

**TOTAL QUALITY MANAGEMENT
IN
SERVICE INDUSTRY**

by

ROZIMI BIN REMELI

**Research report submitted in partial fulfillment
of the requirements for the degree
of Master of Business Administration**

1998

ACKNOWLEDGEMENTS

First and foremost, I would like to express my greatest gratitude towards Allah SWT, With His Most Gracious and Most Merciful, I am able to complete my project paper.

Very special gratitude and love to my parents Jahara Omar and Romli Teh for giving me their greatest care and love.

My heartfelt thanks to my supervisor, Dr. Yash Basin for being so patient and understanding in guiding me start and to complete my project.

My thoughtful thanks to my supportive and beloved wife Azizah Ariffin , my dearest sons Ahmad Afifi, Ahmad Hafizi, Ahamd Faisal and Ahmad Faris for their encouragement, love and care.

Without forgetting my dear lecturers, for their patience and guidance throughout my study. My colleagues and friends for friends for their encouragement and support. And to all who helped me in one way or another whom I had accidentally left out.

Lastly, my acknowledgement to my former MBA Chairman and lecturer Dr. Syed Azizi Wafa, and present MBA Chairman Prof. Madya Dr. Muhamad Jantan for their valuable advice and The Universiti Sains Malaysia for granting me the opportunity to pursue my study in this course.

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ABSTRAK

Kajian ini menyokong pendapat bahawa didalam industri perkhidmatan, sebuah model yang dibina berlandaskan pengurusan secara TQM, mampu menjadi satu faktor ulung didalam memberi arah kepada sesebuah organisasi supaya menjadi lebih kompeten. Kajian ini dibuat bagi mengenalpasti , sekiranya ada, sebarang hubungan diantara faktor-faktor TQM dan Kejayaan Menyeluruh bagi syarikat-syarikat didalam industri perkhidmatan.

Bagi tujuan menilai tahap faktor-faktor TQM yang diamalkan didalam industri perkhidmatan, lima faktor-faktor TQM telah dikenalpasti. Faktor-faktor berkenaan ialah

(1)Pembabitan serta komitmen yang ditunjukkan oleh pegawai-pegawai tinggi atasan ke arah falsafah dan amalan-amalan TQM (2) mengambil serta menghebahkan falsafah TQM (3) berhubung-rapat dengan pengguna dan pembekal (4) menyediakan program-program ke arah pembangunan sumber manusia (5) organisasi terbuka.

Pengurus-pengurus daripada 120 organisasi perkhidmatan disektor awam dan swasta dikenalpasti untuk mengambil bahagian didalam kajian ini. Seramai 67 orang daripada mereka (atau 56 %) telah mengambil bahagian. Semua keputusan hasil kajian tersebut menunjukkan bahawa hanya satu faktor sahaja yang mempunyai pengaruh positif yang signifikan terhadap Kejayaan Menyeluruh Organisasi-Organisasi tersebut. Semakin tinggi tahap keterbukaan sesebuah syarikat, semakin tinggilah Kejayaan Menyeluruh Syarikat berkenaan.

ABSTRACT

This study argues that within the service industry a model built upon the TQM approach to management can be a dominant factor in guiding the organization to an effective means of becoming competent . This article examines the relationship, if any, between the critical factors of TQM and the firms' Total Performance in service industry.

In order to evaluate the level of TQM factors practiced in the service industry, five TQM factors have been identified. The factors are (1) commitment and involvement of top level executives towards TQM philosophy and practices, (2) adopting and communicating TQM philosophy, (3) closer to customers and suppliers, (4) human resource development programs and (5) open organization.

Managers of 120 service organization were identified to participate in the study. Sixty seven of them (or 56 %) had responded. The results from the research study indicate that only one factor, which is open organization, has significant positive impact on the firms' Total Performance. The higher the degree or the level of openness in the organization, the higher is the firms' total performance.

