



Quality Management and Statistical Performance in Industry

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Abstract

This study attempt to test the effect of Total Quality Management (TQM) competitive advantage and Industrial performance. The design of this research has quantitative Approach. Improving the quality with which an organization can deliver its products and services is critical for competing in an expanding global market. TQM begins with the primary assumption that employees in organizations must cooperate with each other in order to achieve quality for the needs of the customer. Quality teams provide companies with the structured environment necessary for successfully implementing and continuously applying the TQM process. Quality training is conducted and the continuous improvement process executed through a well-planned team structure.

Prior studies suggest that TQM strategy that focuses on increasing customer levels of satisfaction does have a significant and positive impact on performance. for example, suggest that attaining customer satisfaction is thought to increase the profits of the organization by decreasing costs through fewer returns and increasing revenues through customer loyalty. The results show that TQM practices have positive and significant effect both on organizational performance and competitive advantage. Competitive advantage has a positive and significant effect on organizational performance. Organizational performance is more influenced by competitive advantage than TQM practices.

Keywords: *TQM practices, quality training, competitive advantage, organizational performance, operation management.*

1. Introduction

Total Quality Management (TQM) is considered an important catalyst in this context. This is why the TQM concept has captured the attention of all sides of commerce and industry, as well as that of politicians and academics. The large number of articles being published in this area is a testimony to the high level of interest in quality issues. During the past decade, quality improvement has become one of the most important organizational strategies for achieving competitive advantage. Improving the quality with which an organization can deliver its products and services is critical for competing in an expanding global market. TQM begins with the primary assumption that employees in organizations must cooperate with each other in order to achieve

quality for the needs of the customer. One can achieve quality by controlling manufacturing/service processes to prevent defects. TQM, however, does not only consist of quality tools and techniques.

TQM processes also depend on a certain set of values and beliefs shared by all organizational members. The concept of quality has migrated from being considered as a non-price factor on which imperfect competition in the markets is based, to being considered as a strategic resource of firms. In other words, quality went from being a one-dimensional attribute of the product to being considered a multi-dimensional construct which has to be managed and the implementation of which leads to a dynamic capability of firms. Despite the large number of articles and books on TQM, total quality management remains a hazy, ambiguous

concept. This may be due to the fact that the term TQM means different things to different people. Quality “gurus” such as Deming and Juran have proposed their own frameworks. Quality teams provide companies with the structured environment necessary for successfully implementing and continuously applying the TQM process. Quality training is conducted and the continuous improvement process executed through a well-planned team structure. The ultimate goal of the team approach is to get everyone, including contractors, designers, vendors, subcontractors, and owners involved with the TQM process.

Prior studies suggest that TQM strategy that focuses on increasing customer levels of satisfaction does have a significant and positive impact on performance. For example, studies suggest that attaining customer satisfaction is thought to increase the profits of the organization by decreasing costs through fewer returns and increasing revenues through customer loyalty. The links between TQM and performance have been investigated by numerous scholars. While examining the relationship between TQM and performance, scholars have used different performance types such as financial, innovative, operational and quality performance. Although the effects of TQM on various performance types are inconsistent, quality performance generally indicated strong and positive relations. For example, studies examine the factors that either encourage or inhibit accounting lag following the implementation of TQM practices. Specifically, they found that industry sectors, management commitment, organizational structure, participation, and financial performance, have an impact on accounting lag. Marketing and TQM are complementary business philosophies that have attempted to develop an appropriate set of critical quality management constructs to represent an integrated approach to TQM implementation in a business unit. Some scholars have claimed that the effects of TQM practices on various types of performance measures differ. In addition, few empirical studies have investigated the mediating effect (indirect relationship) of one type of performance measure on the relationship between

TQM practices and another type of performance measure.

Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve a problem. A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act. In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision. Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go.

