PERCEPTION ABOUT THE PRACTICE OF TOTAL QUALITY MANAGEMENT (TQM) AMONG THE MANAGERS AND WORKERS IN ISO 9000 CERTIFIED MANUFACTURING ORGANISATIONS IN KERALA

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***Abstract*:** Total Quality Management (TQM) is the management strategy of improving productivity, profitability and customer satisfaction in organisations. This study investigates the practice of Total Quality Management (TQM) in ISO 9000 certified manufacturing organisations in Kerala. The benefits of practice of Total Quality Management in ISO 9000 certified manufacturing organisations is Kerala is identified. After a detailed literature review a conceptual framework for the TQM factors, research questions and hypothesis formulated. Primary data is obtained through a survey from 126 managers and 126 workers from ISO 9000 certified manufacturing organisations in Kerala. Data analysed using SPSS. The study supports the hypothesis that there exists no significant difference in perception about the practice of Total Quality Management (TQM) among the managers and workers in ISO 9000 certified manufacturing organisations in Kerala.Suggestions to improve the practice of Total Quality Management (TQM) in ISO 9000 certified manufacturing organisations in Kerala are put forth.

***Index Terms*-Total Quality Management (TQM), ISO 9000 certified manufacturing organisations, Kerala.**

1.INTRODUCTION

Total Quality Management (TQM) is the management approach of an organization centred on quality based on the participation of all members and aiming at long-term success through customer satisfaction and benefits to all members of organization and society (International Organization for Standardization (ISO), 2005). It is a philosophy committed to customer satisfaction and continuous improvement.TQM is a management philosophy that seeks to integrate all organizational functions to focus on meeting customer needs and organizational objectives. The introduction of quality assurance through ISO 9000 certification is perceived as the most popular approach towards TQM in Indian companies (Business Today, 1995).

Total Quality Management has been centred on the principle of universal responsibility that is the responsibility for quality is shared by everyone in the organisation. Juran et.al. (1998) states that ideal quality management is "universal" and suggest that the expectation regarding quality management should be the same at all levels of the organisation. Universal responsibility in quality represents a significant paradigm shift in the notion that quality assurance is the responsibility of the Quality Control department or of the people who manufacture the products. Universal responsibility in TQM means everyone in the organisation are encouraged to take the responsibility for quality.

11.OBJECTIVES

To understand the awareness about the principles of Total Quality Management of managers and workers in ISO 9000 certified manufacturing organisations in Kerala.

To evaluate the perception about the practice of Total Quality Management among the managers of the ISO 9000 certified manufacturing organisations in Kerala.

To assess the perception about the practice of Total Quality Management among the workers of the ISO 9000 certified manufacturing organisations in Kerala.

To compare the perception about the practice of Total Quality Management among the managers and workers of the ISO 9000 certified manufacturing organisations in Kerala.

111.REVIEW OF LITERATURE

The theory of quality management has been developed from different areas such as contributions from quality leaders (Crosby, 1979; Deming, 1982; Feigenbaum, 1991; Ishikawa, 1985; Juran, 1989), formal quality award models (Malcolm Baldrige National Quality Award; European Quality Award; The Deming Prize) and measurement studies (eg. Saraph et al., 1989; Flynn et al., 1994; Powell,1995) Saraph et al. (1989) proposed seventy-eight items that were grouped in to eight critical TQM practices: role of divisional top management and quality policy, process management, product and service design, training, quality data and reporting, supplier quality management, role of the quality department and employee relations. Flyyn et al. (1994) proposed seven quality practices of TQM: top management support, product design, process management, quality information, supplier involvement, workforce management and customer involvement. Powell (1995) recognized twelve factors such as committed leadership, employee empowerment, adoption and communication of TQM or adopting the philosophy, closer supplier relationships, training, open organization, closer customer relationships, benchmarking, process improvement, zero-defects mentality, measurements and flexible manufacturing. Sharma (2006) reviewed the 12 quality management factors suggested by Powell (1995) as comprehensive dimensions of a TQM program.

1V. THEORETICAL FRAMEWORK

From the insights gained from the review of literature, by synthesising the Deming's principles and the analysing the relevance of these factors among the manufacturing organisations in Kerala, 12 meaningful TQM factors were extracted. The relevant TQM factors extracted are: Employee Participation, Teamwork, Supplier Teaming, Continuous Improvement, Unity of Purpose, Top Management Commitment, Customer Focus, Benchmarking, Employee Education and Training, Usage of Statistical Process Control tools, Information Usage about Quality and Value Analysis.

V.METHODOLOGY

The type of research design for the study is descriptive research. The study focuses on the medium and large-scale ISO 9000 certified manufacturing organisations in the state of Kerala, India. A detailed review of literature was undertaken in order to identify various dimensions of Employee perception and Total Quality Management. Several issues related to the topic under study were discussed with experts in the field of Engineering, Management and Quality Control. And extensive review of literature was done. From the insights gained 12 meaningful TQM factors were extracted, which were analysed. Content validity and face validity were assessed to test the relevance of these selected factors among the manufacturing organisations in Kerala. The samples consist of 126 managers and workers from thirty ISO 9000 certified manufacturing organisations in Kerala. The managers include the top-level managers, middle level managers and the functional managers. The worker category includes supervisors and the workers of different grades. Survey done to collect primary data. Data is analysed by SPSS. Frequencies and Percentages are computed and data presented in tables.