Chapter 1

INTRODUCTION

1.0 Background

The challenge that today's organizations are facing shows that organizations must cope with an increasingly turbulent environment which is unpredictable and full of uncertainty (Javidan & Dastmalchian, 1995). Business today has to admit that customers are the "King". Thus, in order to exist and prosper, organizations have to ensure that the needs of their customers are fulfilled.

For the past 15 years, Total Quality Management (TQM) has been singled out to be one of the most remarkable solutions for firms to gain competitive advantage in such market place (Powell, 1995). A number of successful organizations claiming that their achievement to provide quality goods/services has a lot to do with TQM. Studies have shown that the strategic benefits of quality are in terms of enlarged market share and return on investment as well as lower manufacturing costs in the long run and improved productivity and profitability (Powell, 1995). Meeting the needs and requirements of customers is the main thrust of TQM.

The changing composition of the Malaysian workforce coupled with rapid changes in technology has forced many Malaysian companies to look for alternative methods to manage their business more effectively. To this end, many international companies operating in Malaysia have turned to the process of TQM as the tool that will help them gain control of their industry, specifically by anticipating customer expectations and providing total customer satisfaction. The world is moving towards a "borderless" nation, where traders, bankers and investors can perform their

business anywhere they like without facing much trouble, especially in terms of the local trade barriers. Malaysian organizations must therefore seriously look for a mechanism to remain competitive once Malaysian market is widely open to the rest of the world.

1.1 Research Questions

The research questions in this study are as follows:

- (I) What is the degree/extent of TQM factors practiced by the Malaysian service organizations?
- (II) What is the relationship between TQM factors practiced in the service organizations and the Total Performance of those organizations?

1.2 Purpose of Study

The purpose of this study is to identify whether there is any relationship between TQM factors and the Total Performance of organizations in service industry. It will thus answer the question of how Malaysian service firms can satisfy the needs of their customers, improve revenue growth and productivity, as well as achieving other competitive advantages by practicing those critical success factors.

There are several reasons why this study is conducted although a number of studies has been done on TQM. Firstly, the focus of previous works has always been on the manufacturing sector. Service organizations differ from manufacturing organizations especially on the types of products they produced. Unlike the manufacturing industry, that produces tangible products, products in service industry are intangible in nature. Defective or non-quality tangible products are much easier to identify and

thus easier to rectify. Managing the production of tangible products such as cars for instance is much easier as they are tangible in nature. Whereas, managing the production of intangible products depend so much on customers' perception. Thus, results obtained from manufacturing sector are not generally accepted by service organization.

Secondly, this research work is performed in Malaysia. The local Malaysian environment differs in many aspects as compared to the American environment where most of the previous studies on TQM were done. This research study is thus expected to show results tailored to the Malaysian environment.

As this study is specifically done on service industry the using local respondents, results obtained will surely be of significant use to the local service organizations in particular, which requires serious attention especially on the aspect of improving service quality. There is no doubt as to whether those organizations should adopt practicing those critical TQM factors in order to gain competitive edge as the study is of local in nature.

It is also hoped that this study will contribute to the body of knowledge on TQM as a whole. This research work is hoped to be an "eye opener" to the Malaysian service industry. Therefore, this research is a part of the contribution toward this topic in the service industry.

1.3 Definitions and Related Concepts

Definitions and related concepts focus on TQM and its critical success factors identified for this study.

1.3.1 Total quality management (TQM)

TQM refers to managing all functions and activities necessary to determine and achieve quality (Stebbing, 1990). Powell (1995) describes TQM as an organization-wide approach, which seeks to improve the overall performance, profitability, and efficiency of the business. It focuses on continuous process improvement through the participation of every individual in the organization. The thrust of TQM programs is to satisfy the requirements of all customers through the development of error-free processes within the organization.

