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Thesis Title

A Study on the Effect of Implementing TQM and ISO
9001 on Companies' Performance

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By

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ABSTRACT

Total quality management system (TQMS) is more than just a set of tools and techniques that it also requires a great attention to the performance of the companies involved to be a TQM. The relationship between a companies' performance and its ability to implement a TQM technique is a long-term effort. Numerous manufacturing organizations while actualizing TQMS, they just stress on TQM apparatuses and procedures. They didn't give more consideration regarding the human element and a decent association with providers or more particular they neglected to construct the right quality framework. Consequently, these organizations couldn't acquire the full advantages of TQMS usage, and truth be told, they are experiencing issues managing the achievement accomplished.

This study investigates the TQMS critical success factors (CSFs) framework for successful implementation of TQMS methodologies. This framework helps companies to assess their performance and adopt TQMS criteria to recognize the full benefit from implementation TQM methodology. The method used for the research study is the questionnaire method using a TQMS and performance indicators questionnaire. The questionnaire has been designed by the researchers who are associated with the principles important to the implementation strategy.

The conclusion from this study indicates that the developed questionnaire is valid to assess the companies' TQMS that positively affects companies' performance of the manufacturing companies and successfully defined the areas of strengths and weaknesses in these companies.

Key words: ISO 9000 certification – TQM – Critical success factors (CSFs)
– TQMS assessment – Key Performance Indicators (KPIs) assessment.

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List of Abbreviations

CSFs	Critical success factors
C.V	Coefficient of variation
FMEA	Failure mode and effect analysis
KPI's	Key performance indicators
ISO	International organization for standardization
N	Sample size
PDCA	Plan, do, check and act (Deming's cycle)
QA	Quality assurance
QC	Quality control
QI	Quality inspection
r	The Pearson correlation coefficient
R ²	Coefficient of determination
TQC	Total quality control
TQM	Total quality management
TQMS	Total quality management system
SQM	Supplier quality management

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Chapter 1

Introduction

In today's worldwide surroundings, associations are always searching for the approaches to develop and enhance their business as far as quality and amount. This study seeks for evaluating the effect of TQM and ISO 9001 in enhancing the companies' performance regarding quality and amount (volume) of the items. There are five parts in the standard that define activities that required to be presumed when the companies apply their system: inclusive quality management system requirements and documentation, management responsibilities, planning and objectives, focus, policy, management of resources and allocation, product implementation and handle administration and estimation, controlling, investigation and change.

The start of quality idea was in manufacturing organizations which producing physical and perceptible products. Certainly, it is clear that immediate feedback should be received by one worker if the subassembly being moves through were faulty. Consequently, much progress being realized in the pursuit of product-and user-based quality as firms pursued either the production or product philosophy in their companies. But it has been recognized that the world moved in the 1980s to a new consumer-oriented economy which makes the quality concepts closer to the user and value-based approach which Garvin has been described.

Spiritual quality leaders offered several quality definitions where organizations can use to describe the approach of management they meant to use for achieving their organizational purpose. It has been realized that an organization must meet many customers' different types. To accommodate the need to meet these requirements, TQM offers this following definition: quality a fundamental business system that gives products and enterprises that totally fulfill both inside and outside clients by meeting their unequivocal and verifiable suspicions.

The west transformation of quality was ease back to take after and did not start until the mid 1980s, when organizations presented their own quality projects and activities to vanquish the Japanese achievement.

TQM is a framework which forms the ceaseless advancement and change, business to accomplish the destinations of today's exceptionally focused environment and deliberately critical to take measures to enhance companies' performance. In 1982 at the exchange and industry production division it was proclaimed that Britain's reality exchange share was rotted and this way spectacularly affects the nation way of life. There was angry worldwide rivalry and the nation's popularity and financial execution for quality was established by the organizations and items/administrations notorieties and execution. The purpose was to recognize the importance of quality for the companies' competitive advantage and standing in the world market place

