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DISSERTATION REPORT (2019-20)

TITLE: Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry

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Declaration by the Guide

This is to certify that the Ms. Vibhutiben Ramanbhai Prajapati, a student of (BBA – Aviation Operation), Roll No. 500064532 of UPES has successfully completed this dissertation on "Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry" under my supervision.

Further, I certify that the work is based on the investigation made, data collected and analyzed by her and it has not been submitted in any other University or Institution for award of any degree. In my opinion it is fully adequate, in scope and utility, as a dissertation towards partial fulfillment for the award of degree of BBA.

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Abbreviations

ED	Enforcement Directorate
GAO	General Accounting Office
KPIs	Key Performance Indicators
MBNQA	Malcolm Baldrige National Quality Award
QA	Quality Assurance
QC	Quality Control
QI	Quality Inspection
QM	Quality Management
QMS	Quality Management System
SPC	Statistical Process Control
TQM	Total Quality Management
UAE	United Arab Emirates
USA	United States of America
TQC	Total Quality Control
ISO	International Standard Organization
JUSE	Japanese Union of Scientist and Engineers
EFQM	European Foundation for Quality Management
SEM	Structural Equation Modeling
R&D	Research & Development
SPSS	Statistical Package for Social Sciences
SAS	Statistical Analysis Software
MANOVA	Multivariate Analysis of Variances

Abstract

Total Quality Management (TQM) is a people-focused management philosophy centered on the quality and continual improvement in the customer satisfaction at a lower cost. TQM includes different tools, systems, practices, methods which involves all employees in this philosophy. There have been several emerging themes in studying TQM in the last decade, firstly, whether TQM impact the company's performance; secondly, how the TQM affect performances and what are the best practices of TQM that lead to improvement of organizational performances; and, finally, the investigation of interaction between TQM implementation, customer service quality improvement, innovation performance and the cost effectiveness of TQM implementation.

The purpose of this thesis is to examine the relation between TQM implementation and some organizational performances: financial improvement, customer service quality conformance and innovativeness. Furthermore, this paper is devoted in identifying the best practices of TQM components that benefit company's organizational performances and lead to improved financial, customer service quality and innovation outcomes. Research framework is developed based on the conceptual model presented by Prajogo and Sohal (2001) and drawing on the experience of UAE based Airline Company. Questionnaires are developed and distributed among company employees through emails and survey responses are then analyzed to identify the relationship between elements of TQM and financial, customer service quality and innovation outcomes.

The findings of the study indicate that certain TQM practices have significant interaction with company's financial performance, customer service quality performance and innovativeness. The research outcomes prove that certain practices more correlated with the organizational performances than the others. Finally, the conceptual framework model is finalized based on the findings of the study and suggestions for future research is given at the end of this thesis.

1 Introduction

Presently, the aviation industry operations and supply chain is struggling to match with customer service demand because of the increase in air travel by customers, higher instability in the geopolitical, highly competitive economic conditions, and a growing manpower shortage at the background. These airline service industries associated risks are affecting the core performance criteria of aviation companies in the field of financial, customer service and innovation. Their strategic initiatives are already tested, their commercial position is threatened, their globalized travelling operations are stressed, and they need to comply with statutory requirements in the different markets in which they operate globally.

In order to enhance financial, customer service and innovation performance in aviation industry, it is impossible to disregard the importance of TQM. Long before the industrial revolution, quality was ensured through various training programs and continuous increase of quality control. Mass production that was implemented on most manufacturing companies required to rely on products inspection and quality assurance. Most significant growth in quality sciences was made after the World War II where the primary focus at that time was on production based tools such as Statistical Process Control (SPC) and Acceptance Sampling Procedures (Grant and Leavenworth, 1988). Later on, service quality gained importance in service industries such as airline companies. Quality programs are developed and implemented into airline companies which are systematic quality measurement approach known as the TQM (Evans and Lindsay, 2002).

TQM is a systematic quality management model that changed the meaning of quality management from mere product quality to a new organization-wide quality performance excellence. With the development of TQM, quality management entered into a new era (Besterfield et al., 2003). TQM not only improves the quality performance, but also shapes up the culture of the progressive organization. In addition, TQM is a developing concept which always keeps in line with business operations excellence. Like any other business processes and systems present in an organization, TQM is composed of various modules, primary and basic elements of it includes but not limited to: supplier relations, human resource management, leadership management, business process management, management information and analysis, continual improvement, strategic planning and customer focused system (Besterfield et al., 2003).

With the goal to evaluate the feasibility of quality management implementation in aviation industry, it is required to assess the outcome of organizational performance standards, namely performance measures. The main performances that determine the success of the very core of aviation sector today appears to be commercial success, customer service quality improvement and innovativeness. However, the relationship between TQM and principal performance indicators is still not very clear due to the scarcity of the study on this links and the complexity of the TQM elements (Prajogo and Sohal, 2001; Moballeghi and Moghaddam, 2011). Until today, there have been numerous researches that reported on the failure of the TQM implementation with regard to delivering bottom-line improvement. At the same time, the results of the proponents of TQM adoption revealed opposite findings and suggested that in order to improve company's performance, attention must be paid to the systematic approach in quality management. There is still no comprehensive study on whether TQM is positively affect financial, customer service quality and innovation performances as well as what are the practices of TQM that have direct relationship on their improvements.

Therefore, the identification of the interaction between financial, customer service quality and innovation performances and TQM implementation is a significant research area that needs to be examined. The importance of this research is one of the primary steps in identifying the best practices of TQM that have positive correlation with principal performance measurements. With a solid research in this field, it can become groundwork for the academics and practitioners in identifying the appropriate TQM framework for practical implementation in the companies that seek to improve certain organizational performance measurements.

Therefore, the study is focused to measure and study financial, customer service quality and innovation performance improvement through TQM implementation in airline industry.

1.1 Overview

The aviation industry has undergone significant changes in the past 15-20 years. Firstly, the terrorist events such as of September 11, 2001, led to reduction in flying by passenger, and the implementation of tight security processes have affected the costs of providing airline services and increased passenger travel duration. Additionally, recessions in 2001, 2007-2009 and 2015-2017 reduced demand for air travel, while the airport service charges and jet fuel price has been increased significantly. These factors resulted in billions of dollars losses to

airline industries worldwide, leading to bankruptcies, liquidations, mergers and potential acquisitions.

Recently, the Jet Airways founder Mr. Naresh Goyal is being questioned by the Enforcement Directorate (ED) of India and a large number of ex-employees still remain jobless after the airline shut down its operations in April, 2019 due to operational losses. It is one of the biggest startup failures in India.

In response to above issues, the industry has reduced flying capacity, replacing inefficient aircraft types and raising revenue through the new type of airline service fees. These changes allowed the industry to return to profitability in recent years. In addition, innovative newly developed airline carrier resulted in lower cost per customer for each segment.

However, the changes in the airline industry have not had a similar effect on all airline companies. Airline industries serving smaller communities have been significantly affected by the changes and resulted in reduced customer service levels, less airline competition and poorer service quality.

To overcome issues of airline economy, customer service quality and innovativeness, TQM has emerged as the solution as described briefly in literature review part of this dissertation.

1.1.1 Contemporary studies similar to the topic

The researcher in the due course of literature review has identified some previous works of published research which are stated below:

- Nagrajan Sumathi, "Total Quality Management in Airline Industry", International Journal of Latest Technology in Engineering, Management & Applied Science (IJLTEMAS) Volume VII, Issue IV, April 2018 | ISSN 2278-2540
- Moza Tahnoon Al Nahyan and Sherine Farouk Abdel All, "Key Enablers of Effective Implementation of TQM in Royal Jet Airways" , 2017, Article ID 3197585
- Saber Qasim and Aasim Zafar, "Information System Strategy for Total Quality Management (TQM) in Aviation Industry", International Journal of Computer Applications (0975 – 8887), Volume 135 – No.3, February 2016
- Charu Gupta and Dr. R. M. Belokar, "Applications of Total Quality Management in Indian Airline Industry", International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064, Impact Factor (2012): 3.358

- Pragalathan Tharmarajah, "Total Quality Management in Aviation Maintenance", School of Aerospace, Mechanical and Manufacturing Engineering, RMIT University
- Alok Kumar Singh, Sushil, "Modeling enablers of TQM to improve airline performance", International Journal of Productivity and Performance Management, Publication date: 8 March 2013, ISSN: 1741-0401

1.1.2 Research Process in Defining the Problem

The research gap was identified using literature review based on personal Airline industry experience, Airline industry performance indicators, gaps in existing practice and gaps in the existing literature as presented in below figure.

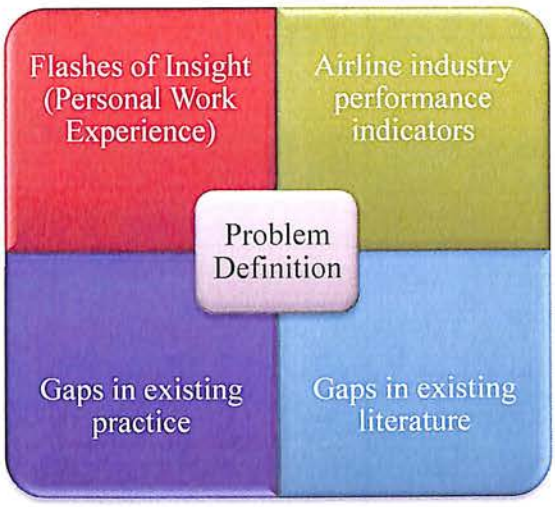

Figure 1: Research Process in Defining the problem

Flashes of insight: The study was mainly focused on Airline business due to the researcher's experience in the field of Airline, and in the quest of searching literature to identify theoretical aspects of Total Quality Management and Airline Industry performance indicators.

Airline Industry performance indicators: TQM effect on airline economy, customer service quality and innovativeness.

Gaps in existing practice: Even though, there have been many internal and external business studies in Airline industry on TQM and its performance indicators, the researcher failed to identify any such study or practice which aimed at analyzing Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry.

Gaps in the existing literature: During the literature review, evident gaps were observed in analyzing Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry. The researcher came across a number of studies in Airline Industry in relation to TQM. However, no study was found of Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry. This study attempts to fulfill the gaps in this business case study.

Overall, following research process steps need to be followed for any business case study.

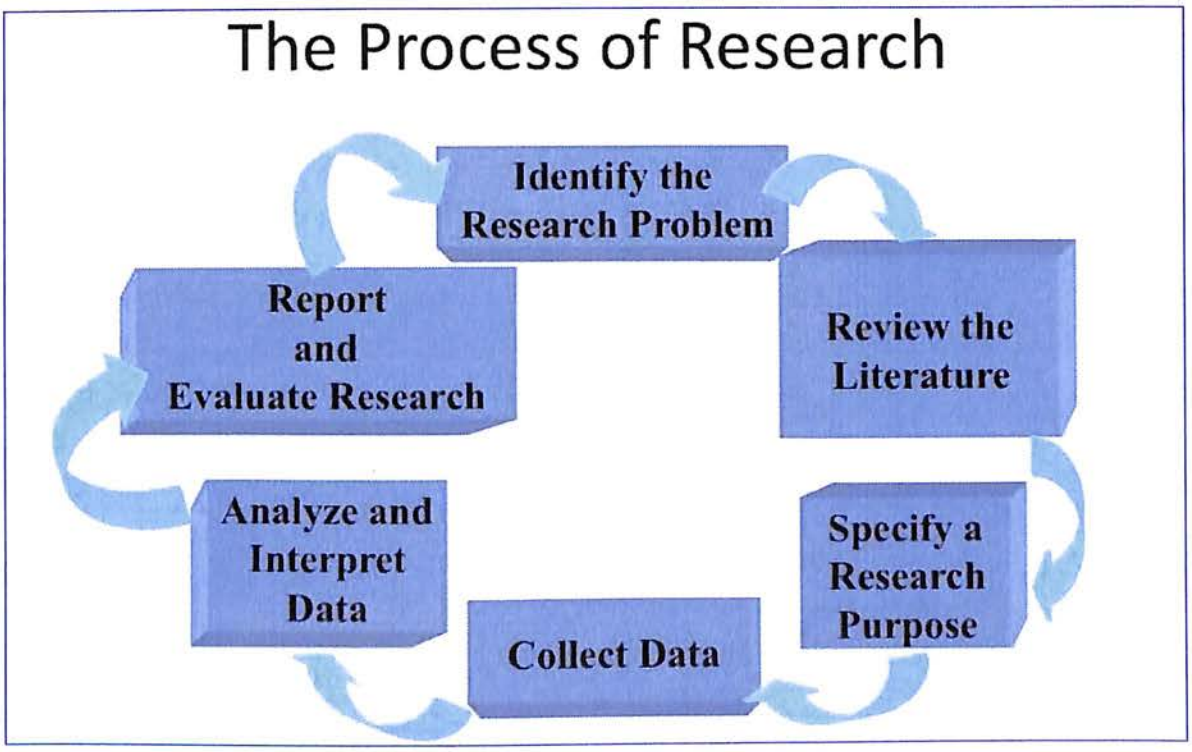

Figure 2: The process of Research

1.1.3 Limitations of the study

Following are limitations of this business case study:

- This study is limited only to understand impact of Total Quality Management on Airline companies.
- This study is limited to Financial, Customer Service Quality and Innovativeness improvement by TQM in Airline Industry. This study cannot be generalized other than these Airline business areas.

- This study cannot be extended to other type of industries.

1.1.4 Conclusion of the study

It was concluded and recommended in this business case after due diligence and research confirms the correlation between six TQM practices and financial, customer service quality and innovation performances. TQM has the major impact on customer service quality performance but also has a positive relationship with organization's financial benefits and innovation.

1.2 Research Background

1.2.1 Evolution of TQM

There are four steps in TQM development. The first stage occurred in the early years of the last century and named Quality Inspection (QI), second stage was Quality Control (QC) which was followed by Quality Assurance (QA) stage. Finally, quality evolution emerged to TQM. Table 1 below shows the main features of the TQM evolution.