Ross (1993) defines TQM as an integrated management philosophy and set of practices such as continuous improvement, meeting customers' requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process redesign, competitive benchmarking, team-based problem-solving, constant measurement of results, and closer suppliers' relationship.

Nathan (1997) stresses that the basic principles of TQM can be defined as a holistic management philosophy that seeks continuously to maximize customer satisfaction, and continually to identify and eliminate non-value-adding activities from the organization. TQM is not merely about implementing dynamic management systems; it is also about embedding a culture of continuous improvement and customer focus within an organization.

TQM in this study refers to the set of practices that emphasizes, among other things, improving work processes, increasing number of training for staff, working towards achieving zero-defects, competitive benchmarking, working closely with customers as well as suppliers, constant measurement of results and open organization. This would also mean requiring commitment and involvement of top level executives in the organization.

1.3.2 TQM factors

The eleven TQM factors identified for this study are: **(a) commitment and involvement of top executives towards TQM philosophy and practices, (b) adoption and communication of TQM, (c) closer to customers, (d) supplier partnership, (e) benchmarking, (f) Increased training, (g) open organization, (h) employee empowerment, (i) zero-defects mentality, (j) process improvement and (k) performance measurement** (Powell, 1995).

Top Executives' Commitment and Involvement in TQM Philosophy and Practices: According to the Oxford-Advanced Learner's Dictionary, philosophy means pursuit of wisdom or knowledge, especially of general causes and principles. Practice means habitual action by means of established method. Practice is action as opposed to theory. Commitment refers to undertaking or pledges that restricts freedom of action or involvement with a particular action. It is the state of being willing to give a lot of time, work, energy, etc. Therefore, top executives' commitment and involvement in TQM philosophy and practices refers to the organization's top management's willingness to be involved in TQM programs in terms of time, energy and ideas.

Powell (1995) describes committed leadership as a near-evangelical, unwavering, long-term commitment to the philosophy, usually under a name like Total Quality Management, Continuous Improvement, or Quality Improvement.

Adoption and Communication of TQM: Adoption, based on the Oxford Advanced Learner's Dictionary, means to accept and takeover a formal report, etc. Communication on the other hand is the action or process of communicating or exchanging information, news, etc with somebody. Thus adoption and communication of TQM refers to the process of taking over / acceptance of TQM philosophy and then followed by the action to deliver those information to others.

Adoption of TQM philosophy and practices may be noticed when the company's policy statement started to show some clear committed principles on quality. Some kind of recognition and reward is also being introduced in such organization to promote TQM programs.

Communication plays a vital role in determining the success or failure of a program. Best organizations recognize that communication could make the difference between success and failure. They see effective communication as a means of maintaining enthusiasm for quality initiatives within the organization. TQM principles and practices can only be understood throughout the entire organization if they are effectively communicated throughout the organization.

Closer to Customer: A customer is any person or group whom you must satisfy in order to achieve and maintain reputation, image, market share, profit or the like. A customer is any person or group who influences your current or future success

(Kinlaw, 1992). Closer to customers refers to how close is an organization to their customers and how much are customers being involved in the organizations where they purchase goods/services. Their involvement could be in terms of designing of the services and participating in organizations' TQM programs.

Customers are very crucial to any business especially to the service industry. Being closed to customers will clear a lot of misperception by customers to a company and customers' needs could be easily and promptly handled. This could be seen through the increasing direct personal contacts with customers.

Supplier Partnership: Supplier partnership is the situation where the service organization and the suppliers get together to ensure the success of both companies. Without suppliers' support and commitment, service firms just like any manufacturing firms will not be able to perform excellently because they too require raw materials in order to serve their customers.

A hospital for instance cannot deliver quality and prompt service to its patient without receiving quality and prompt supply of medicine as well as other health equipment from its suppliers. Supplier partnership is aimed to get suppliers' involvement in meeting stricter quality specifications and adopting quality program.

