

Total quality management implementation and its impact on organizational performance in effort manufacturing industries case study Ethiopia – Tigray state

¹Gebremedhn Mezgebe Kidane, ² Prof. Dr. R. Satya Raju

¹ Research scholar, Andhra University, Visakhapatnam, Andhra Pradesh, India.

² Professor, Department of Commerce and Management Studies, Andhra University, Visakhapatnam, Andhra Pradesh, India.

Abstract

First and foremost this study has focused on the implementation of Total Quality Management and its impact on the organizational performance of manufacturing industries particularly the so called EFFORT (Endowment Fund for the Rehabilitation of Tigray state). The population for study covers only manufacturing companies in the Tigray state which are located in the northern part of the country. The industries selected for the purpose of this study are from those listed in the Information Centre for Ethiopian ministry of Trade and Industry, manufacturing firms in Ethiopia. A combination of both primary and secondary data were collected and incorporated for examining the relationship between Total Quality Management and Organizational Performance.

Keywords: total quality management, implementations, EFFORT, top management commitment, customer focus

Introduction

It may be admitted that garment industry, as any other complex In today's global competition and economic liberalization, quality has become one of the important factors for achieving competitive advantage in the today's stiff market completion. It is very successful weapon to win the global as well as the domestic market competition. A good quality product or service enables an organization to add and retain customers. Poor quality of goods or services leads to discontented or dissatisfied customers, so the costs of poor quality are not just those of immediate waste or rectification but also the loss of future sales due to the lost of the discontented customers

Technological innovations have diffused beyond geographical boundaries resulting in more informed customers in turn they wary much about global market. The business environment has become increasingly complex and the market place has changed from local to global. Constant pressure is applied on the management to improve competitiveness by lowering operating cost and improving logistic. Customers are becoming increasingly aware of rising standards, having access to wide range of products and services to choose from. There is an ever-increasing demand for quality product and/or services and this global revolution had forced organizations to invest substantial resources in adopting and implementing total quality management strategies. Total quality management (TQM) is the management process used to make continuous improvements to all functions of the organization. These improvements result in increased satisfaction and delight for both internal and external customer. The keywords to note in this definition are process and continuous improvement. TQM represents an ongoing, continuous commitment to improvement of performance. Because the quest for continuous improvements has no end, only new directions in which to head, TQM is process oriented and is not getting best in the first time. Statement of the Problem

The Industrial development and strength of any country depends primarily on the proper application of quality management systems in all productive stages of industrial products. Many companies promote quality as the central customer value and consider it to be a critical success factor for achieving competitiveness. Because of huge competition, market globalization, and public demand, it has become necessary for managers, engineers, crews, and other employees to know not only the methods of controlling the quality of products but also to know how to improve quality continuously. From 2002 onwards Manufacturing industry in the country has been grown significantly due to Government's initiatives, response to increasing public demand, and the investors increased interest in manufacturing sector. Even if it is not as per its expectation it contributes much for the employment opportunity of course the country is not highly industrialized zone; nevertheless, there are few big size manufacturing industries. Attainment of acceptable level of quality in the manufacturing industry in the country has been a problem since the beginning of the development process. Huge expenditure of time, money, and resources (both human and material) are wasted each year because of inefficient or nonexistent quality management systems (QMS). Implementation of Total quality management (TQM) system within the EFFORT manufacturing companies might result in better customer satisfaction, increase profit and decrease customer dissatisfaction.

Over the past decade, Ethiopia has attained high economic growth, averaging 10.7 percent per year. Since 2012, Ethiopia is becoming one of the fastest growing economies in the World. If the country continues its historically impressive growth performance, it could potentially reach middle income status by 2025, according to the latest Ethiopia Economic Update report. This, in turn, may require an adjustment in economic policy to

phase in the private sector as an additional engine of growth (.ADDIS ABABA, June 18, 2013).

The manufacturing industries in Tigray state are playing significant role for many socio economic development of the region and the country as well. Despite the lack of information about the current status of TQM implementation, it is widely believed that many manufacturing industries of the country have begun focusing on its implementation and producing quality products to support their competitive position and to fulfill the needs of both domestic and international consumers. All of these products necessitate a strong quality focus, and this cannot be accomplished without adopting an effective strategy and measuring its impact on OP. Therefore, an examination of TQM implementation in the Tigray manufacturing context is very crucial and important on OP of the industries with in. Therefore, an examination of TQM implementation under the EFFORT context is very important for that state.