TQM evolution stages	Characteristics
Quality Inspection (1910)	Salvage
	Sorting
	Corrective action
	Identify sources of non-conformance
Quality Control (1924)	Quality Manual
	Performance Data
	Self inspection
	Product testing
	Quality planning
	Use of statistics

	Paperwork control
Quality Assurance (1950)	Third party approvals
	System audits
	Quality planning
	Quality manuals
	Quality cost
	Process control
	Failure mode and effect analysis
	Non-production operation
Total Quality Management – TQM (1980)	Focused vision
	Continuous improvement
	Internal customer
	Performance measure
	Prevention
	Company wide application
	Interdepartmental barriers
	Management leadership

Table 1: Main features of the different stages in TQM development (Source: Ciampa, 1992)

1.2.1.1 Quality Inspection

With the origin of inspection in the early 1920s the quality thinking conception has been introduced in the main industrial areas (Garvin, 1988). Later on, SPC was developed in the US industry and quality thinking was standardized. In the 1950s, Quality Management (QM)

was added with the development tools in order to keep certain level of manufacturing. These changes have been made to satisfy customer requirements and to reduce the number of inspection made on industrial goods and services. In addition, these development tools aimed to increase the level of the responsibility for product as well as service quality among all employees (Garvin, 1988; Juran, 1988).

1.2.1.2 Quality Control

This stage was developed when inspection ensured that the products with bad quality are uncovered and excluded from acceptable products. Defective products were then reworked, scrapped or discounted. Visual inspection was performed to sort the conformance to quality products from non-conformance products where standard quality measures include the assessment of the weight, quality and dimensions of the product (Ross, 1994). Written specification of measurement and standardization was introduced during this stage with the establishment of scientific management by Frederick W. Taylor (Dahlagaard et al., 1998).

1.2.1.3 Quality Assurance

The third phase of quality thinking was a highlight on prevention of the product defects. The actions toward detection of the poor quality aimed to ensure that a product or service is conformant with customer requirements. QC measures were designed to perform continuous audit of the systems, effect analysis and failure mode, design of experiment and initiatives as defense leverage to eliminate failures in production. Additional activities that were created to progress from QC to QA involves quality manual, quality cost, auditing of quality system and development of process control (Dale et al., 1994).

1.2.1.4 Total Quality Management

Finally, following the criticism from Hewlett-Packard of USA on poor quality chip manufacturers, Deming (1986) introduced the TQM in the early 1980s. The idea behind TQM was the introduction of the Quality Management System (QMS) principles and concepts in each dimension of the work activities. Implementation of these principles allows company to introduce the good product or service at the lowest price. The aim of the TQM implementation is the on-going quality improvement (Tang and Bauer, 1995) and gaining customer loyalty by offering value.

1.2.2 Key Performance Indicators (KPIs)

Assessment of the organizational performances of the company is a tool that is used quite often in organizational studies when evaluating the impact of TQM on a company.

Performances define the company's ability to operate and manage processes in compliance with customer satisfaction (Wilford, 2007). An organization seeks for a specific framework that will enhance its performance. Developing measurable performance indicators is the main focus of the performance management track program. However, performance management is a multifaceted constructs and remains as the most difficult concept to define.

Numerous researchers attempted to study the interaction between TQM and organizational performances. The first endeavor was by the General Accounting Office study (GAO, 1991) that tried to identify the impact of TQM practices on organizational performances. This study examined Malcolm Baldrige National Quality Award (MBNQA) recipients and concluded that TQM practices significantly increase operating performances of the company. Other studies have similar results as GAO (Shetty, 1993; Bergquist and Ramsing, 1999), however, Bergquist and Ramsing (1999) asserts that it is not possible to contend that TQM undoubtedly leads to greater operating performances.

To identify the outcomes of implementing TQM in the organizations, it has been decided to qualify the connection between TQM and financial, customer service quality and innovation performances. These performance measures are of particular interest because they are the most influential on the two fundamentals of TQM - on-going customer satisfaction and company's continuous improvement. In addition, there were only a few attempts to identify the best practices of TQM that positively impacts these outcomes. Therefore, there is a need to bridge the research gap and determine the framework of TQM that a company needs to consider if it seeks to improve financial, customer service quality and innovation performances.

1.2.2.1 Financial Performance

Financial performance of the company relates to the organization's nature and action that leads to accomplishment of profit making mission (Sink, 1991) and implies a financial ability of a firm to increase productivity. According to Park (2006), financial ability of the company can be evaluated in different variables and conditions. Most of the performance management indicators attempt to estimate such financial variables of the company like return on investment, cost and profit. The assessment of this mode of performance system highlights more on the previous financial year's result of the company's business activity and exploits this method to compare and contrast on the efficiency of the strategy and business programs that have been performed in the current year (Holmberg, 2000). However, over time current

year business strategy diminish its predicting performance power, thus indicates less causes and more impacts and results (Eccles and Puburn, 1992). Although, there are several ways of evaluating the company's financial ability and status, the tool to analyze organization's financial power is the analysis of ratios for a certain period. The set of ratios analyzed in the study varied from one research to another and identified by the research aim. The group of measures that was recommended by Shahin (2011) for the general purpose of this study is as follows:

- Company's profitability ratio for an examined period
- Organization's risk ratio that confronts over a survey length
- Firm's efficiency ratio
- Organization's growth ratio observed during examined period

Additional set of financial ratios that can determine the financial performance of the company is liquidity ratios, activity ratios, debts ratios and profitability ratios. Some studies have referred to these measurement indicators during the study on identifying the interaction between TQM and financial performances. Companies that aimed on increasing the product quality and the process quality tend to have cost reduction and higher rate of revenue. Therefore, organizational financial performance is a result of TQM adoption and implementation of quality initiatives that subsequently lead to the increase of sales level, revenue, return on investment, cost of performance and market share gain (Fotopoulus and Posmas, 2009).

1.2.2.2 Quality Performance

Quality has been widely recognized in the business format and in the literature as the powerful business tactic to improve the company's core competences and effectiveness, therefore more and more companies today strengthen and emphasize on product as well as service quality. In the competitive setting and market quality, it is considered as the key weapon to define the company's performance. Increased productivity and waste minimization is also the result of quality improvement. Moreover, higher quality of the products leads to the increase of market share and promotes company's reputation that in turn allows company to charge premium prices, thus boost profitability (Garvin, 1984). Many experts acknowledge the fact that the quality performance of product and services is the critical element of the competitiveness of the organization in the global market. In fact, Kondo (1999) agrees with this statement and notes that using creativity in the quality strategy reduces the cost of the

production and increases the level of productivity. Hence, company will be able to gain economy of scale. Adoption of the suitable quality management system is essential for a vitality of manufacturing as well as service company operation especially in the global trade setting where the portion of manufactured goods and services tends to grow (Sohal and Gordon, 2001).

Garvin (1987) suggests that quality is also a tool used by the companies to satisfy and please the customers by avoiding the possible problems caused by the product or service defects. Thus, organizations are responsible for identifying the advantages of the product or service and further developing quality strategy with one or more dimensions. However, Noori (1990) asserts that quality improvement does not lead to competitiveness of the company. He argues that quality has four dimensions: cost, competitive edge, viability of organization and reputation.

TQM implementation is usually perceived as the item of expense. Confusion usually appears with the relation to the use of terms describing different but similar activities in the industry. Rise of cost usually happens when company decide to enhance the grade of the product or service, thus the product or service cost will be higher as a result of using more expensive raw materials, premium service package or improving technological process. Whereas quality enhancement means implementing quality system that leads to a reduced number of defects and failures, thus improving cost of product at the expense of producing greater number of units with the same amount of money.

Talib et al. (2013) suggests a general set of quality performance measures commonly used in the study of different authors which are:

- Product or service quality
- Rate of defects or complaints
- Rate of reworked products or services
- Rate of delivery delays
- Employee's quality awareness
- Customer satisfaction
- Company's image

Kumar et al. (2009) emphasizes on the significance of the quality performance for the organization's overall performance. Different managerial approaches are intended to improve

quality in the organization. However, the most recommended and proposed method of continuous improvement philosophy is the concept of TQM.

1.2.2.3 Innovation Performance

Innovation today is considered as the most valuable attribute of the company and attracts more focus than ever. Organizations implement innovative strategy for many reasons. The key factors behind it is that innovation can generate an increase in sales and lead to competitive advantage as the consequence of improvement and creating new-brand products or services (Alsaaty and Harris, 2009). McAdam and Armstrong (2001) state several description of innovation and assert that innovativeness can lead to increased level of creativity and change in the company. Leading companies that seek for a first mover advantage benefited not only from being followers but also from being initiators in change management. Therefore, innovativeness can be described as the process that includes both response to change and initiation of change. The link between innovativeness and innovation performance is the ability to implement the ideas fast and effectively, and to create the system of values.

There are many activities that can be regarded as innovative; therefore it becomes too complicated to measure the innovation performance. A few common attributes that can help to measure innovativeness are (McAdam and Armstrong, 2001):

- Number of the invented products or services and implemented processes
- Total sales produced from the introducing new product, service or processes
- Amount of the patents, trademarks, software and designs

Innovation performance is the two part process of creating new ideas and implementing them carefully and receiving valuable outcomes from innovation implementation (Crossan and Apaydin, 2010). The process when innovative idea is created and transformed into a valuable result is called innovativeness. Business process, service, or product in this case is the consequences. Three significant indicators of the environment in which innovation can be flourished is the availability of the creative and supportive employees, the presence of the resources that favor the idea generation and the ability to choose the most profitable idea (Ortt and van der Duin, 2008; Skarzynski and Gibson, 2008).

In addition, innovativeness results in the value that is responded to customer's current or latent need. Most scholars argued that innovation evolves in the environment that encourages

invention, but only a few agreed that TQM is one of the settings that promote creativeness and innovativeness.

1.3 Research Objectives

There has been little recognition of TQM and its impact on airline industry performances and just a few studies investigated the connection between elements of TQM and its relationship with financial, customer service quality and innovation performances. Therefore, the main objectives of this research are to examine the interaction between TQM and main organizational performances and identify the practices of TQM that improve financial, customer service quality and innovation outcomes.

As a result, this study aims to achieve the following research objectives:

- To study the interaction between TQM and financial, customer service quality and innovation performances
- To identify the practices of TQM that minimizes the cost, improves customer satisfaction and promotes innovativeness in the airline industry
- To propose the conceptual framework that reflect the impact of TQM elements and financial, customer service quality and innovation outcomes
- To present the findings and conclusions of the study

1.4 Research Questions

For the purpose to meet the objective of this study, following research questions were identified:

- What is the interaction between TQM elements and financial, customer service quality and innovation performances?
- What are the practices of TQM that have direct impact on these performances?
- What kind of conceptual research model should be developed that can be adapted by organizations that seek for improving cost, quality and innovation?

1.5 Dissertation report structure

This dissertation report includes 7 chapters along with cover page, acknowledgement, declaration by the guide, table of contents, list of tables and illustrations, list of figures, abbreviations, abstract, bibliography and appendix.

Following is a schematic overview of the chapters followed in this dissertation report.

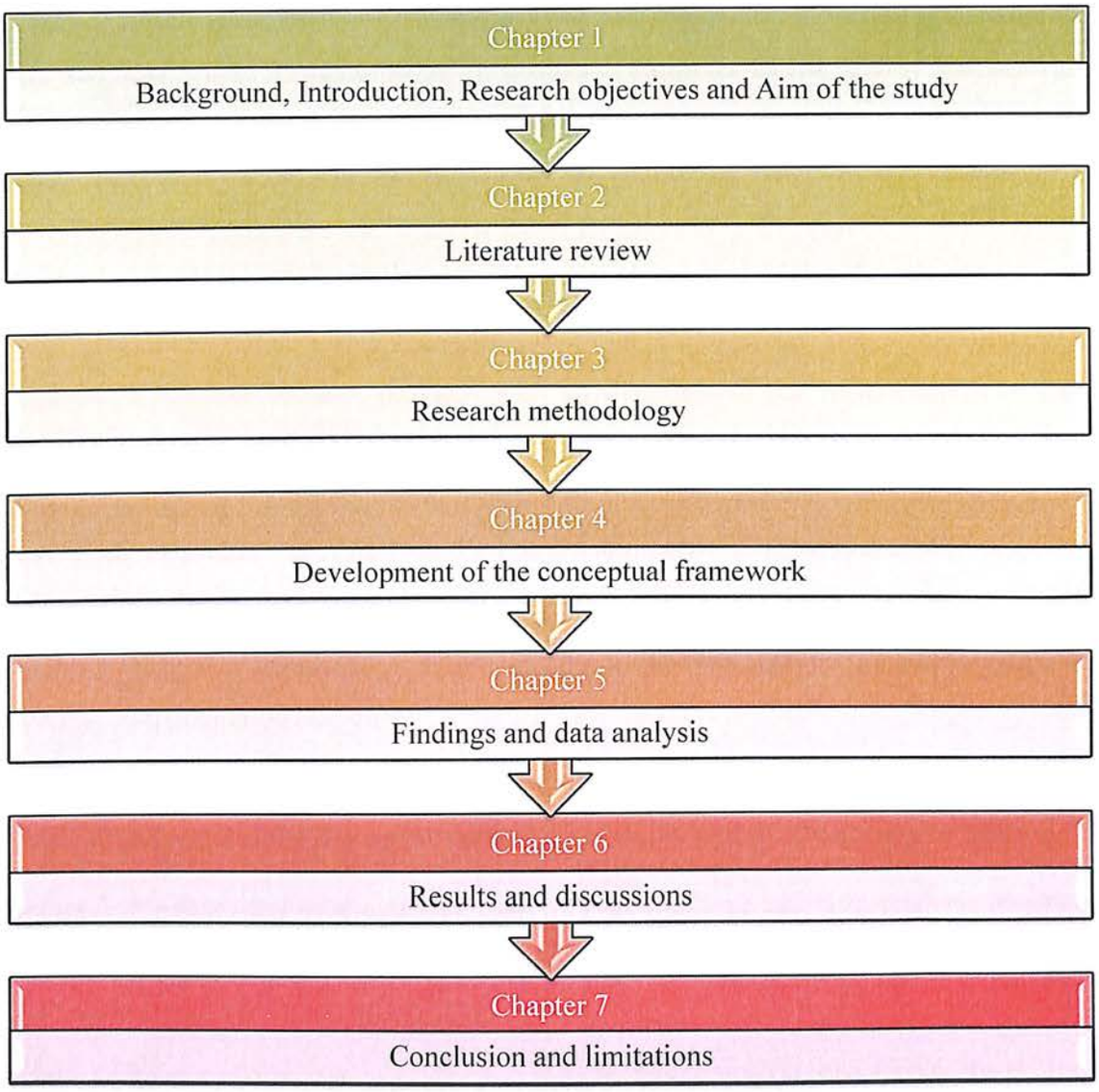

Figure 3: Schematic view of the chapters in Dissertation Report

This thesis includes 7 chapters and can be further segregated into few parts. The first part, formed by Chapter 1 and Chapter 2, provides an introduction and overview of this research. The context and necessity of this research are explained in this part. Part II is the main body of this thesis. This part is devoted to the identifying of the interaction between TQM and financial, customer service quality and innovation performances. It comprises of Chapter 3, and 4. Research Methodology will be described in the Chapter 3 that will be followed by Conceptual framework development in Chapter 4. Part III introduces the Findings and Data analysis part and provides the summarization of this research. The contribution, limitations and future research space are also provided in the last part.