The continual improvement of total quality is impossible without input from internal and external suppliers that is on time and fully fit to use. To achieve continual improvement of total quality, teams and organizations assume responsibility with their suppliers to improve their suppliers' performance (Kinlaw, 1992). Supplier

relations should progress in the direction of supplier partnerships that embrace the following principles:

- * Both parties are to benefit from the relationship.
- * Both parties should seek to improve quality.
- * The number of suppliers used should be minimized.
- * There should be an intention to form long-term relations.

Benchmarking: Benchmarking is the ongoing activity of comparing one's own process, product, or service against the best known similar activity, so that challenging but attainable goals can be set and realistic course of action implemented to efficiently become and remain best of the best in a reasonable time (Balm, 1992).

Benchmarking is a process in which a small team of people can help their organization to efficiently travel the journey of continuous improvement to become best of the best. They accomplish this by thoroughly understanding their own processes (or products/services); by finding the world class organizations that do what they do; by learning how well those world class companies perform on key customer-driven measurements; by understanding how those companies accomplish their admirable levels of achievement; and by adopting appropriate ideas into their own processes (Balm, 1992).

Benchmarking is a continuous, systematic, process of evaluating companies recognized as industry leaders, to determine business and work processes that represent best practices, establish rational performance goals (Zairi, 1994).

Training: According to the Oxford Advanced Learner's Dictionary, training means teaching a person to perform a particular job or skill well, or to behave in a particular way, by regular instruction and practice.

Here, training refers to the acquisition of specific technical knowledge as well as learning new attitudes, behaviors, and skills.

TQM itself requires new skills for developing and leading teams, planning and managing teams, planning and managing TQM, satisfying and responding to customers, structured problem solving, process analysis and simplification, statistical process control, and measurement (Kinlaw, 1992).

Training and education prepare employees for greater involvement in the organization's quality process, providing them with the right type of training is crucial. Generally, leading organization ensure their education and training programs include both the basis of quality and TQM and the set of skills for continuous quality improvement.

Open Organization: This term refers to organization having less bureaucracy, very low communication barrier and exercises some relaxation of formal structure.

Employee Empowerment: Empowerment is the delegation of authority and resources, within preset limits to those who serve the customers. Employees are empowered when they have the training, knowledge, and experience necessary to identify and respond to the needs of all customers (Milakovich, 1995).

Empowerment is a process that provides an individual or group of employees the opportunity to:

- Define and document methods
- Learn about methods through training and development
- Improve and innovate best practice methods that make up systems
- Utilize latitude in their own judgement to make decisions within the context of best practice methods
- Trust superiors to react positively to the latitude taken by employees making decisions within the context of best practice methods
- Empowerment starts with leadership, but requires the commitment of all employees with all five items stated above (Gitlow, 1994)

Zero-defects Mentality: The term refers to the process where it starts with top management announcing the specific goal of achieving zero-defects, followed by a program for continuous reduction in defects and a plan to reduce rework drastically. Zero-defect concerns the consistency of the service. Customers who have experienced good service once, will come back hoping to receive the same good treatment (Horovitz & Jurgens-Panak, 1992).

Continuous Process Improvement: Continuous process improvement is a program aiming at reducing order-processing times, service development cycle times, service delivery cycle times as well as reducing paper work and to find wasted time and costs in all internal processes. The aim of continuous improvement is to continuously identify and eliminate those activities that add little or no value to the product or service being provided.

Performance Measurement: Performance measurement involves values that enable management effectively to plan, monitor, control and make decisions within an organization (Kinlaw, 1992).

Measurement of quality performance involves the use of charts and graphs and other statistical methods to monitor quality. In TQM, customer satisfaction and continuous improvement are shown and proved by measurement (Kinlaw, 1992).

1.3.3 Other related concepts

Service Industry : Service industry being that section of the economy which supplies the needs of the customers but produces no tangible goods (Stebbing, 1990). Service industry includes banking, insurance, building societies, travel, health care, public utilities, education, local government, hotels, restaurants and the retail trade.