V1. FINDINGS AND DISCUSSION

6.1. Opinion of the managers and workers on the practice of Total Quality Management among of the ISO 9000 certified manufacturing organisations in Kerala.

According to the opinion of managers and workers in ISO 9000 certified manufacturing organisations in Kerala, the major reason for adopting Total Quality Management were customer requirement of quality products, competitive pressure from other organisations and desire to improve quality of products.

Considering the awareness about the principles of Total Quality Management among managers and workers in ISO 9000 certified manufacturing organisations in Kerala, among the respondents, 87 % were Strongly Aware of principles of Total Quality Management, 10% Aware, and 3 % Unaware of the principles of Total Quality Management.

76% of the respondents opined that they accepted the norms of adoption of TQM in their manufacturing organisations, where as 8% were Neutral for adoption of TQM and 16% Do not Accept the adoption of TQM in their manufacturing organisation.

92% of the respondents Agree that the practice of TQM in manufacturing organisations have facilitated to achieve the organisational goals ,2% were Neutral and 6% Disagree that the practice of TQM in manufacturing organisations facilitate to achieve the organisational goals.

Among the respondents,95% of the respondents Agree that the practice of TQM in manufacturing organisations improve efficiency of organisations. whereas 5% Disagree for the same.

6.2.Benefits of practice of Total Quality Management in ISO 9000 Certified manufacturing organisations in Kerala

The frequency and percentage of opinion of the managers and workers on the benefits of practice of Total Quality Management in manufacturing organisations is shown in Table6.1.

Table 6.1. Benefits of practice of Total Quality Management in manufacturing organisations

SNo	Variable	Managers (%)		Workers (%)	
		Yes	No	Yes	No
1	Improve productivity of organisation	93	7	95	5
2	Improve organisational performance	90	10	87	13
3	Improve morale of the employees	62	38	67	33
4	Increase in renumeration of employees	52	48	54	46
5	Facilitate good learning environment	88	12	92	8
6	Enable to improve work processes continuously	86	14	88	12
7	Reduce risk when designing new products and processes	36	64	56	44
8	Decrease rework/modification of manufactured products	88	12	91	9
9	Resolve problems before they occur	60	40	72	28
10	Resolve problems that occur during operations	90	10	88	12
11	Increase market share of the organisation	68	32	60	40

In Table 6.1, Benefits of practice of Total Quality Management in manufacturing organisations is presented.

6.3. Perception about the practice of Total Quality Management among the managers and workers of the ISO 9000 certified manufacturing organisations in Kerala

For analysing the perception of the managers and the workers towards Total Quality Management (TQM), the responses of the managers and workers towards the twelve TQM variables were evaluated for this study. The participating managers and workers were asked about their opinion on the extent of practice of twelve TQM factors in their manufacturing organisation. The following table illustrates the comparison of workers' and manager's responses on all twelve TQM of factors.

Table 6.2. Total Quality Management (TQM) scores of the Managers and Workers about the Practice of TQM in their manufacturing organisation

Sl No	TQM factors	Managers				Workers			
		Yes		No				No	
		No.	%	No.	Yes	No.	%	No.	%
1.	Employee participation	49	39	77	61	42	33	84	67
2.	Teamwork	39	34	83	66	25	20	101	80

3.	Supplier teaming	35	28	91	72	20	16	106	84
4.	Continuous improvement	49	40	77	60	39	31	87	69
5.	Unity of Purpose	39	31	87	69	52	41	74	59
6.	Top management commitment	40	32	86	68	19	15	107	85
7.	Customer focus	40	32	86	68	26	21	100	79
8.	Benchmarking	41	33	85	67	29	23	97	77
9.	Employee Education and Training	71	56	55	44	49	39	77	61
10.	Use of Statistical Process Control tools	21	17	105	83	17	13	109	87
11.	Information usage about quality	34	27	92	73	22	18	104	82
12	Value analysis	28	22	98	78	38	30	88	70

From the table 6.2, the comparison of workers' and manager's responses on all twelve TQM of factors could be inferred.

6.4. Is there any significant difference in perception about the practice of TQM between the managers and workers in ISO 9000 Certified organisations?

For answering the research question, the following hypothesis is developed.

H0: There exists no significant difference in the perception about the practice of Total Quality Management between the managers and workers of the ISO 9000 certified manufacturing organisation in Kerala

H1: There exists significant difference in the perception about the practice of Total Quality management between the managers and workers of the ISO 9000 certified manufacturing organisations in Kerala

The TQM score of each of the individual managers and workers has been analysed to determine any statistical difference in the perception of the managers and workers in the practice of TQM. Independent sample t-test is used to analyse the hypothesis.