Chapter 1, *Introduction*, explains the backgrounds and objectives of this research. Since three most vital dimensions of organizations are financial, customer service quality and innovation performances, efforts should be put on the facilitation of them. In this part, the role of TQM is discussed. Due to the lack of the studies on identifying the best TQM elements and improvements of most important organizational performances, the objective of this research is defined to explore on this relationship. The general structure of this thesis is introduced in the final section of this chapter.

Chapter 2, *Literature Review*, provides with an overview of the related topics of TQM, financial, customer service quality and innovation outcomes. The literature review begins with an overview of the development, principles, framework, practices, and technical tools of TQM. It also includes the review on the relationship between TQM and cost improvement, quality enhancement and innovativeness.

Chapter 3, *Research Methodology*, introduces the Research Methodology and provides with the Project Methodology overview.

Chapter 4, *Development of the conceptual framework*, develops the Conceptual Framework and introduces the main arguments precedent to the development of the research model.

Chapter 5, *Findings and data analysis*, examines the Findings and Data analysis results and presents the results of the research performed in the oil and gas company. The answers of some objective questions are also analyzed.

Chapter 6, *Results and discussions*, provides Results and Discussions on the results achieved. A discussion on the best practices of TQM is provided. Finally, the practical meaning of this research is reviewed.

Chapter 7, *Conclusion and limitations*, provides Results and Discussions on the results achieved. A discussion on the best practices of TQM is provided. Finally, the practical meaning of this research is reviewed.

1.6 Expected outcome of the study

This research is mainly based on the results of the survey performed in airline companies in UAE. The expected outcome of the study is to confirm the correlation between TQM practices and financial, customer service quality and innovation performances as well as TQM impact on them.

It is expected that the survey results will confirm different practices show different relationship with organizational performances. The studies will not only confirm TQM practices but also the financial, innovation and customer service quality performances in organizations are correlated with each other. The study also conclude that companies that achieve good performance in customer service quality also tend to achieve good performance in innovation that leads to the increase of market share and profitability.

Due to the globalization, today's market becomes more and more rigorous and turbulent. In such an environment, financial stability, customer service quality and innovation are critical for business success. Organizations need to be ambidextrous in order to gain competitive advantages in Market. The finding of this research will help organizations in fulfilling this task. The original aim of TQM implementation is the customer service quality improvement. However, the research is expected to prove that the innovativeness and financial performance of the company also enhanced.

2 Literature Review

2.1 Introduction

At the commencement of any management philosophy or system initiative, any airline business should have clear ideas and knowledge about the system it is going to implement. In order to understand the source and the various features of TQM, it is important to introduce the main authors of the quality management philosophy. In particular, well known contributors are Deming, Juran, Fiegenbaum and Crosby who have created the fundamentals of the main elements and control mechanisms of quality practice that underlie the contemporary TQM system (Dale et al., 1994).

With the use of measurements, statistics and other problem solving tools, quality management initially concentrated on limiting the number of errors and failures in products and services. With the lapse of time, airline companies understood that sustained quality enhancements could not be met without emphasize on the daily quality management practices. Operating managers realized that the genuine contributors of quality are measurement performances, data analysis, response to customer demands, promoting the customer's loyalty, employee-employer relationship, product and services design, on-time delivery and leadership organizations (Evans and Lindsay, 2008).

Furthermore, TQM has emerged into important part of the large scale corporate management system (Yusof and Aspinwall, 2000; Melan, 1998). The entire management paradigm "Total Quality Management" is where the quality now belongs to. It rose from being the element of a product or service to a system that involves all organizational activities.

The literature review presents the concept of TQM that includes the main historical development stages, definitions and philosophy. It also introduces the main principles of TQM and describes the three famous quality award models. Since this thesis is more concerned about the impacts of TQM on different outcomes in airline industry, this literature review also look at the benefits from TQM implementation. It is also important to introduce the technical tools of TQM and discuss the main practices that underlie the concept. Finally, the literature review is given an overview of the interdependency between TQM and financial, customer service quality and innovation performance improvement in airline industry.

2.2 Total Quality Management

A core definition of total quality management (TQM) describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work.

Total quality management (TQM) is the continual process of detecting and reducing or eliminating errors in manufacturing, streamlining supply chain management, improving the customer experience, and ensuring that employees are up to speed with training. Total quality management aims to hold all parties involved in the production process accountable for the overall quality of the final product or service.

2.2.1 The development of TQM

TQM comprises of a number of ideas and emphasizes on the system thinking. It also regards quality as a task of all functions and of all members and a process should be cared from the beginning to the end (Evans and Lindsay, 2008). TQM changes the meaning of quality management from product quality to a new organization-wide performance excellence.

TQM, as the collection of management concepts and management techniques, explained in the three levels: principle level, practice level and technique level (Evans and Lindsay, 2008). The principles are those should be always borne in mind when performing any organizational practice. The practices are what organizations should do in order to achieve excellent business performance. They are directions for organizations to achieve TQM. The techniques of TQM refer to the technical tools, which are used to ensure quality performance.

The history of Total Quality Management (TQM) began initially as a term coined by the Naval Air Systems Command to describe its Japanese-style management approach to quality improvement. An umbrella methodology for continually improving the quality of all processes, it draws on knowledge of the principles and practices of:

- The behavioral sciences
- The analysis of quantitative and qualitative information
- Economics theories
- Process analysis

Below figure depicts historical development of TQM from 1920s till today along with key concepts developed in the field of TQM.

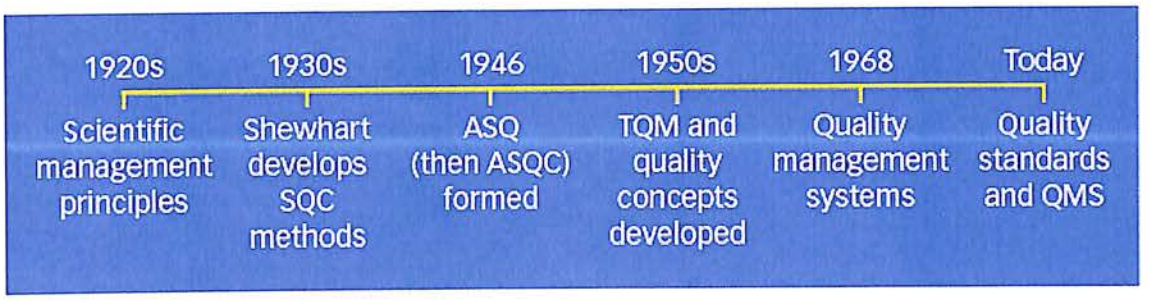

Figure 4: Historical development of TQM

Following table provides details of historical development of TQM during 1920s till today.

Year	Milestone
1920s	Some of the first seeds of quality management were planted as the principles of scientific management swept through U.S. industry. Businesses clearly separated the processes of planning and carrying out the plan, and union opposition arose as workers were deprived of a voice in the conditions and functions of their work. The Hawthorne experiments in the late 1920s showed how worker productivity could be impacted by participation.
1930s	Walter Shewhart developed the methods for statistical analysis and control of quality.
1950s	W. Edwards Deming taught methods for statistical analysis and control of quality to Japanese engineers and executives. This can be considered the origin of TQM. Joseph M. Juran taught the concepts of controlling quality and managerial breakthrough. Armand V. Feigenbaum's book *Total Quality Control,* a forerunner for the present understanding of TQM, was published. Philip B. Crosby's promotion of zero defects paved the way for quality improvement in many companies.
1968	The Japanese named their approach to total quality "companywide quality

	control." It is around this time that the term quality management system arises. Kaoru Ishikawa's synthesis of the philosophy contributed to Japan's ascendancy as a quality leader.
Today	TQM is the name for the philosophy of a broad and systemic approach to managing organizational quality. Quality standards such as the ISO 9000 series and quality award programs such as the Deming Prize and the Malcolm Baldrige National Quality Award specify principles and processes that comprise TQM. TQM as a term to describe an organization's quality policy and procedure has fallen out of favor as international standards for quality management have been developed. Please see our series of pages on quality management systems for more information.

Table 2: Historical milestones in TQM development

2.2.2 TQM Philosophy

The TQM philosophy emphasizes on the continuous improvement through organizational approach that involves internal and external stakeholders and stresses on the systematic and integrated systems and processes of the company. According to Dahlgaard et al. (1998) internal and external quality enhancement underlies the concept of continuous improvement that is indicated in Figure 5. Internal improvement in this case can be achieved through lowering the number of the failures or customer complaints and reducing the cost, whereas external improvement refers to the design of the product or service and competitiveness of the organization.

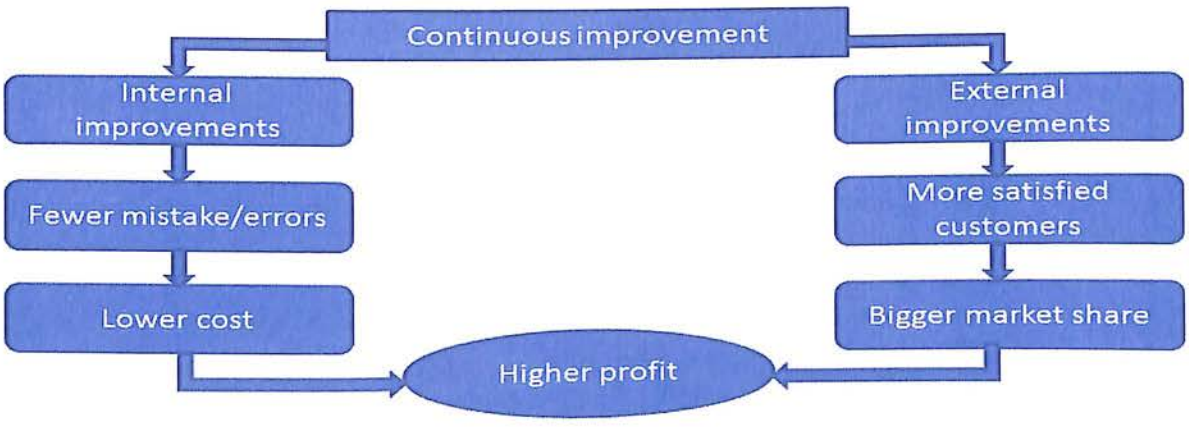

Figure 5: Concept of continuous improvement in TQM (Source: Ciampa, 1992)

The TQM philosophy initiators and founders were W. Edwards Deming, Joseph M. Juran, Armand V. Fiegenbaum, and Philip Crosby, who contributed to the TQM by developing theories and practical techniques for improving quality of products and services.

Deming (1986) introduced the management tools based on statistical quality control and believed that management plays an important role in quality management system. His contribution also includes the product quality system as the result of the process improvement system (Saunders, 1995). Deming introduced his famous Deming Chain reaction – the concept which is explained in Figure 6.

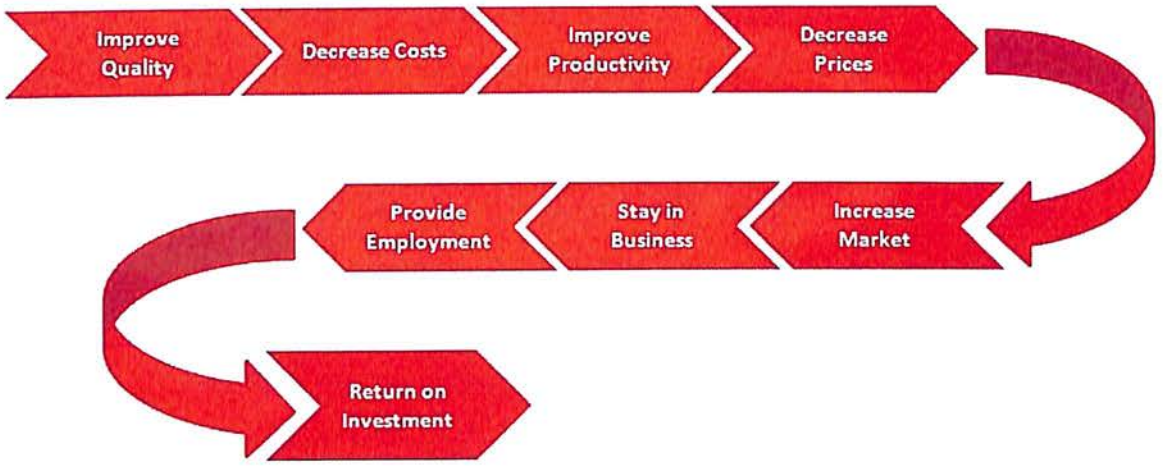

Figure 6: Deming chain reaction (Source: Saunders, 1995)

Similarly, Juran (1993) significantly contributed to the development of the quality management practices in US. He appraised the necessity to focus on the following managerial dimensions: planning, organising and controlling and suggested that management involvement is required in order to achieve quality control. Eventually, his study shifted into emphasis on customer focus (Lankard, 1992).