Total Performance: Total Performance for service organizations used in this study refers to the following: the number of complaints received regarding the service of the organization; the rate of absenteeism; the rate of turn-over; the overall financial performance; the revenue growth and productivity.

Chapter 2

LITERATURE REVIEW

2.0 Introduction

The objective of this chapter is to highlight the relationship of TQM success/critical factors and the organization's Total Performance. The chapter begins with a review of the relevant research work pertaining to TQM and its factors, then to relate those factors with the Total Performance of the organizations.

Although a number of research works have been done on TQM, most of them had focussed either on the manufacturing sector or more towards public sector of the service industry such as health care and education. However, they can be used as a basis for this research work.

2.1 Critical Factors of TQM

The work and the philosophy of the five pioneering leaders of quality movement, W. Edwards Deming, Joseph M. Juran, Armand V. Feigenbaum, Kaoru Ishikawa and Philip B. Crosby are the basis of most of the quality study done until today. They are leaders and teachers who encourage company-wide integration of purpose (vision), recognize the importance of process variation on job performance, and possess a genuine respect for people.

Powell (1995) in his research work concluded that the complete TQM programs tend to share the following critical/success factors:

- **Commitment and involvement of top executives towards TQM philosophy and practices**

- **Adoption and communication of TQM**
- **Closer to Customer**
- **Closer to Supplier**
- **Benchmarking**
- **Increased training**
- **Open organization**
- **Employee empowerment**
- **Zero-defects mentality**
- **Continuous process improvement**
- **Performance measurement**

2.1.1 Related Studies On Critical Factors Of TQM

Several studies have been done on TQM success factors besides some articles written on the subject.

Thiagarajan and Zairi (1997) in a study carried out using Malcolm Baldrige National Quality Award (MBNQA) winners as respondents, reported that management commitment was rated as the most critical step in quality-improvement-process activity. He added that the management-related activities such as the need for a clear vision statement, and focusing the business processes on customer satisfaction, were listed among the top ten critical steps for a successful quality-improvement process. The overall conclusion of the study was that success or failure of a quality process hinges in a significant way on what happens regarding management commitment and other related top management activities.

Thiagarajan & Zairi, (1997) in their literature review stated that Crosby, one of the quality “gurus” places management commitment on top of the essentials of TQM implementation whilst Juran attributes the quality excellence of the Japanese companies to senior managers’ commitment to quality.

Boyle (1992) studied on the attitudes and commitment of top management officials on Total Quality Leadership of a naval organization. He found that if top management officials continue to support the total quality leadership efforts, then the quality management implementation would follow.

Easton (1993), an experienced Malcolm Baldrige National Quality Award (MBNQA) examiner, stated that all applicants for the MBNQA are committed to quality. Senior managers are actively involved in promoting the importance of quality and customer satisfaction and they devote a substantial part of their time to quality-related issues. Easton added that senior management also develops and communicates key company quality values which place emphasis on the importance of customer, process orientation, continuous improvement, teamwork, management-by-fact, mutual respect and dignity, and value of individual employees and their contributions. To support and promote the quality process of the organization, senior management developed and put in TQM council or division and departmental councils.

Pascoe (1996) in his study on TQM programs in American manufacturing firms found a strong correlation between the employee involvement component and the management commitment component. This suggests that it may not be possible to

obtain a high level of employee involvement in the TQM program without a corresponding high level of management commitment.

McDaniel (1997) in his study on the fundamental factors linked to the level of TQM implementation in U.S. capital city government found something interesting. The study formed several conclusions among which leadership commitment activity variable was found to be the single most important indicator of the level of TQM implementation maturity status in capital city governments.

Booth (1995), McNair & Leifried (1992) and Smith (1994) in their own study had addressed similar issue on benchmarking. They concluded that many organizations are using benchmarking as a tool to gain competitive edge. Those firms were also attracted to it because benchmarking stimulates and challenges the improvement process.

