responsiveness to accept the change
- Level of customers/suppliers satisfaction, either internal or external

#### OBJECTIVES OF THE STUDY

- To understand the employees participation to fill the TQM concepts in Indian manufacturing industries
- To understand the employees voluntary involvement for continuous improvement in indian manufacturing industries

**Back ground of the study:** The study was been taken in an automotive industry at Chennai where commercial vehicle are being produced on need basis of customers. On observation the employees participation was not satisfactory due to poor co-ordination and negative feeling and fear of TQM concepts particularly in blue collar employees. Result-employees lack of participation and poor voluntary involvement in work improvement, even though provided with special incentives and initiating various gifts for increasing motivation.

A case study has been taken in a production line where 50 employees worked in various categories. The effectiveness of attendance and percentage of participation was surveyed for a period of 3 months with uniform intervals in the following criteria:

- Employees involvement in problem identification
- Employees voluntary involvement in problem analysis and solving
- Employees involvement in continuous improvement

Motivation adapted through:

- Gifts provided on percentage of attendance
- Raise awards in cash for their improvements
- Special rewards and recognition for participation

**Case study analysis:** Performance of employees participation.

Table 1: Performance of employees participation

Days	No. of participants	Participants (%)
1	18	36
2	18	36
3	20	40
4	18	36
5	21	42
6	31	62
7	40	80
8	18	36
9	15	30
10	24	48
11	10	20
12	18	36
13	12	24
14	23	46

**Observation:** The study indicates that the performance of employees participation was not up to the satisfactory levels. In the 1st day 18 employees has participated out of 50, i.e., 36%, 2nd day again 18 employees, i.e., 36%, 3rd day 20 employees, i.e., 40%, 4th day again 18 employees, i.e., 36%, 5th day marginal improvement 21 employees, i.e., 42%, 6th day noticed considerable improvements therefore 31 employees participated, i.e., 62%, 7th day showed remarkable improvement 40 employees, i.e., 80%, 8th day again 18 employees, i.e., 36%, 9th day showed downward to 15 employees, i.e., 30%, 10th day again marginal improvement 24 employees, i.e., 48% but 11th day found poor participation 10 employees only, i.e., 20%, again repeatedly on the 12th day 18 employees, i.e., 36% again 13th day showed poor trend 12 employees, i.e., 24%, in the final (14th day) day showed marginal improvement 23 employees, i.e., 46% (Table 1).

#### RESULTS

In this study, Table 1 shows that the strength of work force participation is not impressive and the density of participants are ineffective with inconsistency which frankly proves that the employees are forced to participate in Gemba activities. It means the average employees participation showed only 41% against 100%. Total number of employees are 50. Employees participation are 41%.

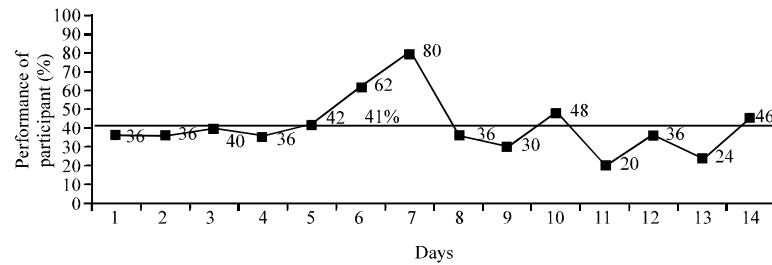


Fig. 2: Percentage of effectiveness in participation

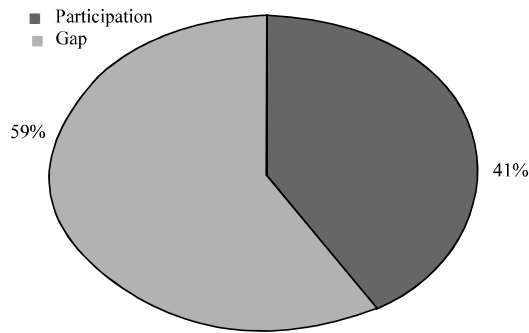


Fig. 3: The participation and gap of employees

Table 2: Employees involvement and motivation

Source of variation	Sum of the squares	df	Mean square	F	F-value
Between groups	44.6	4	11.150	3.593	3.06
With in groups	49.28	15	3.285		
Total	93.88	19			

Since, the calculated value is (3.593) greater than table value of 3.06 at 0.05 level. Hence, the difference in employees involvement and effectiveness of motivation is taken as significant. Therefore,  $H_0$  is rejected and  $H_a$  is accepted, i.e.:

$H_a$ : There is a significant difference between employees involvement and motivation

Based on the analysis, it is further inferred that the respondents motivation is being concerned with their participation when compared to higher effectiveness of motivation (Table 2) (Fig. 2 and 3).

**Suggestions for successful TQM:** The study report indicated that the employees culture and attitude plays a vital role. Hence, the part of implementation may be modified to change the mind set of workforce which leads to more commitment and strong binding to lead voluntary participation effectively:

- Existing work can be simplified to reduce human fatigue

- Systematic employees participation is mandatory to fulfil his/her regular wages
- Each and every improvement should be recorded for reward/promotion
- Motivation should be strengthened to increase employees commitment and create strong binding force towards effective voluntary participation
- Firm solutions by good relationship of participants
- Suitable recognition of fruitful results
- No criticism if failing in his/her effort
- Proper education and training can be focused
- Teamwork can be strengthened by effective co-ordination
- Effective communication should be taken to arrest the gap between employees, union and management
- Proper feedback to understand the co-ordination and team effort

## CONCLUSION

Researchers can conclude that the effectiveness of employees participation is the key to ensure the success of TQM in an organization. The method of TQM execution is a vital role to improve the performance of employees voluntary participation. A case study was taken to find the effectiveness of employees participation. It indicated that the performance of participation found lower percentage even when gifts, recognition, rewards, etc., are provided. Also, this study proved that culture and attitude play a significant role to the effectiveness of participation. This study recommends few valuable suggestions to get more benefits by creating a strong binding with commitment for the successful outcome of TQM. A hypothesis test has been carried out to find the justification of participation effectiveness. Finally, this study concludes that the majority of employees forced to participate in Gemba activities and supervisors are having create a more burden on the whole TQM process to achieve the employees participation effectively. This study strongly stresses that the TQM improvements will be a fake statement if employees participation at all levels is not fulfilled. Hence, the culture and

attitude of employees should be changed from the grass root level, it is very tough task facing in front of management.

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