Fiegenbaum introduced the Total Quality Control (TQC) system that underlies the concepts of TQM. He believed that quality management system is the strategy that involves everyone and he suggested that quality cost can be used as one of the measures of the successful implementation. Fiegenbaum's view can be presented in three stages: Quality Leadership, Modern Quality Technology and Organisational Commitment (Evans and Lindsay, 2008). **Crosby** (1979) similar to Deming introduced fourteen statements of the quality practice. He emphasized on the prevention techniques and believed that quality conformance can be developed by workers and managers. He stressed on the low cost of the prevention process compared to higher cost of the defect detection and correction (Lankard, 1992).

Following table 3 describes main quality management gurus and their contributions:

Quality Management Gurus	Key contributions
Philip Crosby	**The Four Absolutes of Quality Management:** • Quality is conformance to requirements • Quality prevention is preferable to quality inspection • Zero defects is the quality performance standard • Quality is measured in monetary terms – the price of non-conformance **14 Steps to Quality Improvement:** • Management is committed to quality – and this is clear to all • Create quality improvement teams – with (senior) representatives from all departments. • Measure processes to determine current and potential quality issues. • Calculate the cost of (poor) quality • Raise quality awareness of all employees • Take action to correct quality issues • Monitor progress of quality improvement – establish a zero defects committee. • Train employees in quality improvement • Hold "zero defects" days • Encourage employees to create their own quality improvement goals • Encourage employee communication with management about obstacles to quality • Recognize participants' effort • Create quality councils • Do it all over again – quality improvement does not end
Dr. Edwards Deming	**Deming's Fourteen Obligations of Top Management:** • Create constancy of purpose for improvement of product and service.

	Allocate resources to provide for long range needs rather than only short term profitability • Adopt the new philosophy. We can no longer live with commonly accepted levels of delays, mistakes, defective materials, and defective workmanship. • Cease dependency on mass inspection to achieve quality. Quality is achieved by building quality into the product in the first place. • End the practice of awarding business on the basis of price tag alone. The aim is to minimize total cost, not merely initial cost. Establish long term relationship with suppliers to develop loyalty and trust. • Improve constantly and forever every process for planning, production, and service. It is management's job to work continually on improving total system. • Institute training on the job for all, including management, to make better use of every employee. New skills are required to keep up with changes in products and processes. • Adopt and institute leadership aimed at helping people do a better job. Management must ensure that immediate action taken on issues that are detrimental to quality. • Drive out fear so that everybody may work effectively and more productively for the company. • Break down barriers between departments and staff areas. Everyone must work together to tackle problems that may be encountered with products or service. • Eliminate slogans and exhortations for the work force as they create adversarial relationships. Also, bulk of the causes of low quality & productivity belongs to the system and lie beyond the power of the work force. • Eliminate arbitrary numerical targets for the workforce and management. Substitute aids and helpful leadership in order to achieve continual improvement. • Remove barriers that rob people of pride of workmanship. This includes the annual appraisal of performance and Management by Objective.

	• Encourage education. Institute a vigorous program of education and self-improvement for everyone • Clearly define top management's permanent commitment to ever improving quality and productivity. Put everybody in the company to work to accomplish the transformation. Support is not enough, action is required.
Dr. Armand Feigenbaum	Developed Total Quality Control (TQC) philosophy Quote: "Quality is everybody's job, but because it is everybody's job, it can become nobody's job without the proper leadership and organization." **Steps to quality:** • Quality leadership • Modern quality technology • Organizational commitment
Dr. Kaoru Ishikawa	• Known as father of Japanese quality control effort • Established concept of Company Wide Quality Control (CWQC) – participation from the top to the bottom of an organization and from the start to the finish of the product life cycle • Started Quality Circles – bottom up approach – members from within the department and solve problems on a continuous basis • The fishbone diagram is also called Ishikawa diagram in his honor • Introduced concept that the next process is your customer
Dr. Joseph Juran	**Juran's Quality Trilogy (compared to financial management):** • Quality planning (financial budgeting) – create process that will enable one to meet the desired goals • Quality control (cost control) – monitor and adjust the process • Quality improvement (profit improvement) – move the process to a better and improved state of control through projects **Key points of Juran's approach to quality improvement:** • Create awareness of the need for quality improvement

	• Make quality improvement everyone's job • Create infrastructure for quality improvement • Train the organization in quality improvement techniques • Review progress towards quality improvement regularly • Recognize winning teams • Institutionalize quality improvement by including quality • Concentration on both external and internal customers
Dr. Walter Shew hart	• Shewhart's control charts are widely used to monitor processes. Problems are framed in terms of special cause (assignable cause) and common cause (chance-cause). • Referred to as the "Father of Statistical Quality Control" **The Shewhart Cycle – PDCA Problem Solving Process:** • Plan – what changes are desirable? What data is needed? • Do – carry out the change or test decided upon • Check – observe the effects of the change or the test • Act – what we learned from the change should lead to improvement or activity
Dr. Genichi Taguchi	• The lack of quality should be measured as function of deviation from the nominal value of the quality characteristic. Thus, quality is best achieved by minimizing the deviation from target (minimizing variation). • Quality should be designed into the product and not inspected into it. The product should be so designed that it is immune to causes of variation. **Taguchi recommends a three-stage design process:** **System Design (Stage 1):** • Development of a basic functional prototype design • Determination of materials, parts and assembly system • Determination of the manufacturing process involved **Parameter Design (Stage 2):**

	• Selecting the nominal of the system by running statistically planned experiments (DFSS/DOE) **Tolerance Design (Stage 3):** • Deals with tightening tolerances and upgrading materials

Table 3: Quality management gurus and their contributions

2.2.3 Principles of TQM

TQM is like a big umbrella which nearly relates to every aspect of organizational management and requests many changes in the traditional management style. It is widely acknowledged that TQM is based on the three fundamental principles (Figure 7) (Evans and Lindsay, 2002).

Figure 7: TQM principles (Source: Evans and Lindsay, 2002; Saunders, 1995)

- **Focus on customers and stakeholders**

Nowadays, satisfying customers has been viewed as the most important strategy of the company. To satisfy customer requirements, companies need to fully understand the customer. Customer relationship management methods involve customer survey, focused group, complains analysis, etc. The objective is to get better understanding of customers (Evans and Lindsay, 2002). Companies need to know what is important for customers and put their efforts to not merely rely on meeting specifications, reducing defects, errors and costs, but also on satisfying the customers. Demands of customers should be considered from

design and throughout the entire product development process. With the development of the TQM knowledge, customer focus is extended to stakeholder focus. Stakeholders include government, suppliers, communities, and all those who could influence the company (Saunders, 1995).

- **Participation and cooperation**

TQM also emphasizes on participation and cooperation where quality is delivered through company members. The commitment of the management and the shop floor workers is thus important to the company's performance in which empowerment to staffs is also promoted by TQM. The cooperation has become more and more critical to companies due to the rigid competition and the demand of high efficiency. Cooperation means systematic thinking at all levels whereby all functions should act in the same direction. Organizations should be integrated vertically by all levels of employment staff and horizontally by all departments. The cooperation should also involve customers and suppliers (Evans and Lindsay, 2002).

- **Continuous improvement and learning**

The viewpoint behind continuous improvement is that there are always areas that can be improved. Companies can enhance their competitiveness by continuously delivering new products to customers and improving production step by step with process analysis. This improvement depends on and facilitates learning (Evans and Lindsay, 2002).

Continuous improvement cycle was proposed by Saylor (1992) that includes defining vision of the firm, followed by the stage where organization should improve opportunities. Then, based on the critical analysis of the external environment company select specific opportunity and implement it carefully. Finally, in the continuous improvement stage, organizations should asses the results of this strategy and continue its improvement cycle.

In order to fulfill continuous improvement, the learning cycle is needed. It emphasizes on learning through feedback between practices and results. The improvement should be carefully planned. Through execution, assessment of progress and revision for improvement are practiced. Through these practices learning organization is expected and TQM could be regarded as successful only when a learning organization is built up (Zimmer, 2001).

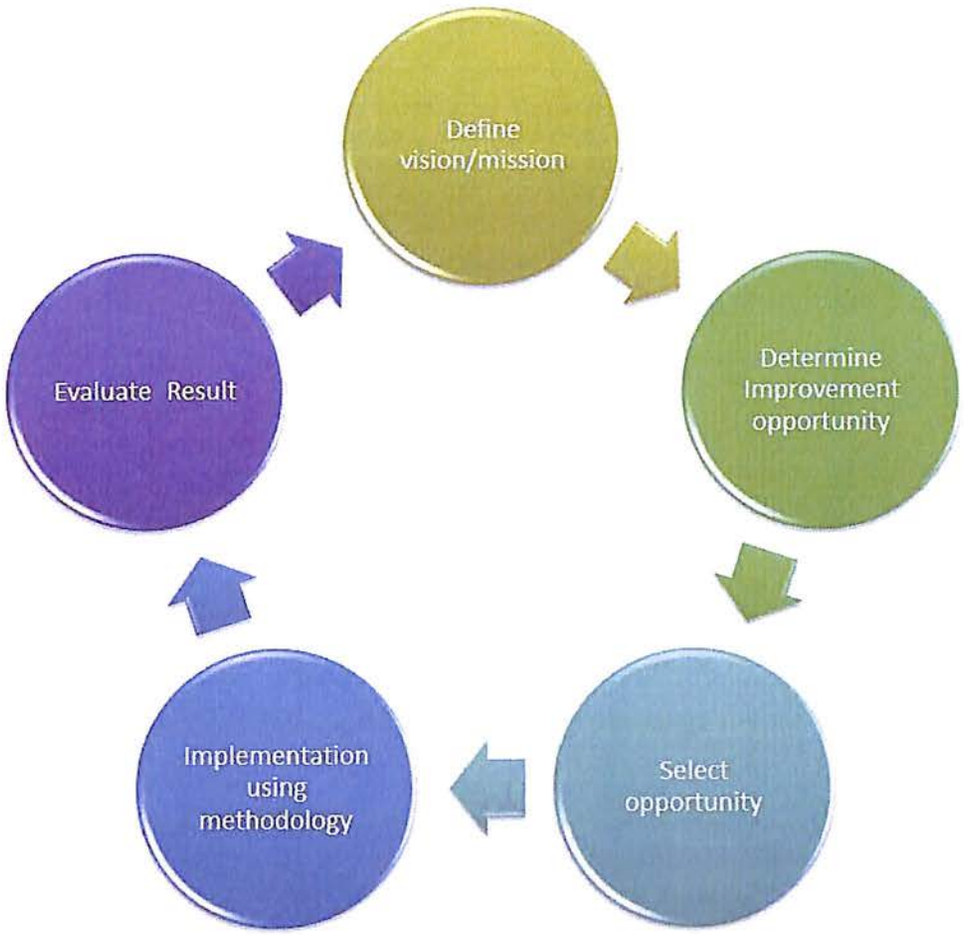

Figure 8: Continuous improvement cycle (Source: Saylor, 1992)

2.2.4 Quality Awards

- **International Organization for Standardization: ISO 9000 series**

TQM has been widely adopted and practiced since 1980's where quality has become a major focus of business. In order to standardize the quality requirements, International Standard Organization (ISO) adopted a series of quality standards in 1987. Till now the standards have been revised twice, in 1994 and 2000. The principles of ISO 9000:2000 are shown in Table 4. Nowadays the standards are served not only as unified quality requirements, but also as quality assurance and improvement frameworks (Cheng et al., 1996).

Principle 1: Focus on customers – There is a need for organizations to understand customer needs, meet their requirements and eventually exceed their expectations.
Principle 2: Provide leadership – Leaders must set the path on where the organization is heading. They should establish an environment that will encourage people to achieve

organizational goals and objectives.
Principle 3: Involve people – Organizations must encourage their people to use their abilities and involve them at all levels. The knowledge and skills gained by these key persons will be useful in meeting desired organizational results.
Principle 4: Use a process approach – Having a more efficient and effective approach on how processes are executed will definitely drive business performance.
Principle 5: Take a systems approach – There is a need to identify interrelated processes and treat them as a system.
Principle 6: Encourage continual improvement – Organizations must be committed in continually improving overall performance.
Principle 7: Get the facts before deciding – Every decision should be accompanied by factual information and data.
Principle 8: Work with suppliers – Organizations must establish a good working relationship with their suppliers to assist in adding customer value.

Table 4: ISO Principles

In addition, the main idea behind of ISO is that quality requirements can be standardized, thus it gives an advantage to both organization and its supplier to meet the QMS conditions (Jeroen et al., 2000). ISO usually provides organization with a required standard but never with the help on how to achieve them (Gotzamani and Tsiotras, 1996). Hence, each company can introduce their own quality framework that will meet the ISO standards and ISO can be assured that firm introduced certain procedures to guarantee the conformance of the products or services to customer requirements (Jeroen et al., 2000).

- **Deming Prize**

Founded by the Japanese Union of Scientist and Engineers (JUSE), Deming prize is considered as the most famous award (Ho, 1999). Similarly to the ISO, Deming prize is given to the best TQM practice and outstanding performance of a company. Deming prize is awarded to individuals and the Deming Application is awarded to the organizations (Godfrey et al., 2000). Deming prize assesses company in 10 dimensions: organization and operations, standardization, planning for the future, policy, education and training, quality assurance,

education and training, control, effect, collecting and using information (Ho, 1999). Deming Prize ensures that company applying for the award does meet the main criteria of improving TQM in all areas of the organization. The emphasis in qualifying for Deming awards must be on standardization. Japanese companies are famous for their approach to standardize the process that was effective, thus when it was standardized into the entire organization it can be guaranteed that international operations is conformant with international quality requirements (Ho, 1999).

- **Malcolm Baldrige National Quality Award**

To promote quality, many countries have set up national quality awards, which also served as a quality management framework. Inspired by Deming Prize in Japan, MBNQA was set up in 1987 in the United States (US) (Avery and Zabel, 1997). The aim of this national award is to improve on the quality and productivity of American companies (Ho, 1999). It intends to recognize companies, which achieved excellent performance in quality, and also provide other companies with guidelines and criteria for doing business well (Avery and Zabel, 1997). The criteria of MBNQA are widely adopted not only in the US, but also used for reference by other countries. Core concepts of the MBNQA are: continuous improvement and learning, leadership, valuing employees, design quality and prevention, fast response, management by facts, partnership development, and long range view of the future and result focus (Godfrey et al., 2000). The framework of MBNQA is presented in Figure 9.