DeRose (1987) had written an article on TQM organizations. He stated that those organizations tend to manage and control their supply chain better by pursuing approaches such as supplier base reduction, limited sourcing arrangement, and closer integration and strategic alliance with suppliers.

Dyer & Ouchi (1993) had written another article on similar issue and stated that based on the Japanese Ministry of International Trade and Industry, the Japanese manufacturing industry owes its competitive advantage and strength to its supplier relationship structure. Japanese automakers have elaborated supplier-relationship programs. Toyota and Nissan have large supplier-assistance management consulting

groups with specialized expertise that work full-time and “ free of charge” with suppliers. They help suppliers to improve their production techniques and achieve total quality in products and service. Both Toyota and Nissan have at least one consultant for every four to six suppliers.

At Jaguar Cars, where appropriate, representatives of its suppliers are brought in as team members of task forces set up to deal with specific quality problems (Cullen & Hollingum, 1987).

Crosby (1989) concluded in his study that many Baldrige applicants have set up extensive quality programs with their suppliers. These included supplier quality system audits, supplier rating and qualification system, training, joint design teams, joint quality improvement teams, and supplier recognition schemes. In this way, they ensure that the quality movement spreads throughout their entire supplier chain. They offer partnership and extend as much assistance as possible to suppliers to help them manage quality effectively.

Florida Power & Light Company provides a two-week training course for its suppliers on how to implement a TQM initiative in their own company, while Wallace Company, has provided over 100 of its suppliers with training on TQM (Johnston & Daniel, 1991).

Newman (1988) in his research study found that as a vital preventive measure against non-conformance of incoming materials, TQM organizations also undertake supplier evaluation. As a key criterion, they select suppliers based on their capability

and commitment to product and service quality.

Crosby (1989) says that the relationship between supplier and buyer is one of the most important parts of the quality improvement process. He estimates that 50 per cent of an organization's quality non-conformances are due to defective in-coming materials (Smock, (1982).

In 1987, British Telecom embarked upon a company-wide program of training and education in the philosophy and techniques of TQM. Two years from its introduction, almost all the 30,000 managers had been introduced to the principles and practice of Quality Management and the strategy for implementation throughout the company. Despite its wide introduction, concerns from senior management were expressed about the lack of full integration of the Quality philosophy into the attitude and behaviour of some managers.

Wash (1990), in his study on British Telecom to investigate the proposition that a way of gaining better understanding and greater commitment to a Total Quality programme is to help those involved identify and develop the skills and behaviours that they will need to manage the changes effectively. Results show evidence that training managers in what they consider important leadership behaviours can create greater commitment to and understanding about TQM.

2.3 TQM and Firms' Total Performance

The ultimate purpose of quality management is to improve the overall performance, profitability, and efficiency of the business in what is becoming an increasingly competitive market place (Stebbing, 1990).

Most of the existing empirical studies conclude that TQM does increase firms' performance in many areas.

Pascoe (1996) conducted a study on the level of importance placed on four key TQM components (management commitment, customer orientation, employee involvement, and continuous improvement) used during the implementation of American manufacturing TQM programs. The objective of the study was also to assess the effectiveness of those key components in improving the performance of the firms. The study demonstrated that the four key TQM components were extremely used during the implementation of TQM programs. Pascoe also found that the components were positively correlated with the firms' performance.

In 1983 the Union of Japanese Scientist and Engineers published a study of Japanese companies that won the Deming Prize between 1961 and 1980. The study concluded that these firms had maintained above-average long-range performance, as measured by earnings, productivity, growth rates, liquidity, and worker safety.

In 1992, the Author D. Little Corporation produced an in-house report based on a survey of 500 large U.S. firms (Authur, 1992). Ninety-three percent of respondents claimed to have some form of TQM, with 35 percent reporting that their TQM efforts have had 'significant performance impacts' and 62 percent expecting significant impacts over the next three years. Although the methodology was not released publicly, it appears that the study did not include small firms.