This study analyzes the effect of both a TQMS and ISO 9000 confirmation achievement on companies' performance. The survey outcome has been uncovered that TQM positively affects the performance. The analysis outcomes identified eight factors that have an impact on companies' performance, which are: LEADERSHIP- top management must understand the significance of quality, quality is obligation of everyone except extreme duty is the CEO, quality magnificence turns out to be a piece of business procedure and lead in the execution procedure, CUSTOMER FOCUS- client is constantly appropriate (in Japan client is the ruler), client foresights forever changing, need to consistently inspect the quality frameworks and practices to be receptive to continually changing necessities and this done by utilizing checklist for both internal and external clients, INVOLVEMENT OF PEOPLE-people is the most important resource, quality comes from people, 15% operators errors and 85% management system (Deming's principle), education and training, motivational programs, conducive work culture, right attitude and commitment, PROCESS MANAGEMENT- a vital piece of TQM is to focus on process considering, see all work and process, oversee assets, diminish blunders, meet reckonings of downstream clients and make handle more secure and all the more fulfilling to the individual doing, CONTINUOUS IMPROVEMENT- by always embracing use of an expository quality instruments and innovative intuition to recognize essential ranges for changes, continually benchmarking execution against most recent legitimate, administrative and statutory necessities and taking suitable activities for getting productive and compelling

overhauled comes about, SUPPLIER RELATIONSHIP-a company and its supplier are connected and supplier relationship promotes the capability of them to create value, 40% of cost comes from purchased materials, therefore the relationship with the supplier is important and the organization needs their association to accomplish quality change long haul buy contract, DECISION MAKING- in light of information not individual or fortuitous deduction in view of instinct at essential stages that impact the association's central goal, vision and quantifiable objectives. COMMUNICATION-its methodology embraced inside the working framework, its technique and continuous premise take choices effectively, to keep up straightforwardness in working furthermore to help in building certainty among all staff individuals.

A descriptive research design using survey was adopted in this research. Information with respect to the impact of QMS (ISO accreditation) and TQMS on the companies' performance were assembled mainly utilizing questionnaire. The accumulated information were broke down utilizing enlightening examination, for example, mean and standard deviation. Questionnaire has been set up subsequent to deciding a reasonable sort of example and approach that is fitting for the survey. The inquiries are set up with a mean to keep an eye on the degree of comprehension and execution of TQMS through 40 manufacturing companies. PC programming (SPSS 17 rendition) for the target of the examination is familiarize in the arrangement for the Reliability investigation, Independent t-test, Levene's test, Compare Means test, ANOVA test (η and η^2), Regression Analysis.

1. 1. Prominence of the Research

The prominence of quality and organizational performance (OP) has a great significance in the world markets as a meaning of competitive advantage, and then the industrial section is one of the real benefactors in the manufacturing organizations economy, this study will define the level where manufacturing companies adopt a TQM structure and decide the relationship between TQM and the performance. To obtain this objective, this study will:

- **First:** distinguish which of that TQM criteria are the most affected on the companies' performance:
 - Leadership.

- Customer focus.
 - Involvement of people.
 - Process approach.
 - Continuous improvement.
 - Supplier relationship.
 - Decision making.
 - Communication.
- **Second:** scrutiny the contextual factors affecting TQM structure and Organizational performance.
- **Third:** evaluate the impact of TQM on companies' performance. To measure that performance, this study focuses on some performance indicators:
- Revenues.
 - Market share.
 - Product quality.
 - Customer satisfaction.
 - Supplier relationship.
 - Employees participation.

1. 2. Main Problem Statement

Oakland et.al,[67] have discourse identified with ISO 9001's commitment in the quality change process and its place towards TQM, when they present that a quality confirmation framework considered as one of the three noteworthy TQM parts. Contradictory, [16] specified that ISO 9001 was not the road to start a TQM program. Otherwise, [46] stated that ISO 9001 is more than a weapon help in the implementation process of TQM. [61 and 62] Stated that companies applying both TQM and the standards of ISO9001 did not achieve positive results and the accumulative advantages to the organization are not superior to those accomplished if any of them connected in segregation.

This leads to the following problem that will be evaluated by the proposed research: how to develop a model for evaluating total quality management system (TQMS) criteria at manufacturing companies for successful implementation of ISO 9001 and TQM methodology; and also, how to realize a method to measure the TQMS criteria of the

proposed model in manufacturing companies. TQMS measures enable the organization to get a true picture about the most affected factor on the companies' performance, which lead to find new areas of improvement.