The need for TQM implementation is being driven in the EFFORT by examining the major elements of TQM in these manufacturing industries. Therefore, this research has proposed a framework to investigate the current status of TQM implementation and measure its Impact on OP, thus making TQM initiatives more efficient and active in Ethiopian industries

Justification for the research

EFFORT is committed to contribute to the sustainable development efforts in the region beginning since the time it was established. In light of the changing business environment along with changes and development of the country's social, political and economic aspects as well as the global trends EFFORT has clearly stipulated its mission, vision and core values to be strictly adhered and committed by all its shareholders, management and employee.

The motivation or rational behind considered for this research is: This type of research is new in Ethiopian context especially in the particular state; TQM is a worthwhile issue universally for all organizations irrespective of their type and size to pursue so that the quality of products and services in Ethiopia manufacturing sector can be improved in the future. TQM has been widely studied in developed countries but few studies have ever paid attention to TQM implementation and its effect on Business Performance in developing countries, such as Ethiopia.

The Research Objectives

The main objective of this thesis is assessing the proper implementation of the concept of Total quality management in the EFFORT manufacturing industries.

Scope of the study

For the sack of datelines and management of the variables in the assessment process the research has both theoretical and geographical delimitation. As it is already mentioned in the back ground of the study area, this research is proposed to be conducted in Ethiopia particularly in the EFFORT manufacturing industries in the Tigray state.

Although the research is primarily focused on TQM implementation and its impact on OP in the EFFOR manufacturing companies, the findings may be valuable for other researchers to carry out an identical research in other manufacturing companies in other regions of the country.

Methodology of the Study

Introduction

The choice to undertake any kind of empirical investigation and research always presupposes the careful choice and design of appropriate research methodology which can directly fit with the problem under investigation.

The aim and theme of this chapter is to define the method followed by the researcher for collecting data for the empirical research and notifies how the researcher will go through the analysis of the collected data. It includes: - the study population, the investigated variables and the measurement methods used in investigating these variables, the development of the questionnaire tool, data collection, and data analysis methods. Great attention is paid to the method chosen for processing the data to test the applicability of the suggested total quality framework in the selected manufacturing industries.

Study Population

The population of this study incorporates employees in the manufacturing industries in the Tigray region under the category of Endowment Funds for the Rehabilitation of Tigray (EFFORT). The Endowment Fund for the Rehabilitation of Tigray (EFFORT) was established in the mid-1990s with resources accumulated and donated by the Tigray People's Liberation Front.

Data Presentation and Analysis

Introduction

This chapter basically contains the detailed information collected from the respondents of the research as per the content of the questionnaire designed. It is contented with the data processed using the various statistical techniques of SPSS version twenty. Neat information about the demographic characteristics of the respondents and the variables selected for the evaluation of implementation of TQM and its impact on the organization performance of the targeted companies is precisely presented and analyzed. It has also contained the reliability of the questionnaires developed to extract the required information.

Demographic Characteristics of Respondents

Position of respondents: The questionnaire of this dissertation is intentionally administered to employees of the industries at the position of division level and above. This is because; the researcher believed that employees at these levels have sound information and knowledge about Quality Management in the selected manufacturing industries. Additionally they have the power to participate in management decision of the companies. Therefore, statistical distribution of the respondents indicated that more than 95.5% of them are members of the management body of the organizations.

Work experience of respondents in the respected companies: of the total respondents 57.9% have work experience 5-10 years and 34.9% of them have work experience more than ten years. This implies that respondents are more familiar with organization and have a sense of organizational belongingness. In turn this help the researcher get actual information from the participants in all rounded decisions with issues regard to quality management.

Educational level of respondents: as the respondents of the sample replied majority of them are bachelor degree holders

(78.5%) and the remaining 13.1% and 8.4% are diploma and masters degree holders respectively.

Number of employees in the organization: as the response of the respondents yielded majority of the EFFORT manufacturing companies consist more than 2500 employees per each. This indicates the hugeness of the companies and their contribution for the employment opportunity of the state in particular and for the country in general.

Quality certification: the respondents also requested whether the selected companies are certified to any of the International Organization for Standardization (ISO)? Based on this respondents have agreed up on the membranes of the EFFORT companies to ISO 9001:2008. This implies that these manufacturing companies are subjective to internationally standardized products to satisfy international customer requirements.

Company plan to obtain a certificate of international quality assurance system in the short period: with this statement the respondents agreed that 78.3% of the companies have their own plan to get updated international quality assurance standards. This shows that the EFFORT manufacturing companies are working for better continual improvement of processes based on objective measurement of the international standards.