2. Total Quality Management (TQM)

Total quality management (TQM) is a systematic quality improvement approach for firm-wide management for the purpose of improving performance in terms of quality, productivity, customer satisfaction, and profitability. Since TQM practices have been embraced by many firms around the world for decades, they have earned the attention of many researchers from diverse areas. TQM is a management philosophy that is intended to empower every member of the organization. It is intended to promote continuous, sustained, and long term improvement in quality and productivity and to eliminate employees' fear of change. Its basic principle is that the cost of prevention is less than the cost of correction. Bellis-Jones suggests that TQM is not just another management fad; it is capable of delivering real competitive advantage. The TQM approach integrates the fundamental techniques and principles of quality function deployment, statistical control, and existing management tools in a structured manner.

TQM focuses on continuous process improvement within organizations to provide superior customer value and meet customer needs. TQM a popular guideline for organizational management is adopted for developing strategic infomaps and infocharts for

an information organization. TQM can be defined as a holistic management philosophy that strives for continuous improvement in all functions of an organization, and it can be achieved only if the total quality concept is utilized from the acquisition of resources to customer service after the sale. TQM practices have been documented extensively in measurement studies as well as in the studies that have investigated the relation of TQM practices to various dependent variables.

A central principle of TQM is that mistakes may be made by people, but most of them are caused, or at least permitted, by faulty systems and processes. This means that the root cause of such mistakes can be identified and eliminated, and repetition can be prevented by changing the process.

TQM is an effort that involves every organization in the industry in the effort to improve performance. It permeates every aspect of a company and makes quality a strategic objective. TQM is achieved through an integrated effort among personnel at all levels to increase customer satisfaction by continuously improving performance. TQM focuses on process improvement, customer and supplier involvement, teamwork, and training and education in an effort to achieve customer satisfaction, cost effectiveness, and defect-free work. TQM provides the culture and climate essential for innovation and for technology advancement.

3. The Total Quality Management (TQM) Strategy

Four components frequently cited as critical to a successful TQM strategy are customer satisfaction, employee involvement, managerial leadership, and process improvement and control. Marketing theory has long recognized the importance of customer satisfaction to the business organization. Quality focused organizations must identify their customers (both internal and external), determine the specific needs of these customers, integrate all activities of the organization (including marketing, production, finance, HRM, and IS) to satisfy the needs of these customers, and finally, follow up to ensure the customers have been satisfied. JIT, TQM, and SCM represent alternate approaches to improving

the effectiveness and efficiency of an organization's operations function.

The cost of quality is considered by both Crosby and Juran to be the primary tool for measuring quality. In their approach, it is used to track the effectiveness of the TQM process, select quality improvement projects, and provide cost justification to doubters. By bringing together these easily assembled costs of review, inspection, testing, scrap, and rework, one can convince management and others of the need for quality improvement." Cost of quality has received increasing attention in recent years. It is effective in its intended purpose of raising awareness about quality and communicating to management the benefits of TQM in terms of dollars.

Under TQM systems, product/service design efforts have two objectives: designing manufacturable products and designing quality into the products. Designing to simplify manufacturing utilizes cross-functional teams to reduce the number of parts per product and standardize the parts, which results in more efficient process management by reducing process complexity and process variance. Effective supplier quality management is facilitated by long-term, cooperative relationships with as few suppliers as possible to obtain quality materials and/or services. Maintaining a small number of suppliers improves product quality and productivity of buyers by encouraging enhanced supplier commitment to product design and quality. Quality creates not only a price/value advantage over competitors but also enables the firm to charge a higher per/unit sale price through differentiation.

A strategy of high quality leads to a sustainable competitive advantage. Firms competing on quality pursue an operational strategy that controls quality of the product/service and seeks continuous improvement.

4. Theory of Total Quality can be Summarized as Follows:-

1. Quality leads to lower costs as defects are reduced;
2. Quality is made in the boardroom; it cannot be instilled into shop floor without the

initiative and commitment of top management;

3. Most defects are caused by the system not the worker;
4. Inspection is too late; aim to reduce defects during production and eliminate mass inspection;
5. Eliminate numerical quotas, slogans, exhortation and targets for the workforce and promote sustained and continuous improvement of process and quality of output;
6. Drive out fear of change from workers; institute a vigorous program of education, training, and retraining to help the workforce improve continuously and to increase their job security;
7. Break down barriers between staff areas and abandon review systems that will destroy teamwork and create rivalry;
8. End the practice of awarding business on price tag alone; look for suppliers committed to quality and develop long term relationships with them.