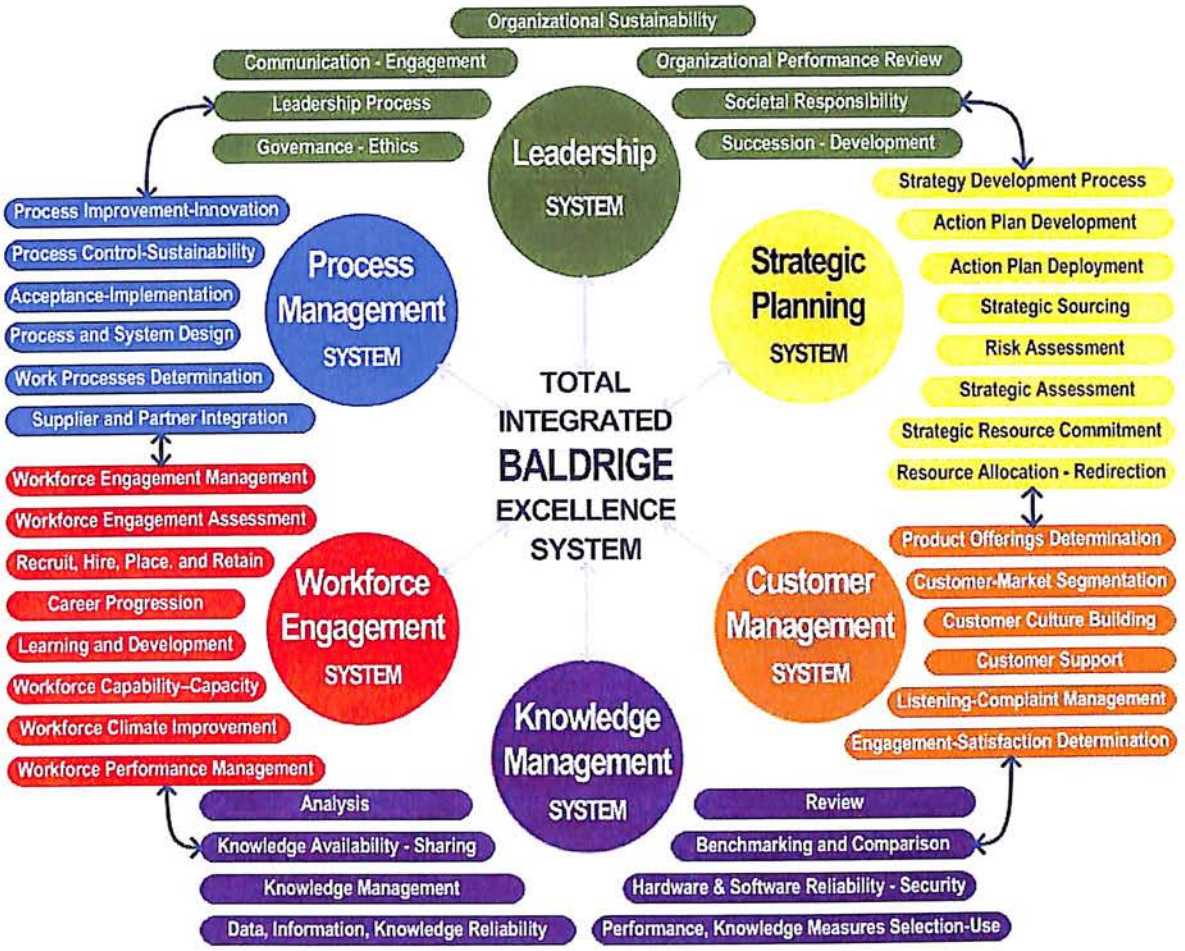

Figure 9: MBNQA Framework (Source: Baldrige Performance Excellence Program, 2013)

- **European Foundation for Quality Management**

This award is founded to recognize the qualified European organizations with the aim to promote the TQM implementation and ensure the place of European companies on the global market (Leonard and Zairi, 1994). The companies that follow total quality system subsequently encourage other organizations to adopt TQM as well (Ho, 1999). EFQM introduced the framework in 1988 based on the 9 points approach. The most important criterion of this award is whether the organization is powerful enough to influence the society, results and resource utilization. When EFQM presented its framework, it intended to force organizations to implement world class QMS and also foresee what type of organizations they need to be in order to achieve the world class quality thinking (Ho, 1999).

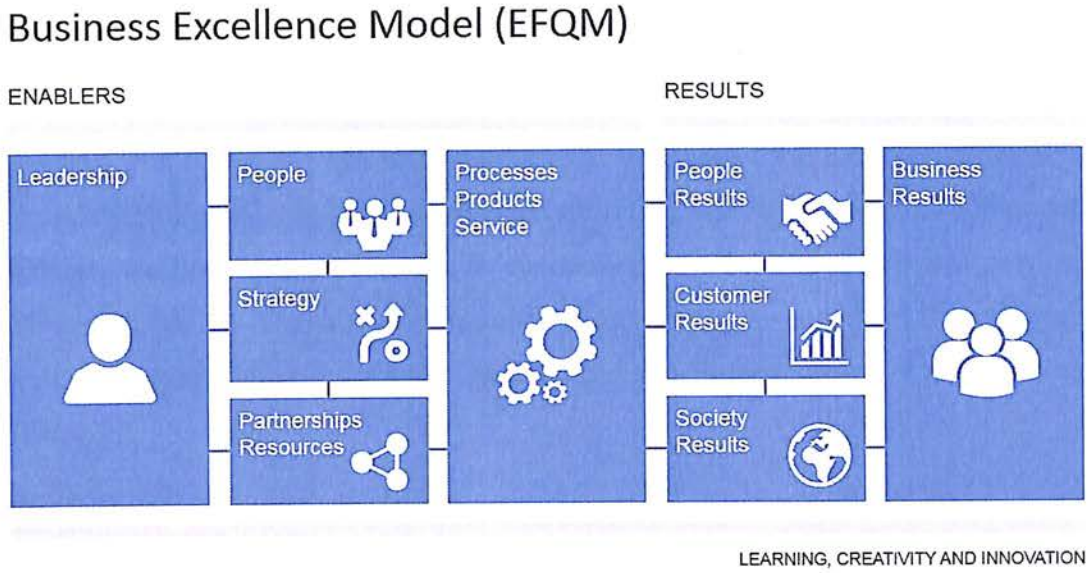

Figure 10: EFQM Framework (Source: Sankaran, 1993 and Ho, 1999)

2.2.5 Technical tools of TQM

A quality company must base on the context of modern quality management. To assure quality, TQM in practice is based on some technical tools. In fact TQM has a wide scope of technical tools (Evans and Lindsay, 2008). TQM requests that all the company's practices should work in the same direction in order to provide customers with satisfied products and services. The size of this study does not permit to discuss about the each technical tools in details, however, the author will provide a brief description of some frequently used quality control tools:

- **Six Sigma**

The Six Sigma is a design that puts together a few core components of past researches with addition of new elements to business management. In the long term, the Six Sigma looks at having to face only 3.4 defects per million productions. The Six Sigma can be said as customer friendly as it is able to communicate customers' need to help companies in improvement of products and services (Besterfield et al., 2003).

The Six Sigma can also be described as a statistical concept that measures the defects in a process. When a process is said to have achieved the Six Sigma it can be considered perfect. In a business setup, it will help in detecting the defects in the products and services to help the companies in enhancing perfection in their production. It is considered as a principle that

focuses on a well-designed methodology which is used to reduce process variability and reduce wastage in a production with the help of statistical tools and techniques (Antony and Banuelas, 2002).

In short, the term Six Sigma can be best defined as one that aids in eliminating defects. If a company is able to make use of the knowledge well, they will be able to reduce their defects and increase their profits at the same time. A research done by Antony and Banuelas (2002) concluded that the Six Sigma is used in many companies as a strategy in their business to improve the production process by reducing defects with the guide of a well-designed knowledge.

- **Statistical Process Control**

In perfecting products and services by a company, the SPC can be used. There are seven main techniques for this tool namely control charts, cause and effect diagram, histogram, correlation diagram, flow chart, Pareto analysis and frequency distribution (Besterfield et al., 2003):

1. ***Control charts***

   In improving the quality of a company's production, data collection has to be done first. Samples of the needed data can be taken at regular intervals by using the Control Charts or SPC Charts. This is done by providing the measured value or the statistical parameters for example the average value, scatter or spread of the data into the chart used. The may be the need of intervention in this process, and this depends on the specified amount of control and the characteristic progress of the values of the data collected (Besterfield et al., 2003).

2. ***Cause and effect diagram***

   Another method of presentation is the cause and effect diagram which is also known as the fishbone one or Ishikawa diagram, is used to evaluate facts in order to find out the cause of an incident in a process. The problem that will be analyzed will be placed in the fish head and the bones will be used to speak about the main influencing variables whereby the causes for each will be entered inside the bones, These variables will correspond frequently with the 7M checklist which are Man, Machine, Material, Method, Marginal conditions, Management and Measurement (Evans and Lindsay, 2008).

3. ***Histogram***

Histograms are used to aid the interpretation of the reasons for scatter by presenting the data values distribution. The data values are divided into classes according to the related statistical rules. With these, the abscissa of the diagram is formed. On the y-axis the number of data values per class has been displayed. The distribution curve reveals the average value and type of scatter (Evans and Lindsay, 2008).

4. ***Correlation diagram***

The correlation between two variables - problem and influencing variables are graphically described through scatter or correlation diagrams. Information on the nature of the correlation between the factors will be displayed when the factors are plotted in relation to one another in the x-y diagram. The distributions of the points are determining the nature of the correlation if it is weak or strong or positive or negative. This is help in drawing conclusions to determine the potential cause (Besterfield et al., 2003).

5. ***Flow chart***

These are charts that describe the very common forms of presentation namely bar charts, line graphs or charts, pie charts and spider charts. The charts are chosen based on the function of the research as it is important to be able to clearly display correlations or flows so that they can be understood (Evans and Lindsay, 2008).

6. ***Pareto analysis***

More often it is required to deal with different types of faults that will not be able to process concurrently. Quality managers tend to deal with the problems that are the most important or those which incur the highest cost first. Pareto Analysis, which is also known as ABC Analysis or Lorenz Distribution helps in putting the influencing variables in a proper order of importance which is usually determined by the order of influence it poses and the numerical significance and cumulative percentage it shows. This is help companies in tackling the few very important issues first instead of wasting time on insignificant issues in investigating a quality issue (Evans and Lindsay, 2008).

7. ***Frequency distribution***

Frequency distribution is the presentation of the frequency of appearance of individual faults and the frequency in which data values occur at certain intervals in the range. This mostly helps with recognizing fault clusters and individual points and the causes examined (Evans and Lindsay, 2008).

2.2.6 Elements of Total Quality Management

Company would have to engrave the core principles as a tradition to be followed before they can actually enjoy the fruit from implementing TQM. In this section, the main principles of TQM implementation are discussed:

- **Total management commitment and leadership**

When the management of an organization embraces deeply with the strategy for long term improvement and good relationship among everyone, the organization is able to obtain an effective change in its culture. The implementation of TQM is help to improve the performance of an organization by influencing other TQM dimensions (Kaynak, 2003). Oakland (1993) believes that top management of the company should use TQM if they aim to promote business and improve the effectiveness of the organization. Moreover, management leadership in using TQM will positively affect the relationship with suppliers and other stakeholders involved in the process of the value creation. Cooper and Ellram (1993) asserts that when the top management have a high commitment to the strategy of TQM in their daily work, they will be a good motivation factor to its employees in delivering quality services that can go beyond customers' expectations.

- **Cultural change**

Oakland (1989) believes that TQM aims at managing the entire business process in making sure that domestic and foreign customers are fully satisfied. Dale et al. (1994) stated that cultural change is an approach in making changes to the corporate culture of an organization so that it will be customer centered. The importance of the cultural changes depends on the role it plays in an organization. In other words, company's management moves determine the organizational culture, which is in turn affect all around them (Dale et al., 1994). It is exceedingly important to emphasize on the strategy in the staff's daily activities and organization is able to make perfect planning and implementation of their strategy by practicing good culture.

- **Customer focus**

TQM is a belief or philosophy which aims at satisfying customers' needs. Andrle (1994) claims that most organizations strive to satisfy customers' demands in their daily and long term operational activities. TQM serves as a guideline for companies in developing customer centered operational processes and aims at using resources at its best while saving cost at the same time. It is highlighted on the necessity for companies to have a close link with consumers to learn their needs and to check if their demands have been successfully met (Filippini and Forza, 1998). It is important to learn about customers' needs and expectation as it will help in developing new services or to improve old ones. This is because the product and service quality is defined by customers (Jablonski, 1992).

- **Total involvement**

In a more traditional concept, organizations welcome full involvement from employees as this gives a feel of being an owner of the company (Harvey and Brown, 1996). This is opposed to the belief of TQM whereby there is lack of personal involvement from employees. According to Dale and Cooper (1993), in the approach of TQM a high level of participation and commitment from employees are appreciated. This is based on a culture in the company in which employees are given the autonomy or a certain freedom in decision making that can give a turning point in their career. Hence, employees are expected to get involved in understanding the information received, find solutions to issues and take actions (Dimitriades, 2000). Omachonu and Ross (1994) also noted that intrinsic motivation is a strong pillar of TQM, in which total involvement of employees in empowerment and decision making are looked at as very important for sustained result. The main objective for making employees involve is to enhance both internal and external customers' satisfaction to develop innovation in achieving a flexible environment.

- **Continuous improvement**

Fuentes-Fuentes et al. (2004) determined the continuous improvement as the constant investigation of the process management for a purpose of improvement. Turney and Anderson (1989) in turn gave a different definition for the continuous improvement. They indicated it as the continuous strive for the product value increase in order to achieve customer satisfaction. Similarly, Dean and Bowen (1994) emphasized on the customer satisfaction improvement through the process enhancement at place.

Continuous improvement involves continuous planning, execution and evaluation processes (Muffatto and Panizzolo, 1995). Oakland (1993) stated that TQM stresses the importance of on on-going progress in the production from the outlining and managerial levels right to the action by the staffs. The main idea of an on-going advancement is to eliminate errors and put a stop to deficiencies.