Factors of total quality management implementation

Top management commitment

TQM must first of all have the active commitment of top managers. They have to take personal charge, providing vision, forceful leadership and clear direction. They must translate this vision into detailed, long-term planning, often for a period of up to ten years.

Provided this 16 model questions are asked to employees of the selected industries. These questions are capable of checking to ensure to what extent the management of these industries are committed in ensuring quality of the products throughout proper implementation of the concept of total quality management.

1. Does top executives of your organization are actively involved in establishing and communicating the organization's vision, goals, plans and values for quality program?

As replies of the respondent show nothing is wrong with the top executives in establishing goal and vision; the problem is in the implementation of the goal and the vision. 45 percent of the respondents agreed in their reply. While the remaining percentage is distributed to the remaining alternatives.

2. Does top management of the EFFORT organizations take the responsibility for the company's quality performance?

Quality performance is not much the care of the management system of the industries. This well indicated in the response of the employees accompanied by 57 percent of them disagreement. This implies there is less commitment of top executives for excelling the quality improvement of the EFFORT organizations which can lag them in the global market competition.

But it has been well established in the different literatures that senior management commitment is required for any initiative to be successful. Total Quality Management process also considers the top management commitment as a backbone for successful implementation.

3. Whether top management of the organization is visibly involved in improving company's quality performance

Similar to the aforementioned replay majority of the population disagreed with the contribution of top executives of the organizations for continuous quality performance improvement. While 52 percent of the population argued the disagreement, 30 percent of them said that top executives strive for quality improvement in their respective organization.

But other literatures revealed that the levels of involvement in the program varied between the executives; however, all gave accounts of the value that they believed to have brought at all stages of the process. They considered their involvement in the initiative as a significant influence on the potential for program success/failure.

4. Top management derives the company effort towards excellence in quality

The researcher requested the respondents in order to assess the effort of the top management of these organizations toward quality excellence but almost 61 percent of them replied as there is less emphasis for quality excellence in the organizations while 15 percent of them agreed on the strive of top executives for quality excellence.

The Quality and Marketing Manager is responsible for coordinating TQM training, information, surveys and other review procedures, reporting organizational outcomes against performance indicators, and policy application.

5. Top management assigns higher priority to quality than costs and scheduling objectives

At any circumstance giving priority for quality makes many organizations effective in competing market at anytime and anywhere. *"Things of Quality Have No Fear of Time"* (EAQOUTES.COM). As the feedback of employees of the companies indicates less priority is given for quality than costs and objective of the organization. Small size of the respondents agreed positively to the statement but majority of them do not.

6. Top management provides work environment that is supportive of quality mission and policies

Regarding this case 51.5 percent and 21.5 percent of the respondents have replied disagree and strongly disagree respectively. This implies that management system of the organization didn't create conducive environment for maximizing quality.

7. Top management includes quality issues in their meetings' agenda

As the table above indicates more than 48 percent disagree with the statement that quality issue is not the frequent agenda of top executives in their regular meeting. The remaining 25%, 10%, 8.8% and 10.2% of the sample said strongly disagree, neutral, agree and strongly agree respectively. This all implies that quality agenda is not that much the care of the top executives which is not according to the principle of total quality management.

8. Top management action encourages the culture of trust

This question was forwarded to the sample population of these organizations. Therefore, as it is seen in the table 50.22% and 19.78% took disagrees and strongly disagrees respectively from total response rates. While the small proportion of the response covers agreement to the statement. This might indicate that there is less trust ship with in the management system of the organization.

9. Senior managers anticipate changes and make plans to accommodate it

Even if change in a given organization is so mandatory, the percentage distribution of the response indicates as there is less weight given to accommodate these changes. 53.3%, 25% of the response show disagree and strongly disagree of the responses respectively.

10. Senior executives insist on accuracy and reliability of all in formations and communication within the organization

As it is depicted in table 4.1 majority of the respondents agreed with statement. That is 45% and 30% of all the respondent replied agree and strongly agree respectively. While the remaining percentage is distributed to 11.5% and 8.5% and 5% disagree, strongly disagree and neutral respectively.

11. Top managements allocate adequate resources toward efforts to improve quality

Here 51.73% of the respondents agreed 20.23% strongly agreed. And 20%, 6% and 2% of them disagreed, strongly disagreed and remain neutral respectively. From this one can understand that the problem is not resource limitation. Indirectly it indicates adequate resource is budgeted to improve the quality of the product, but because of other reasons is not yet improved as per the expectation.