1. 3. Objectives of the Research

This research will attempt to carry out an extensive analysis to examine to what extent TQMS positively affects the performance of the manufacturing companies.

1. 4. Questions of the Research

- To what extent does the leadership has a positive effect on op?
- To what extent does the customer focus has a positive effect on op?
- To what extent does the involvement of people has a positive effect on op?
- To what extent does the process approach has a positive effect on op?
- To what extent does the continuous improvement has a positive effect on op?
- To what extent does the supplier relationship has a positive effect on op?
- To what extent does the decision making has a positive effect on op?
- To what extent does the communication has a positive effect on op?
- Which of the eight criteria significantly associated with the OP through the manufacturing companies?
- To what extent do the eight criteria have a positive effect (affected) on op?

1. 5. Definition of main concepts

It is significant to mention the definitions of several concepts which are used in this study. Consequently, below are descriptions of the main concepts.

1. 5. 1. Definition of organizational performance (OP)

Organizational performance incorporates the honest to goodness yield or eventual outcomes of a relationship as measured against its

arranged yields (or objectives and destinations). As per [75] organizational performance consolidates three particular regions of company results: (a) financial performance (benefits, return on assets, level of productivity, and so on.); (b) product performance (sales, market share, and so forth.); and (c) shareholder return (signify shareholder return, money related regard included, and so forth.). The term Organizational viability is broader. Specialists in various fields are concerned with the performance including key coordinators, operations, finance, legal, and organizational change. Starting late, various affiliations have attempted to administer organizational performance utilizing the balanced scorecard strategy where performance is taken after and measured in various estimations, for instance, financial performance (e.g. shareholder return), customer benefit, social commitment (e.g. corporate citizenship, assemble outreach), agent stewardship.

1. 5. 2. Definition of critical success factors (CSFs) in TQM

Oakland [66] The CSFs are the critical areas where companies must fulfill to achieve its function by examination and classification of their effects. Furthermore, there are multiple CSFs that can be identified in the literature, [100] conducted that the CSFs of TQM are, continuous improvement, management leadership, measurement and feedback, supplier quality assurance, change devices and methods, human asset improvement, education and preparing, frameworks and procedures, assets, and workplace and culture. [32] made a study in the industrial organizations to discover that there are ten TQM basic elements are individuals and client administration, provider associations, correspondences, consumer loyalty, outside interface administration, vital quality administration, cooperation structures for development, operational quality arranging and quality change frameworks. The observational discoveries from [73] consider 53 Australian manufacturing organizations and found that the basic components of the effective TQM execution are administration, technique and orchestrating, representative fortifying and worker inclusion, delegate get ready and advancement, data and testing and client administration. And afterward, the ebb and flow explore proposed an all encompassing system for the usage of TQM identified with a broad survey of the contributed elements to an effective TQM execution.

1. 5. 3. Definition of survey

A survey is a method of data collection used a questionnaire and analysis approach where questions have been answered by the respondents and respond to developed statements in advance and distinguished by a large group of persons that have enough awareness, attitudes, and behaviors [59].

1. 6. Research Methodology

To answer the inquiries and to accomplish the point of this exploration, an explorative, descriptive survey questionnaire will be used. The purpose of the explorative, descriptive design is to gain information about one or more groups of people which could be their views, characteristics or attitudes by asking them specific questions [56]. The main use of the descriptive design is to determine the components that influence the execution of ISO 9001 and TQM methodologies on companies' performance.

The questionnaire survey method has been selected as the preferred type of data collection procedure for the study, because of logical, investigational and data producing properties of the survey design. It is, also, regarded as an inexpensive means of collecting data, which allows historical comparison, and it is quick. The disadvantages of a survey design is that the data may be incomplete, which limits the scope of the study. A descriptive survey design is selected for this study, because information is gathered from a variety of people who resembles the total population of interest for the researcher [56].

1. 6. 1. Method of data collection

The research method is depending on data collection. It is described in three aspects: the target population and sampling, the instrument used for data collection, and the data collection procedure.

1. 6. 1. 1. The target population and sampling

The sampling design for this population is a random sampling method. The random sampling method is used because every member of population who will be selected for the study will have the same chance, probability of being selected to take part in the study and is convenient when population is small [56]. The individuals will be selected randomly