- **Training**

Training is a very crucial step which helps to prepare employees in working towards managing the TQM belief in the production process. Training surely helps in equipping all with important skills and techniques which will aid in improvement of quality. Stahl (1995) argued that aims and objectives achieved in a business will help the business to grow.

Employees who undergo training will be able to tell if there is an opportunity for improvement as they have been trained to do so. According to Stahl (1995) training and development programs should be a continuous effort and not once in a lifetime event.

- **Teamwork**

A strongly built team is surely help in the effective production of goods and services by integrating activities that are involved in the production process. Dale et al. (1994) believes that teamwork is the ultimate in employee involvement because only with the teamwork there will be commitment among employees to achieve the goals and objectives of an organization. Many researchers believe that it is very important to build a team with people who have the right attitude when working in groups to benefit from quality management. Teamwork will help in bringing positive work attitude, for example being loyal to an organization and a strong focus in realizing the organizational goals. Martinez-Lorente et al. (1999) stated that good teamwork will bring great improvements and it will change the attitudes of employees who are afraid of changes.

2.2.7 Benefits of TQM implementation

When TQM is well implemented, an organization will surely be able to increase satisfaction among customers in the services and products they offer (Omachonu and Ross, 1994). When there is quality, customers will stay loyal as they are satisfied, and this will also benefit the organization as there is a good feedback which can bring in more customers through the word of mouth. This is a perfect form of marketing as it does not incur any cost. Omachonu and Ross (1994) also noted that this will lead an organization to a more competitive edge in

which there will be great improvement in quality that only results in increased profit and market share.

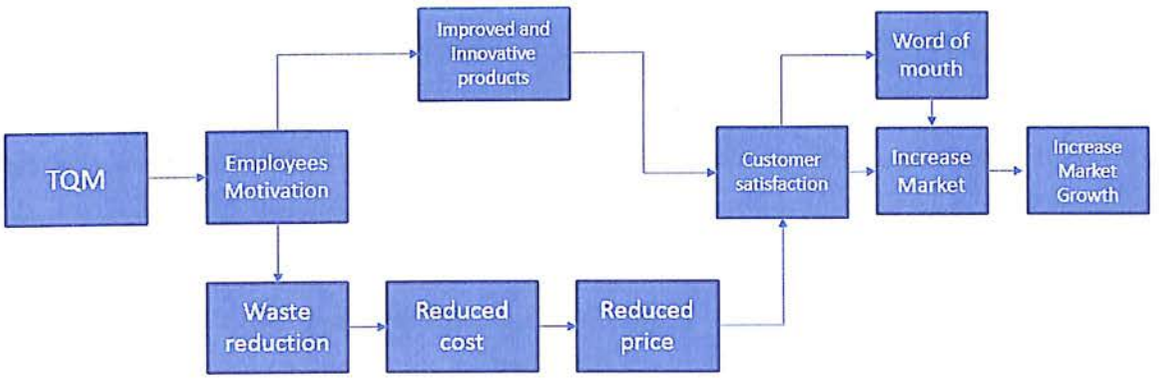

Figure 11: An adaption of the effect of quality management (Source: Omachonu and Ross, 1994)

TQM is a philosophy of management which stresses on the delegation of power to the front line staff. This will involve the staff in the decision making process through various activities such as quality cycles and teamwork. The only concern with this is what it will bring to employees' satisfaction. According to motivational theories there are two types of motivation theories: intrinsic and extrinsic motivation. Many still argue that the best form of motivation is self-fulfillment and recognition while there are people who find monetary incentive more attractive.

The intrinsic reward provides employees with a sense of power that allows them to make decisions that can affect their jobs, thus making them responsible and accountable. Dimitrades (2000) believes that this can increase employees' job satisfaction level. When TQM is implemented, each and every staff will go all out in serving the organization with high quality and this will bring an increase in efficiency in operation and reduction of waste. This is a great achievement for an organization as it can offer more value to its customers as the quality will be improved, hence lead to customer satisfaction.

By using TQM as a guideline, an organization will be able to monitor their performance and it will help in eliminating inefficiency, increasing satisfaction among customers and achieving the best name (Porter, 1996). In addition, continuous improvement in operational effectiveness is important but it does not totally profitable. Sila (2007) states that TQM contributes by increasing the value of products and at the same time lessen the diffusion, revamping and producing more stock through a steady production. He also stated that TQM

can help to reduce the overall cost and time of production involved. Continuous improvement is believed to decrease the product cycle lifetime and indirectly improve performance (Huang and Lin, 2002).

Sila (2007) noted that TQM can help to reduce the cost of production through the 'sole sourcing'. It can be achieved by reducing the supplier's number and providing existing ones with important trainings and technology. It is important for suppliers to meet the requirements of the organization in order to have an operation which functions efficiently. This is a reason why TQM stresses on total quality in every single aspect including the suppliers in order to achieve total customer satisfaction. Striving for customers' satisfaction can help to introduce a combined way of researching on processes. This will require each process of production to enshrine quality in the overall operation (Andrle, 1994). According to Kaynak (2003) the level of effectiveness of a TQM organization must be identified through the level of integration with their suppliers' bases. Operational effectiveness can be achieved depending on how well all the units in an organization function with high quality.

2.3 The interaction between TQM and financial, quality and innovation performance

2.3.1 TQM and financial performance

The relationships between managerial practices and business performances have been examined by many empirical studies. There is the relationship between the method used and the quality of performance between approaches for alternative quality and performance in operating and finance departments (Adam, 1994). According to Terziovski and Samson (1999) the main factors of good performance are good leaders, staff administration and interest on customers. This was discovered by implementing the TQM elements and organizational performance focusing on performance results and award categories. A few connections among TQM, plant performance and satisfaction of customers were noticed by Choi and Eboch (1998). Another study investigated the differences between the great and low quality plants (Flynn et al., 1994) while the relationship between competitive grades was examined by Curkovic et al. (1999).

A research was conducted among 22 organizations by Sinclair and Zairi (1995), to learn about their measures of performance, strategic aims and the fields for improvement to examine their improvement. The outcome of it was that there was a blank amidst strategic purposes and the organizational performances that are adopted.

There are a few relationships between cause and effect between organizational performance measures that are discussed in a few empirical studies. Norreklit (2000) found a method which uses a balance scorecard to check for assumptions and cause and effect chains. Other studies on the customer satisfaction, product value, customer loyalty and financial performance have conducted similar research (Bernhardt et al., 2000; Brandt, 2000; Edvardsson et al., 2000). Naumann and Hoisington (2000) have researched customer service and workplace surroundings as a connection with financial performance and relationships between the attitudes of customers and the market share.

The performance of 108 firms that implemented TQM between 1981 and 1991 was examined by Easton and Jarrell (1998). The result was obtained by comparing the performance of each company based on a benchmark set as compared to the performance without TQM. The result showed improvement on the stock price by 16.05% for firms which implemented TQM systems.

2.3.2 TQM and quality performance

The implementation of TQM will surely improve the performance of quality for the company. This has been proven true by many researches through various measurement methods. It is also discovered that the TQM model along with certain actions will be different in different places (Arumugam et al., 2008; Prajogo and Sohal, 2004).

Flynn et al. (1994) presented a framework for TQM which stressed that the important part of it is practices of the management of the quality and that the outcomes will be represented by quality performances. He also stated that quality performance will always have a significant correlation with the process of management methods, product design, and support from top management.

The relationship on the TQM and quality of software was examined by Parzinger and Nath (2000) who proved that the TQM adoption will help in improving the quality of software, which subsequently will enhance the customer satisfaction. Another study conducted examined the impact of TQM on organizational performances in the service organizations and found that quality and hike in productivity will happen when certain TQM practices are implemented. This elements are commitment of top management, trainings, good techniques, and involvement of staffs, benchmarking, costs, number of suppliers and customer satisfaction, service design (Hasan and Kerr, 2003). Similarly, Yang (2006) claims that employee empowerment, process management, staff cooperation, consumer loyalty, quality

pursuit from suppliers and training for quality tools do have significant effects on the level of satisfaction from customers. Companies which practice TQM will have gained in the competitive edge effectively.

A positive link was founded between quality performances and the practices of TQM in a research conducted by Prajogo and Brown (2004) among a few Australian organizations. Research done by Brah and Tee (2002) studied the main organizational performances and the elements of TQM by investigating the quality performance of Singapore companies. According to them, TQM implementation will bring to an increase in the quality of performance and brings to positive correlations. In his later study Prajogo (2005) conducted a research on the performance of quality and the TQM practices based on the number of manufacturing and service companies in Australia and discovered that there are no meaningful or obvious differences between the two sectors.

Sanchez-Rodriguez et al. (2006) used a Structural Equation Modeling (SEM) in the research of the TQM practices and modern information technology influence on the operational and quality performance. It was discovered that great gains in the performance of operations and quality effort are brought with these efforts. Equally, study performed by Prajogo and Sohal (2004) have applied SEM method in checking about the TQM and its dimensions and how it impacts organizational performance. Based on the information collected from 194 companies based in Australia it was noticed that the relationship between three elements of TQM, its relationship with quality enhancement and innovations with the organic elements exist.

The mutuality between the main factors of TQM: managerial roles, analysis of information, focus on customers' needs, staffing and administration, management of process, management of suppliers and customer needs, organizational effectiveness, financial and market values was explored by Sila and Ebrahimpour (2005). They discovered that analysis of information and leadership qualities are two factors that perform as foundations for business effectiveness.

A research was conducted to study the interaction between the implementation of TQM and the quality of performance on 122 ISO9001:2000 certified Malaysian manufacturing companies. It was done through correlation and multiple regression analyses and it was discovered that a partial correlation exists between the practices of TQM and quality performance (Arumugam et al., 2008). In addition, it was revealed that focus on customers' needs and continuous improvement is the main TQM practices in quality performance.

2.3.3 TQM and innovation performance

The relationships between TQM and innovation in service and manufacturing companies in Vietnam was studied by Hoang et al. (2006) and they found that there is a strong correlation between TQM and the level of newness and products and services creation. This further proves that TQM brings a great impact on the degree of novelty. Subsequently, the number of the introduced products and services to the market also increases.

Prajogo and Hong (2008) employed the SEM technique in researching about the relationship between innovation and TQM impact on the Research and Development (R&D) performances. They collected the data from manufacturing companies in South Korea and based on the findings it was proven that there is the connection of TQM elements and innovation of product and product quality.

Similarly, Martinez-Costa and Martinez-Lorente (2008) discovered a strong correlation between innovation of products and services with TQM after analyzing the information collected from 451 executive managers of Spanish firms. It was shown that TQM brought positive impact on product innovation as well as process information. They also added that the continuous improvement is important to increase the product quality in raising the production of the firm. It is necessary for companies to take TQM as a way to improve the process management and it must be implemented successfully to gain full benefit of it.

Abrunhosa et al. (2008) discovered a new connection between TQM and the innovation of technology. They examined the relationship by using a set of data from 20 Portugal footwear manufacturing firms and found an impact of TQM on the innovation of technology. In a more defined term, it was seen that practices of TQM namely people management; teamwork and communication have a significant impact on innovation. However, they insist that TQM function cannot be realized if there is no sophisticated implementation of it.

Data collected from 93 companies in Spain were studied by Santos-Vijande and Alvarez-Gonzalez (2007) and they found that TQM plays a main role as a good resource for improvement in performance excellence. The findings also showed that TQM has a meaningful force on administrative innovation and the impact on technical innovation lies in the firm's innovativeness in its mediating role. This conclusion is drawn with the help of their main analysis of the influence of TQM on the innovative culture of a firm. However, they believe that under the market conditions the findings can vary.

Based on the research conducted by Perdomo-Ortiz et al. (2006) TQM was seen as having the positive interconnection with the capability of a business innovation as well as on technological and non- technological innovation. In the study of 102 manufacturing companies in Spain it was found out about the role of TQM in the preparation of firms in having an innovative business entity. This is opposed to the findings of Prajogo and Sohal (2004), Terziovski and Samson (1999), McAdam et al. (1998) about the soft practices of TQM such as human resource management practices which are seen as the firm's real innovative forerunner.

Sadikoglu and Zehir (2010) conducted a research with data from 373 ISO 9001:2000 certified firms in Turkey and affirms the same understanding of positive effects of TQM practices on a firm's innovation performance. They found that TQM practice can bring the innovation performance if the managers have positive attitudes and empowerment behaviors as they will help in motivating their staffs and co-workers in performing innovatively in satisfying the needs of customers and enhance the ability for these firms to compete with others for the advantage of the firm. This will boost the firm's performance in terms of innovativeness.

Leavengood and Anderson (2011) found that companies that pay high attention on quality will not be innovative because these firms will tend to be susceptive to customers' needs. They will be driven by the needs of their consumers and will go all out to please or fulfill their needs instead of looking at the innovation. This is not the case for companies which focus on innovation. These companies are more proactive and they will be more positive and focus on development. Leavengood and Anderson (2011) pointed in an argument that companies which interacts with innovation as their business goal will be able to fully utilize TQM in serving towards performance in innovation.

2.4 Significance of the Single case study

The research strategy as described by Eisenhardt (1989) is the method of the case study that is concentrated on learning about actions taken in one environment. It can also be defined as a study of phenomena in the real life context (Yin, 1981). Thus, the environment of the study or settings of the research is very important in the qualitative case study.

In gathering strong data, researchers can conduct relevant interviews and observations, or study the simulations and archives available (Yin, 1994). Usually, qualitative data are more often used, though quantitative data are also acceptable. Both types of data usually gathered in the field itself. When the theory of the case is new, the method used in the qualitative

research study is very important (Glaser and Strauss, 1967). This is because single case studies can be resourceful in giving substantiated and accurate answer to the new theoretical model (Seawright and Gerring, 2008).

It is good to conduct a research on the single case study as there will be an opportunity to learn about latest outcomes in the area studied. In addition, single case studies have a proven advantage to identify the applicability of the developed model and can further link the data to the theory.

In short, it can be stated that using the case study research will bring an insight to the latest changes on the topic in the real life context. It is often used in an area where there is lack of establishment of the underlying theories. Other methods will not be suitable as the detailed information and causes may be too intricate.