Table 6.3. Group Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Workers	126	8.5094	4.2767	0.4154
Managers	126	7.9623	4.5354	0.4405

From the table 6.3, among the 126 managers and 126 workers, mean TQM score of workers is 8.5094 and that of managers is 7.9623 and the standard deviations 4.2767 and 4.5354 respectively. The following table 6.4. of output contains the main test statistics.

Table 6.4. Difference in the perception about the practice of Total Quality Management between the managers and workers of the ISO 9000 certified manufacturing organisation in Kerala.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	0.108	0.743	0.904	210	0.367	0.5472	0.6055	-0.6464	1.7408
Equal variances not assumed			0.904	209.280	0.367	0.5472	0.6055	-0.6465	1.7408

The significance value for the Levene test is high (typically greater than 0.05) denotes equal variances for both groups. If the significance value for the Levene test is low (typically less than 0.05), do not assume equal variances for both groups and indicates that there is a significant difference between the means of two group**.** Here the observed significance value for the Levene test is 0.743; this value is greater than 0.05 so it is assumed equal variances for both groups. The observed significance value of p is 0.367 which is greater than alpha value 0.05, hence failed to reject the null hypothesis. Hence it can be concluded that there exists no significant difference in the perception about the practice of Total Quality Management between the managers and workers of the ISO 9000 certified manufacturing organisation in Kerala.

V11.SUGGESTIONS

A strategic plan with clear organisational goals should be formulated for practice of Total Quality Management (TQM) ensure better organisational performance. A transition from traditional to TQM, is desirable to place the consumers on the top, followed by the employees and front-line supervisors as they are the deliverers of quality.

All the organization members are to be fully empowered for active employee engagement to achieve the collective purpose of TQM without threatening top-down managerial control of the enterprise.

The organisational members need to have a sound understanding of their role in the TQM Program. The people at all levels require orientation as to how they will be impacted under the philosophy of employee engagement in TQM.

Facilitate continuous learning and performance of standardized best practices of TQM.Use of group process-management techniques should enhance the learning of members from one another, which would aid in increasing the talent pool available for the work.

The improvement process of TQM should involve a group of complementary activities that provide an environment conducive to improvement of performance for both workers and managers.

Use results of statistical analyses and data-representation techniques for decision making, as it would lessen the degree to which teams make decisions based on misconceptions about the work system.

V111.CONCLUSION

In an ISO 9000 certified manufacturing organisation, the perception about TQM should be the same in all levels of the organisation that is from the top to the bottom level. TQM in organizations are likely to surpass the limitations of human information processing and emotionality in responding to environmental change. The perception about the practice of TQM should not be constrained with the culture, or role of any other organisational factors. In a TQM environment, everyone in the organisation should work for the common goal to achieve excellence in the practice of Total Quality Management.

REFERENCES

Anderson, John C., Manus Rungtusanatham, and Roger G. Schroeder. (1994). A theory of Quality management underlying the Deming management method." *Academy of Management Review*, 19: 472-509.

Business Today, (1995). Jan4 (1) 7-21.

Crosby, P. B. (1979). Quality is free: *the art of making quality certain*, New American Library.

Daniel I Prajogo and Amrik S Sohal. (2004). The Multidimensionality of TQM Practices in Determining Quality, and Innovation Performance: An Empirical Examination, *Technovation,* Vol. 24, No. 6, pp. 443-453.

Deming W.E. (1982). Quality productivity and competitive position. Cambridge, MA: MIT Centre for Advanced Engineering study.

Feigenbaum, A. V. (1991). Quality Control: Principles, Practice and Administration (3rd Ed.). New York: McGraw-Hill.

Fishman, N., & Kavanaugh, L. (1989). Searching for your missing quality link. *Journal for Quality and Participation*, *12*(4), 28-32.

Flyyn, B. B., Schroder, R. G., & Sakakibara, S. (1994). A Framework for Quality Management Research and an Associated Measurement Instrument. *Journal of Operations Management*, 11, 339-366.

Gilbert, G. (1992): Quality improvement in a defense organization: *Public Productivity and Management Review*.16(1): 65-75.

G. Harlan Carothers, Jr. (1986). Future Organisation of Change, *Survey of Business*, p.16-17.

International Organisation for Standardization (ISO) (2005), ISO 9000:2005 Quality Management Systems: Fundamentals and Vocabulary.

Ishikawa, K. (1985). What Is Total Quality Control? The Japanese Way. Englewood Cliffs, NJ: Prentice-Hall.

Joseph. M. (2010). Total Quality Management in ISO 9000 Certified manufacturing organisations in Kerala. Unpublished Ph D thesis, Mahatma Gandhi University, Kerala.

Krishnaswamy K N, Appa Iyer Sivakumar and Mathirajan M. (2006). Management Research Methodology, 1st Edition, Pearson Education.

Malcolm Baldrige National Quality Program, Criteria for Performance Excellence, available at http:// quality.nist.gov/Business_Criteria.html.

Powell, T. C. (1995). Total Quality Management as Competitive Advantage: A Review and Empirical Study. *Strategic Management Journal*, 16(1), 15-37.

Saraph, J. V. P., George, B., & Schroeder, R. G. (1989). An Instrument for Measuring the Critical Factors of Quality Management. *Decision Sciences*, 20(4), 457-478.