12. Top management view quality as being more important than meeting production schedule

Is ensuring quality of product is more important than simply meeting the production schedule of one manufacturing industry is the other question asked to the sample of the EFFORT organizations. Provided this, response distribution in percentage is given as 49%, 18.4%, 19.23% and 9.77% disagree, strongly disagree, 4% neutral, agree and strongly agree respectively. This implies that less weight is given for quality achievements than achieving the required amount. But as I have reviewed in many research findings and literatures, quality is more determinant than quantity. Quality matters for all.

13. We have faith, trust and confidence in our managers and juniors would like to follow them as role models

Low trust and confidence inferior to the superior is the other outcome obtained from the response of the sample. As already indicated in the table, more than 40% of them have said disagree with the statement. This is also very danger for one organization to be successful in its all dimension of performance. If lowers don't have full confidence in their bosses they can't respect and follow their instructions.

14. Top management is evaluated on quality performance

57% and 18% of the respondents have replied disagree and strongly disagree respectively for the question forewarned to assess the evaluation criteria. This implies that quality is not priority criteria for evaluating the performance of managers.

15. Top management peruses long term business success

as indicated in table 4.1 majority of the respondents have agreed on statement; that is 45.78% and 24.22% have said agree and strongly agree.

16. All department heads within our company accepts their responsibility for quality

Nothing is wrong with the department heads in accepting responsibility for quality. This is indicated in the response

distribution as 49.7% agree, 27.3 strongly agree, 9.5% disagree and 9% strongly disagree. From this it is possible to guess that department heads are dedicated to excel performance of organization through improving quality.

Generally about seventeen questionnaires were distributed to the sample population selected from each organization in order to dig out only to what extent is the management of these organizations is committed for total quality management. Therefore, the cumulative percentage of statics of the respondents revealed that there is low dedication and commitment from the management body of the EFFORT organizations for implementing the general concepts and principles of the philosophy of total quality management.

Customer focus

1. Product/service design development and delivery are based on meeting the needs of the customer

As it is seen in the frequency table distribution table disagree took the lion share of the alternatives. 56.1% of the total respondents disagreed that product/service design is not designed according to the customers' interest. The remaining 13.1%, 14.0%, 11.2% and 4.7% of the respondents said strongly disagree, neutral, agree and strongly agree respectively. This implies less attention is given for customers' interest. This is also danger for any organization to be competent in the stiff market competition both locally and internationally.

2. There is a wide variety of mechanisms to contact the customers to a company easily and effectively (e.g certain phone number, e-mail, and wed sits) are available.

Here is the percentage distribution of the frequency of the answer of the alternatives. 56.7%, 13.1%, 14.0%, 11.2% and 4.7% is the response for disagree, strongly disagree, neutral, agree and strongly agree respectively. From this one can understand that there a limitation in developing customer –company contacting mechanisms scenario. This would also result in less frequent contact between the two groups.

3. A wide variety of mechanisms for seeking leaning customer needs and expectations (e.g. focus groups, customer survey, customer reviews and visits) are in place

It is obvious that the existence of such kind of mechanisms in a given industry help get pleased and retained customers. However, the feedback obtained from the sample population are different.49.5% of the have assured the absence of it by saying disagree.18.5% of them also strongly disagreed, while the remaining 10.3%, 13.1% and 6.5% are neutral, agree and strongly agree respectively. This implies there is limited system of customer contacting mechanism for the EFFOR manufacturing organizations.

4. Key customer requirements are identified

According the response given from the sample population in most of the selected companies' customers requirements are not properly indentified ahead of the production. Majority of the respondents (57.9%) have disagreed with the statement. 26.2% have also strongly disagreed as there is no customer's requirement identification. This revealed that in some of the organizations' production system is not based on demand basis.

5. A complaint process and guide lines are established/ complaints are properly recorded

As one can easily understand from response distributions majority of the respondents have agreed (57.9%). From the remaining 26.2%, 5.6%, 6.5% and 2.8% of them have responded strongly agree, neutral, disagree and strongly disagree respectively. This implies that majority of the companies have good customer complain recoding and guiding process.

6. Communication and training process emphasize customer focus

As it is written in many literatures, having well satisfied customers is one critical objective. Developing and managing strong customer relationships for the longer term and knowing the customers' current needs and future expectations is a means to be successful in any business corridor. But as result of the questionnaire distributed to the employees of the companies indicates there is less emphasis given to customers especially in the communication and training process. 53.3% and 19.9% of the selected employees of the organization disagreed and strongly disagreed about the statement given above.