Besides these studies, which were mainly designed to show that TQM can work (with a bit of consulting help), there exists a mutual fund - called the General Securities fund - that trades only in stocks of firms known to adhere to the TQM philosophy. This fund has matched the performance of the Standard & Poor's 500. The stocks themselves have slightly outperformed the S&P 500 over the same period.

Business Week (1993) on the other hand had examined the stock performance of ten Baldrige winners recently, reporting that if a person had invested equal amounts in each Baldrige winner when their awards were announced, the stocks would have appreciated a cumulative 89.2 percent since 1988, compared to 33.1 percent for the standard and Poor's 500 (Kinlaw,1992).

The study by Sloan (1996) on the effect of employee turn-over rates when TQM is implemented, uncovered relational patterns between organizations, which implement TQM, and organizations, which choose not to. Companies that commit the complete organization to the implementation of TQM for more than three years have realized the lowest worker turn-over rates. Companies which have only partially implemented TQM for less than three years have improved, however not to the same rates. Organizations, which have not implemented the approach, realize the highest worker turn over rate.

Opara (1996), investigates the effects of successful implementation of TQM philosophy in a corporation. The major objective of his research is to measure and explain the effect of TQM on productivity. The study measured and quantified the

effect of TQM on productivity by applying a 'Four Dimensions of Results' model. His model defined and quantified the following: (1) Products and Services delivered to the Users and Customers, (2) Financial Returns for Stockholders, (3) Job Satisfaction for Employees, and (4) Social Impact on the Community. He concluded that when TQM principles are successfully implemented, firms would realize better productivity and lower unit costs. Opara also found that customers would also respond to better quality, which will increase corporate market share, create more jobs and maintain a higher return on investment.

Chapter 3

THEORETICAL FRAMEWORK

3.0 Introduction

Powell (1995) has identified eleven TQM factors through his research study, which will be used to measure the level / extent of TQM factors practiced by service organizations in this study. The factors are as follows:

- Commitment and involvement of top executives towards TQM philosophy and practices
- Adoption and communication of TQM
- Closer to customer
- Supplier partnership
- Benchmarking
- Increased training
- Open organization
- Employee empowerment
- Zero-defects mentality
- Process improvement
- Performance measurement

The literature also suggests that those organizations that practice some degree of TQM factors realize a corresponding increase in their firms' Total Performance.

3.1 Variables

3.1.1 Independent Variables

The independent variables for this study are the TQM factors as listed below:

- Commitment and involvement of top executives towards TQM philosophy and practices
- Adoption and communication of TQM
- Customer involvement
- Supplier partnership
- Benchmarking
- Increased training
- Open organization
- Employee empowerment
- Zero-defects mentality
- Process improvement
- Performance measurement

These factors are expected to have positive relationship with the service firms' Total Performance.

3.1.2 Dependent Variables

The dependent variable in this study is the firms' Total Performance (i.e. the number of complaints received, the rate of absenteeism, the rate of turn-over, the overall financial performance, the revenue growth and the firms' productivity).