2.5 Summary

To overcome issue related to financial, customer service quality and innovation within airline industries, I would like to research on TQM implementation effect on organizational performance specifically economics, customer satisfaction and innovativeness as well as interconnection and interdependency of performance parameters on each other.

TQM is comprehensively used in many companies including airline service industries as a system to enhance the quality in all functional area at all levels of the business. However, there has been minimal acknowledgment of TQM and its influence on airline industry performances and only a few attempts were made by researchers to empirically establish the interaction between major TQM practices and organizational performances, such as financial, customer service quality and innovation performance. The generic view of previous studies on the interaction of TQM practices and financial, customer service quality and innovation performances are still self-contradictory. It is highly important to examine the use of business initiatives like TQM and its influence on improvement in company economics, customer satisfaction and innovation fields for airline industries.

The main driver of this research is to examine the practices of TQM and its influence on financial, customer service quality and innovation results in airline companies. The study is also aimed to explore the relationship between the business performance among themselves as well as with the best TQM elements. With this research it is expected to have better understanding of the interaction between TQM system and the impact of each TQM element on organizational economics, customer satisfaction and innovation capability. Additionally,

conceptual framework model is also proposed based on the Prajogo and Sohal study origins and further enhancement is conducted and examined in the context of airline service and travel business. On the basis of the literature review it is also noteworthy to use the single case study approach in this thesis as it has various advantages. It will help to examine the new areas in the field of TQM theory development and it will also reveal the applicability of the theoretical framework to the real life situation in airline service industry.

3 Research Design, Methodology and Plan

3.1 Introduction

The main objective of this research study is to examine the interaction between implementation of TQM and airline organizational performances: financial, customer service quality and innovation outcomes and to define and validate the conceptual framework. Research methodology is important in order to map out the sequence of the research. All the techniques, procedures and methods involved in the research are included in this section. This section also illustrates the steps and methods that are used throughout the period of conducting this business case study. It also introduces the research methodology used in this research to validate the defined conceptual framework and the research flow of the business case study.

3.2 Research Methodology

Seven steps of the research procedure are proposed based on the conceptualized research process. The order in which these steps are conducted as below:

Step 1: Define the research objectives
Step 2: Identify the research design
Step 3: Define the information source and type
Step 4: Define the survey instrument
Step 5: Provide the sampling process
Step 6: Introduce the data collection process
Step 7: Data analysis

These seven steps are divided into 3 phases to address the research hypotheses. Brief summary of the phases are described below:

Phase 1: At the first stage the project objectives and scopes are defined. Furthermore, the research questions are clearly defined and the theoretical background of the study is examined in the literature review part.

Phase 2: At the second step of the project methodology proposed conceptual framework is developed and extended based on the study conducted by Prajogo and Sohal. This conceptual framework is tested using the single case study approach at the airline company located in UAE. To verify this research model author support this development based on the literature.

Phase 3: After verification of the research framework it is tested using qualitative research method tools. Data collected are analyzed in the data analysis tools such as MS Excel, SPSS software and SAS software and the finalized research framework is presented. Data analysis,

report findings and suggestions for future research is presented at this phase. The illustration of seven steps in the form of flow chart is shown in below figure.

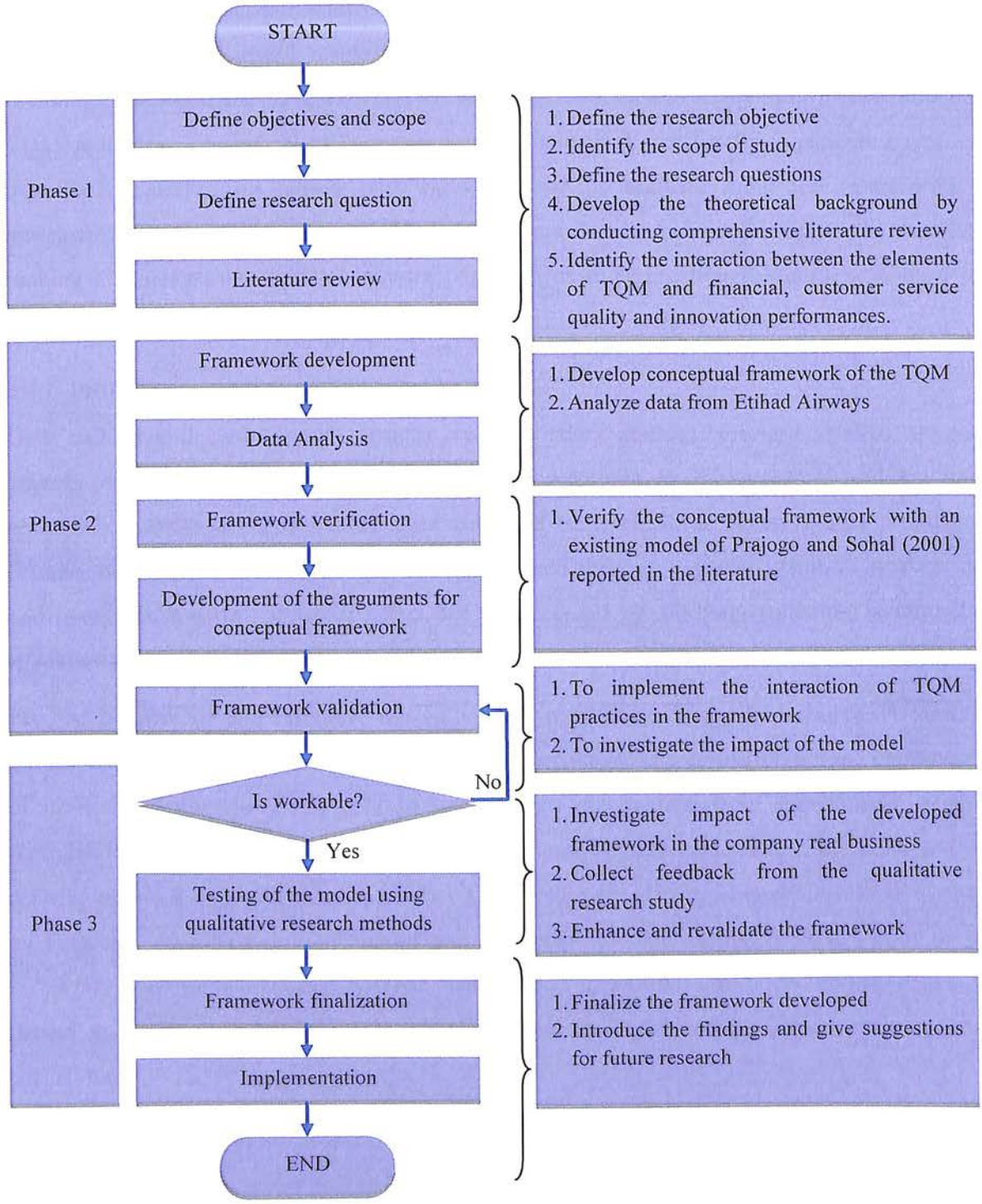

Figure 12: Steps in Research Methodology

3.3 Research Design

Research design can be put into two main categories which are exploratory and conclusive. These design categories can be divided into causal and descriptive (Malhotra, 2010). Causal research design used in this research in order to come up with the cause and effects of the interaction between the customer service quality, financial and innovation effects and the TQM practices. The causal relationship is a formally and structurally constructed type of quantitative analysis. In helping with the success of the analysis, a big and representative amount of data is needed. The conclusive findings usually help with support in decision making at management level (Malhotra, 2010). This method, though complex, is used to obtain precise and useful data.

3.4 Information Source and Types

Data can be collected through primary and secondary sources. Primary sources are the sources initiated by the researcher for finding solutions to the research problem and secondary sources are those extra data collected to learn about other related problems. Primary data can be collected through interviews and surveys, experiments and observations and many other ways. Secondary data can be accessed by studying statistics, statements, academic journals and reports.

For the purpose of this research, the author has used the primary data source. A survey questionnaire is designed and distributed for the purpose of data collection among employees of airline industries in UAE and on top of that, information from the website of the participating companies, reports and also the company's page on LinkedIn are collected in order to obtain the reliable data about the TQM system adopted by companies and its impact on financial, customer service quality and innovativeness performance. Apart from these secondary sources of data are referred such as books, journals, research reports, research papers and e-journals available on internet related to TQM and its impact on company performance.

3.5 Design of the survey instrument

The designing of the survey instrument is done with huge care as it is a very important aspect in collecting reliable data from the samples which can affect the results of the survey. In this research, questionnaires which consist of definite set of scaled questions are utilized to gather primary data. The Likert scale from strongly disagree to strongly agree and the measurement from 1 to 5 are applied in the questionnaire. A Likert scale is a psychometric scale commonly

involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research, such that the term is often used interchangeably with rating scale. According to the research plan this study adopted the qualitative research methods and use the questionnaire send via e-mails and through the LinkedIn profiles.

Research Approach	Research Instruments	Contact Methods	Sampling Plan
Survey	**Questionnaire**	**Mail Questionnaire**	**Sampling Unit**
Observation	Mechanical Instruments	Personal Interview	**Sampling Size**
Experiment		Telephonic Interview	**Sampling Procedure**
		Online Interview	

Table 5: Research Plan (Source: Kotler at al., 2003)

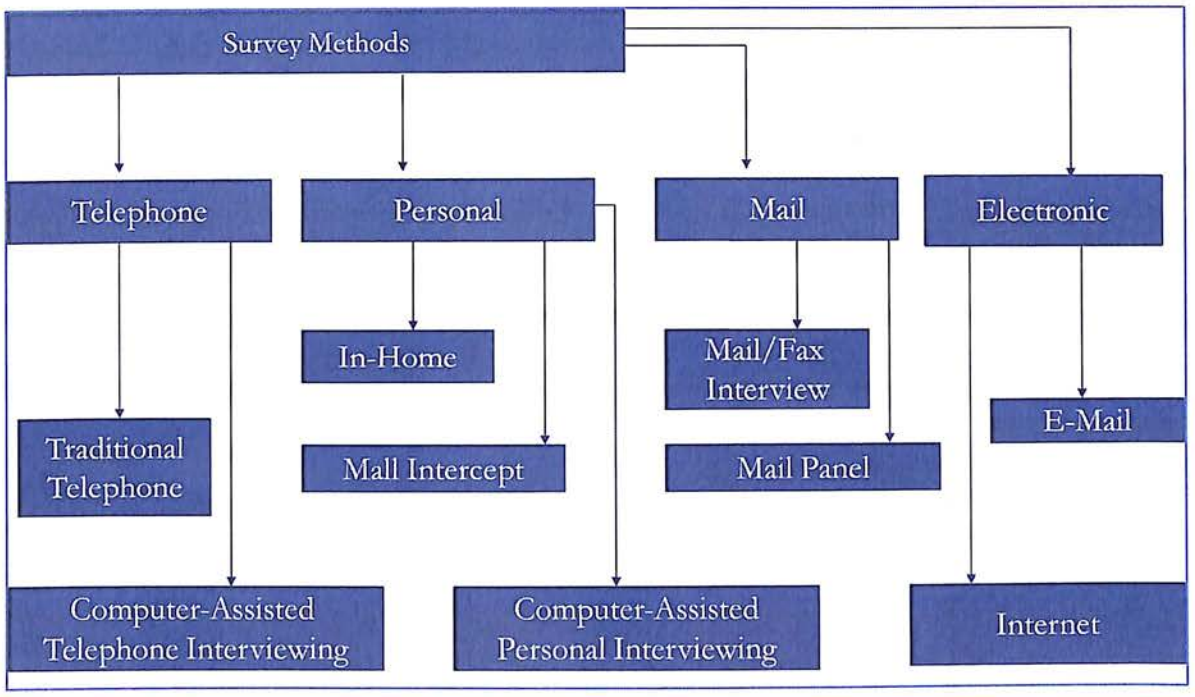

Figure 13: Classification of survey methods

3.6 Sampling Design Process

An existing measurement instrument that has been tested and validated was adapted to measure both inputs - extent of implementation of TQM, and outputs - financial, quality and innovation performances. Details of the measurement instrument are described below. Extent of TQM implementation and organizational performance were measured via the instrument developed and used by Prajogo and Sohal (2001) and further improved by Leavengood and Anderson (2011). Prajogo and Sohal (2001) in turn adapted the instrument originally developed and tested by Terziovski and Samson (1999).

The Prajogo and Sohal (2001) instrument was selected based on the fact that it has been tested and found to be reliable and valid (construct, content, and criterion); in addition, the instrument has recently been used by other researchers exploring the relationships between quality and innovation (Prajogo and Brown, 2004; Prajogo and Ahmed, 2007).

Terziovski and Samson (1999) developed the scale for measuring extent of TQM implementation based on the MBNQA criteria.

Leavengood and Anderson (2011) in addition to benchmarking included the questions on the data and information availability and on the decision-making processes (Appendix 1). Few more questions were adapted from the study of Raja et al. (2011) on the TQM practices and its influence on the business performance.

The performance section of the measurement instrument includes metrics for financial, quality and innovation performance. For quality performance, Prajogo and Sohal (2001) reported using the instrument developed by Ahire et al. (1996). This instrument measures quality as a single construct, however multiple dimensions of quality are included within the construct.

The Prajogo and Sohal (2001) instrument addresses product and process innovation performance, but not business systems/ administrative innovation. Innovation is measured by three separate constructs – product, process, and business systems innovation. Therefore, for the similar research Leavengood and Anderson (2011) added three more questions developed by Johannessen et al. (2001), which were also adapted for this research.

In summary, the survey instrument developed and used by Prajogo and Sohal (2001) was used nearly verbatim. The only changes made were the addition of questions on financial performance. The final instrument used is shown in Appendix 1.

Random sampling is one of the most popular types of random or probability sampling. In this technique, each member of the population has an equal chance of being selected as subject. The entire process of sampling is done in a single step with each subject selected independently of the other members of the population. The population for this business case study will be employees working in airline companies operated in UAE such as Etihad, Emirates, Air Arabia, Spice Jet, Air India, Indigo, etc. The researcher will use simple random sampling technique to identify respondents through LinkedIn profiles and company contact details.