7. We measure customer satisfaction on a regular basis

Are there economic benefits to improving customer satisfaction? Many firms that are frustrated in their efforts to improve quality and customer satisfaction are beginning to question the link between customer satisfaction and economic returns. Therefore, there should be regular customer satisfaction measurement practice in a given company. As it is seen in graph below majority of the employees of the companies disagreed for questionnaire is regular basis of measuring customer satisfaction. This may have negative consequence for the sustainability of the companies.

8. Customer focused strategies and approaches are continuously reviewed for further improvement

Here 48.6%, 19.6%, 10.3%, 13.1% and 6.5% of the sample employees have said disagree, strongly disagree, agree, indifference and strongly agree respectively. Customer focused strategies is not well developed in some of these organizations.

9. After sales strategies are important parts of our business strategy

Do the EFFORT companies believe and consider after sale service is important strategy for business success? As it is depicted in the table above 59.7% of the have said disagree. This implies that there is less understanding of the importance of after sale service for one business firm's growth and development. 26.2% have also strongly disagreed with statement.

10. Customer relationship and partnerships are fostered

Is there fostered relationship between the companies' partners and customers? This is because such kind of relationship is powerful in indentifying and satisfying customer requirements. But according to this finding these companies failed in doing so. 46.7% and 31.8% of the respondents have disagreed and strongly disagreed with the statement respectively.

Correlation among the Elements of Total Quality Management

Correlation is a degree and type of relationship between any two or more quantities (variables) in which they vary together over a period; for example, variation in the level of expenditure or savings with variation in the level of income. A positive correlation exists where the high values of one variable are associated with the high values of the other variable(s). A 'negative correlation' means association of high values of one with the low values of the other(s). Correlation can vary from +1 to -1. Values close to +1 indicate a high-degree of positive correlation, and values close to -1 indicate a high degree of negative correlation.

Table 4.6: Interpretation of Pearson's correlation coefficient (r)

Value of r	Qualitative Description of the Strength
.00 to .20	Negligible
.21 to .40	Very weak
.41 to .60	weak
.61 to .80	Moderate
.81 to 1.00	Strong

Source: university of southern Queensland (2007). Research methodology 2 study work

Australia: university of southern Queensland p.4.6)

Here under, shows the correlation among one another of the various elements of the total quality management under this research. Value of the variables fit with either of the numbers mention in the table indicates to what extent the variables are related to each other and how the performance of one variable affects the other. For spacing purpose the variables are abbreviated as follow:

- Top management commitment = TMC
- Continuous improvement = CIM
- Customer focus = CF
- People management = PPM
- Process management = PRM
- Supplier quality management = SQM
- Organization performance = OP

Correlations of the Variables

		PPM	TMC	SQM	PRM	CI	CUF
TMC	Pearson Correlation	.819	1	.621(5)	.91(2)	.951(2)	.831(3)
	Sig. (2-tailed)	.812		.102	.157	.946	.141
PPM	Pearson Correlation	1	.811(2)	.571(5)	.611(4)	.742(3)	.919(1)
	Sig. (2-tailed)	.443	.102	.163	.063	.048	.835
SQM	Pearson Correlation	.571(3)	.751(3)	1	.888(2)	.612(5)	.891(1)
	Sig. (2-tailed)	.062	.157	.163	.109	.044	.912
PRM	Pearson Correlation	.611	.991	.899	1	.898	.777
	Sig. (2-tailed)	.432	.946	.063	.109	.218	.511
CUF	Pearson Correlation	.919	.831	.891	.777	.822	.652
	Sig. (2-tailed)	.573	.141	.048	.044	.218	
CI	Pearson Correlation	.742	.951	.612	.898	1	.822
	Sig. (2-tailed)	.848	.958	.835	.912	.511	.652

** Correlation is significant at 0.05 levels (2- tailed)

Based on the correlation matrix all variables are positively related to each other even the degree of correlation is different. The correlation between top management commitment and continuous improvement is highly stronger ($r=.951$) followed by the relationship top management commitment and process management ($r=.910$). This is also expected that top management should be committed for managing the all process of an operation and continuous improvement. Likewise people management and customer focus have stronger relationship ($r = .919$) which is more expected because customer oriented companies also give more care for people management both internal and external customers. Supplier quality management is highly correlated with customer focus ($r =.891$) followed by process management ($r =.888$).

Generally the various elements of total quality management under this investigation have strong multicollinearity to each other. The coefficient of the correlation of the six variables under this consideration ranges from .571 to .951 which indicates positive relationship. This is the most guessed that any company emphasize on advanced total quality management should perform equally the proper implementation of all elements. The performance level of one variable is highly affected by other variables. This finding has consistence with early researchers finding like Samson and Terziowski (1999) who established on similar elements.

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