The model developed for this study is as shown in Figure 3.1

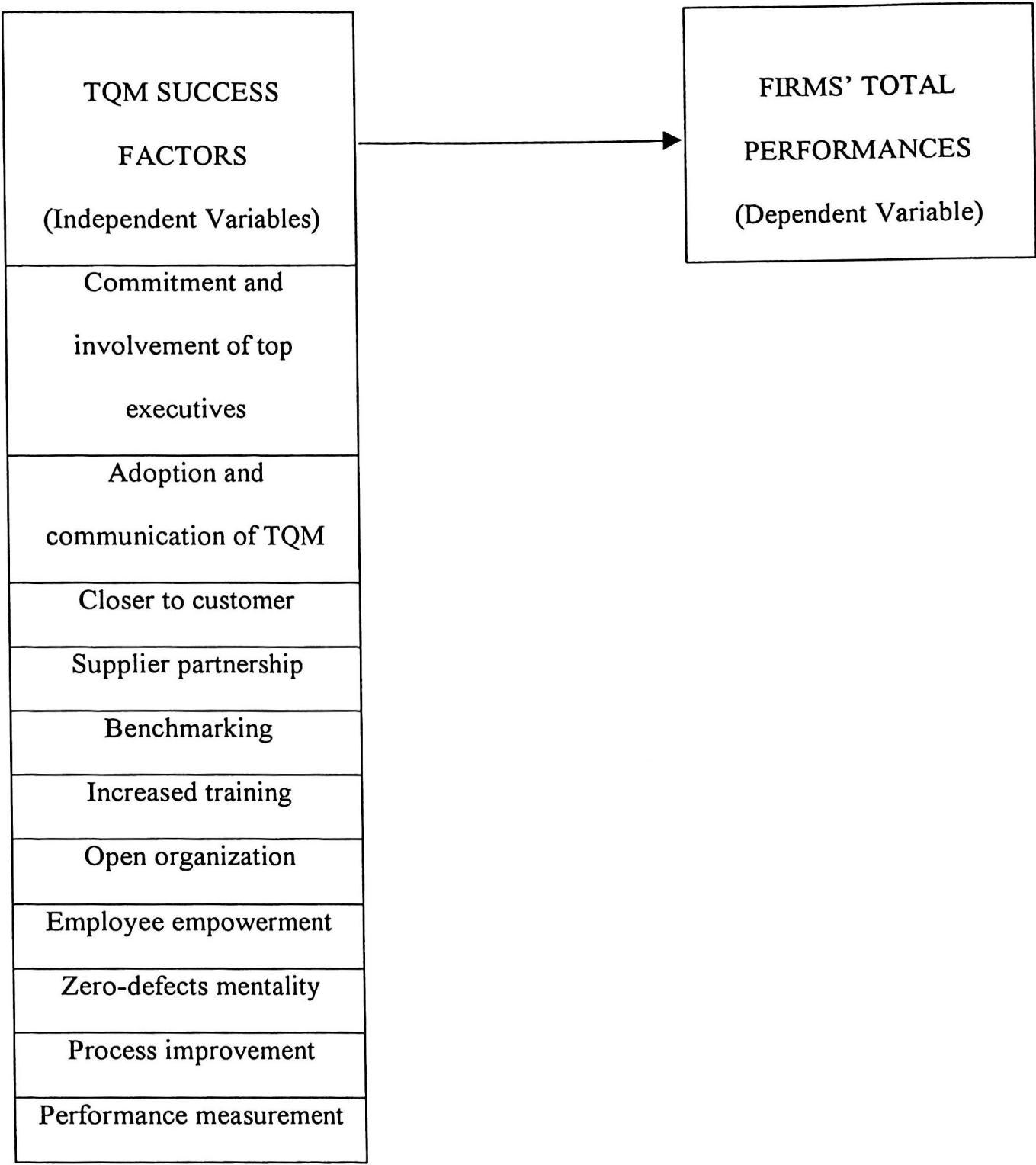


Figure 3.1: Theoretical Framework

However, based on the factor analysis carried out for all the eleven TQM factors above, a number of factors were found to be overlapping each other. A few factors can be deleted and while others can be combined to give new dimensions. Finally, only five new dimensions out of the eleven factors previously identified by Powell (after this shall also be called TQM factors) were found to be relevant to the study as follows:

- Commitment and involvement of top level management towards TQM philosophy and practices
- Adoption and communication of TQM
- Closer to customers and suppliers
- Development of human resource programs and
- Open organization.

Theoretical framework based on the five new TQM factors above are as shown in figure 3.2.