5. Total Quality Management and Organizational Performance

Performance measurement is an integral part of all management processes and traditionally has involved management accountants through the use of budgetary control and the development of financial indicators such as return on investment. However, it has been claimed that conventional aggregate financial accounting indicators are inappropriate in TQM settings. Several authors have claimed that an important part of ensuring that TQM leads to sustained improvements in organizational profitability is that direct quantitative measures of manufacturing are used to assess the effectiveness of managers' efforts to manage the development and implementation of TQM programmes.

With the growing awareness that quality of final products and services is a strategic competitive variable, companies have recognized also that the concept of high quality must be applied to

production processes to generate quality products and minimize costs. TQM has evolved as a philosophy that emphasizes the need to provide customers with highly valued products and to do so by improvements in efficiency by way of eliminating waste, reducing lead times at all stages of the production process, reducing costs, developing people, and improving continuously.

While TQM provides a potential for organizations to enhance their competitiveness there is evidence that many organizations have been disappointed in the extent to which TQM has been associated with sustained improvements in organizational profitability. Performance management systems are a cornerstone of human resource (HR) management practices and are the basis for developing a systems approach to organization management. In theory, a performance management system links organizational and employee goals through a goal-setting process, and subsequently links employee goal achievements to a variety of HR management decisions through a performance measurement process.

Shank and Govindarajan and others argued some time ago that quality practices had become so important that management accounting could no longer ignore TQM. Traditional accounting supports cost and production analysis, but not quality analysis. The thrust of the TQM philosophy is that quality and its management have to be built in from the beginning and that the accomplishment of quality standards and improvement is the responsibility of everyone.

Waldman and Gopalakrishnan claim that quality is, in fact, largely a customer perception based on how well the product or service meets the customers' needs and expectations. Poor quality occurs when these needs are not met. Satisfying the customer is an important aspect of the manufacturing process and this requires the customer's input at all stages of manufacturing. There is considerable anecdotal evidence on the extent to which TQM enhances the potential for firms to improve organizational performance.

In addition, the empirical findings of Kim and Miller, based on a survey of the manufacturing

strategies of 111 firms in the U. S. A. , showed that activities associated with TQM (such as conformance quality, product reliability, on-time delivery and performance quality) together with price were the most important capabilities for manufacturing firms in the 1990s. Schemer (1988) and Schemer and Cook (1985) demonstrated that throughput time reduction, improved quality and inventory reduction all enhance productivity .

6. Conclusions

- An integrated approach of Total Quality Management (TQM) and quality assurance/quality control (QA/QC) is required to provide quality products and services in the construction industry. Early indications reveal substantial improvements in achieving quality requirements among organizations that have implemented TQM.
- Construction companies have, with minor modifications, adopted the methods and concepts of TQM that are being used in U.S. manufacturing and have applied them to their operations.
- The development and deployment of a TQM approach must be tailored to the specific needs of an organization. A program can not simply be adopted from a consultant and deployed.
- There must be action behind the words and ceremony, and this can only be accomplished by senior management understanding and involvement. Management must participate in the implementation process and be fully committed to it if TQM is to succeed.
- The use of small, well-placed, pilot projects is an effective method for gaining acceptance of TQM among the employees and management of a company.
- The TQM process takes about three years before it is accepted throughout a company and significant results are achieved.
- Training for TQM will not succeed unless both the technical and humanistic aspects are addressed. The more technical the processes, the more the emphasis in training should be

placed on interpersonal and communication skills.

- The topics and examples used in the training effort should be integrated with the actual work processes of the individuals being trained. The employees should apply newly learned skills to their jobs as quickly as possible.
- Statistical methods are being effectively applied to engineering and construction processes and are being used to identify and solve problems and to improve processes. For tracking to be utilized effectively, employees and management must first understand the fundamental concepts of TQM and the purpose for controlling and constantly improving their processes.

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