3.7 Data Collection

In the collection of data, online questionnaire developed by the survey service provider – SurveyMonkey accessed through www.surveymonkey.net web site was used. This is because there are many advantages of using online questionnaires such as:

a) Access to unique samples of populations:
   - Individuals and groups who would be difficult to reach via other methods can be approached.

b) Time saving
   - The author can reach a large group of samples from different parts of the world in a short time.
   - Author can obtain the results of the survey while they are at other parts of the research, this is because the results will be derived and sent directly to the author by various sources such as email and others. This way they can start working on the analysis while waiting for the whole set to come in.
   - They do not have to key in data as the responses can be generated in the Statistical Package for Social Sciences (SPSS) program compatible file.

c) Cost saving
   - The reduction of paper usage saves a lot of cost when electronic medium is used.
   - This is because there is no longer the need for printing, postage, drafts and data entry.

The survey was passed among target people who are samples via emails, through LinkedIn profiles and using the web-forum for expatriates in UAE. The questions were built in such a way that only related people will answer. At the same time, information was collected from secondary sources such as online magazines and company website to obtain more detailed information about the quality practices in the company.

The online survey site was closed once targeted sampling size is achieved. Then, the summarized data was then exported and analyzed using the SPSS software.

3.8 Summary

In summary, this chapter introduced with the research methodology applied in this thesis. The seven steps approach used in this study was presented. This approach was applied to address the research questions related to the identifying the interaction between TQM and financial, quality and innovation performances. The techniques, procedures and methods involved in

this research were drawn in the form of the flow chart diagram and presented with detailed description. The conceptual framework development introduced in the next chapter and the findings from the qualitative research are outlined in the Chapter 6.

4 Development of the Conceptual Framework

4.1 Introduction

It is essential to investigate the interaction between TQM elements and financial, customer service quality and innovation performances through accomplishment and development of the conceptual framework. This model is a modification of the Prajogo and Sohal (2001) framework, which is reformed to fit in with the objectives of this study. Proposed framework and the discussion will be presented in this chapter. The main purpose of this chapter is to create a theoretical conceptual framework to implement the TQM in the organization and examine its interaction with the financial, customer service quality and innovation performances in Airline Industry.

4.2 Proposed Research Framework

Figure 14, shows the conceptual research framework that is an extension of the model proposed by Prajogo and Sohal (2001). This research also examines the impact of TQM practices on the firm's financial, customer service quality and innovation performances. In the literature, eight elements are considered as the dimensions of TQM but the author selects only six most prevailing of them namely: management leadership, people management, customer focus, strategic planning, process management, and information and analysis. This research is assessing the effects of these practices of TQM on financial performance, customer service quality, product innovation, process innovation and business systems innovation. The most important question to be answered in the study is how significant is the correlation between this practices and organizational performance measurements.

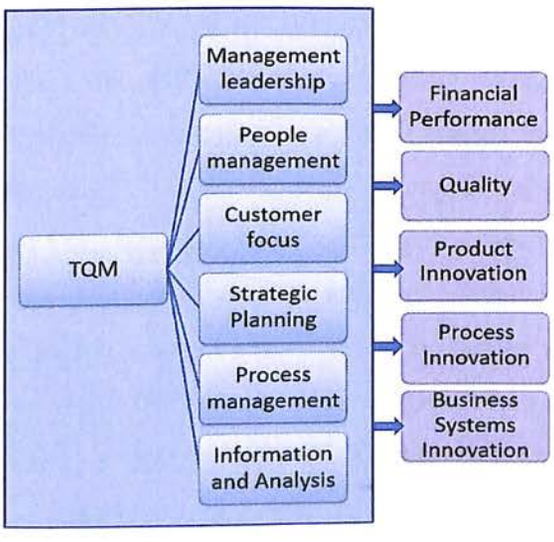

Figure 14: Conceptual Research framework

4.3 Arguments to Support the Relationship

The elements of the TQM chosen for this study are the most prevailing in the literature, quality awards criteria and in the most QMS adapted by the organization. The concept of TQM is wide and involves a variety of departments. Hence it is important to manage people well so that the relevant and sufficient information on the concepts and tools can be provided in order to run the operations well as their skills can be enhanced for both themselves and the company they serve (Ahire et al., 1996; Sila and Ebrahimpour, 2005).

The success of TQM implementation relies heavily on how well companies can retain their customers which can help in increasing the market share (Harr and Spell, 2008). When a company can supply their customers with reliable and quality products and services, their customers will stay loyal to them (Harr and Spell, 2008). In short, companies must focus on the satisfaction, confidence and loyalty of customers which will lead to lesser complaints. The concepts of TQM - organizational learning, customer satisfaction and the cost of quality is favor the growth of the company's measurement characteristics (Hendricks and Singhal, 2001). An example is the total cost of quality will decrease when there is an increase of conformance quality and vice versa. It can be said that firms with tight control over their operations processes can only see a benefit from the TQM implementation. A high level of customer satisfaction will bring to high retention rates, increase in market share and hike in profit. To implement organizational learning, a company should take responsibility in ensuring their staffs can use scientific methods, enhance specific knowledge and change the system for performance measurement. The characteristic of each firm is determining the level of success in organizational learning and customer responsiveness. A company that emphasizes on a high internal cooperation and on open organizational attribute is enhance the quality culture and encourage the staffs knowledge sharing. When organization overcomes typical limitations the TQM implementation is actually benefit the company (Leonard and Sasser, 1982). Another element of TQM that helps in improving the product quality is the management of the process [34]. Practical studies discovered that the quality of products are directly affected by the management of process and when there is a good management of leadership, employees are accept quality culture, hence the quality in their performance. The factual approach in making right decisions is also significant and has a positive correlation with the quality data analysis because it leads to a quality in performance (Ho et al.; 2001, Choi and Eboch, 1998; Sadıkoğlu and Zehir, 2010). However, there is no significant relationship between quality of performance and continuous improvement tools (Sadıkoğlu

and Zehir, 2010). Prajogo and Sohal (2001) revealed the impact of three TQM practices on innovation in terms of the increasing the satisfaction among customers. TQM adoption is force the companies to be more innovative to increase the satisfaction of their customers by trying out better ways to exceed their expectations. There are also many other studies on the mutuality between TQM and innovativeness which is focused on customer orientation, management leadership and continuous improvement in order to enhance success of the company. Mielgo. et al (2009) placed the elements of TQM into two groups to show the link between management leadership and innovation. Findings revealed that leadership is make employees come up with new and working ideas to help solve problems and create new products. Besides that, a people management is also important for innovation, especially when there is an encouragement towards change and creative thinking (Mielgo. et al, 2009). According to Sadikoglu and Zehir (2010) and Hung et al. (2011), all the elements of TQM are significant and lead to positive relationships with the innovativeness, which in turn bring the company significant increase in market share.

4.4 Summary

In short, this section presented the conceptual framework to be tested during the qualitative research stage. The most widespread elements of TQM: management leadership, people management, customer focus, strategic planning, process management and information and analysis were chosen to be tested on the relationship with the five outcomes of the financial, quality and innovation performances: financial performance, quality, product innovation, process innovation and business systems innovation. Based on the developed conceptual framework and literature review five research hypothesis were introduced.

5 Findings and Data Analysis

5.1 Introduction

In this section, the findings of the study are presented with a detailed description of the analysis on the techniques applied based on the research objectives. The first part of this chapter is a thorough research on the level of TQM awareness among the employees of the UAE Airline company. In collecting the related data, the author used a qualitative research method. The data was then analyzed according to the knowledge acquired from the literature review and shown is section 5.2.

The investigation is being done to assess the impact of TQM elements on financial performance, customer service quality, service offerings and process innovation and business systems innovation. The survey has been publish on the SurveyMonkey web site and totally 103 responses out of 178 were used in this analysis based on the following filters – Voluntary consent for participation and Complete responses.

5.2 Survey administration

The survey questionnaire consists of 52 questions. The population for this study was the employees from Airline Company located in the UAE. This is because this company implemented TQM in their company. The respondents were selected by using Probability Sampling, by method of Systematic Random Sampling Technique because it is most convenient, least expensive and least time consuming. This is also suitable approach as the respondents come from the same company even though they are from different department. Author has varied the respondents in order to see the pattern of answer from different demographic settings. According to Sekaran (2003) the number of respondents can be within 30 to 500 peoples. This company has about 25000 staff and the author distributed the link to the survey to about 2% (500 respondents) from the amount of this samples. The researcher chose 500 respondents because it is acceptable and sufficient to represent the population and meets the requirements of this research. However, in the data collection survey only 178 respondents has given the responses to the research. Anyhow, after the filtration has been made, only 103 respondents' answer was considered acceptable. The data collection was opened to respondents for a month from 01 December 2019 until 31 December 2019.The main section of the survey consists of the following parts: part A (Management Leadership), Part B (People Management), Part C (Customer Focus), Part D (Strategic Planning), Part E (Process Management), Part F (Information Analysis), Part G (quality), Part H (Product

Innovation), Part I (Process Innovation), Part J (Business System Innovation) and Part K (Financial Performance).

All the data are processed and analyzed by using SPSS software. The result will be in form of frequency, means and cross tabulation.

5.3 Ethical consideration

Researcher has to foresee any potential ethical dilemma that may arise during the research study. Ethical problem appears also when there is the possibility for bias, cheating or faking the research results (Creswell, 2009). Potential ethical consideration might be following: consent issues, confidentiality, honesty of answers and researcher bias (Gibson and Brown, 2009). Since this survey was created on the online web site and administration was done through the options provided by online survey provider there was little probability that the results could be faking. Survey was created in such a manner that respondent could answer the questions from the Personal Computer (PC) with recognized Internet Protocol (IP) once only. To avoid non representative of the company to answer the survey the question regarding the company name and position were asked in the last part of the questionnaire. Ethical conduct also suggests obtaining the consent of the potential participant to take part in the study (Gephart, 2004). Therefore, the questionnaire started with the brief explanation about the subject of the study, aim, target group, researcher's contact details, potential risks and benefits from participating in this study (Appendix 1). Another potential ethical issue for this research project can become the plagiarism problem. Therefore, the author will make sure that all the information provided here will be well cited in the reference section.

5.4 Company

The case study was conducted in one of the UAE's large size Airline Company that was established in 2003. The main office located in the Abu Dhabi, UAE. The company has about 25000 employees and number of the divisions containing the different business units and departments (Company web site, 2020).

5.5 Summary

This section discusses the analysis of the data collected for this study. The survey questionnaire applied was cautiously analyzed in order to make sure the accurate presentation of the data gathered. A retrospective study is using questionnaire that consist of 52 questions for the respondent to answer. The target respondents for this research are those who work in Airline Company. This research is using probability sampling, by the method of systematic

sampling. The responses count to 103 as of 31st of December 2019. The analysis will be further by frequencies, mean, cross tabulation and reliability test. Therefore, for further clarification all the data in the chapter 5 can be used for final recommendations and conclusion.

6 Results and Discussions

6.1 Introduction

Statistical techniques are important to analyze the qualitative data used in the study. Therefore, the study has been using several techniques to analyze the collection of the data. The author used reliability test, cross tabulation, frequency, mean, rank and so on. The reliability test has been used to confirm whether the level of measurement effect was stable and consistent or not (Carmines and Zeller, 1979). Reliability also involves the repeatability of the data. According to Malhotra (2010), the reliability test is done to ensure that the scales used in the questionnaires are reliable and provide consistent result. Therefore, reliability testing has been performed and the Cronbach alpha coefficient achieved. A cross tabulation also is one of the tool that has been used. Cross tabulation is the table that allows examining the summary data for two or more variables (Malhotra, 2010). The advantage of cross tabulation is that they are simple and easy to produce and allow easy comparison between data. The cross tabulation will lead to scatter plot. A scatter plot is essentially a graph used to assess the relationship between two variables. The mean used to analyze the data in this research is representing the average value and the most used measure of central trend. This value can also be calculated when data is internal (Kotler, 2009).

6.2 Results

6.2.1 Reliability Analysis

Reliability analysis is needed to check whether the measuring instrument is consistent or not. Additional purpose to do the reliability test is to analyze the stability of the data. Usually, the Cronbach alpha above 0.60 is considered as the good result, however, as closer the Cronbach alpha result to 1 is better it is considered for the research (Sekaran, 2003). This research consists of 11 attributes and all of the attributes shows a very significant reliability test towards the study. According to Sekaran (2003), the reliability test can be considered as good when the variable scores more than 0.80 while scores more than 0.90 considered as excellent. Fortunately, the reliability test for all attributes is more than 0.80. Attributes scored more than 0.80 are Management Leadership, People Management, Customer Focus, Strategic Planning, Process Management, Information and Analysis, Financial performance, Customer Service Quality, Product Innovation, Process Innovation and Business System Innovation. While, the attribute scored more than 0.90 is Product Innovation. Therefore, all the data that are being used in the questionnaire are reliable and the data collected are highly trustable.

Attributes	Cronbach Alpha	No of questions
Management Leadership	.805	4
People Management	.800	5
Customer Focus	.842	6
Strategic Planning	.865	4
Process Management	.805	5
Information & Analysis	.835	4
Financial performance (dv)	.884	7
Quality (dv)	.863	4
Product Innovation (dv)	.915	5
Process Innovation	.897	4
Business Systems Innovation	.897	4

Table 6: Reliability Statistic

6.2.2 Respondent Profile

Absolute frequency or frequency is the term in the statistic used to describe the number of event occurred during the study. Most of the times this frequencies are plot in the histograms format (Malhotra, 2010). The respondent's profile for this study is analyzed based on the nationality, gender, age, education, number of years with the company, department, position and quality award of the company.

- **Nationality**

Based on the data, most of the respondents are Indian (87.5%) followed by Arabic nationals (5.8%) and Filipino (1.9%) and other nationalities were 4.8%.

Nationality	Frequency	Percent
Indian	90	87.4
Arabic Nationals (GCC)	6	5.8
Filipino	2	1.9
Canadian	1	1.0
Dutch	1	1.0
Russian	1	1.0
Singaporean	1	1.0
Uzbekistan	1	1.0
Total	103	100.0

Table 7: Nationality

- **Gender**

Based on the data 89.3% respondents are male and female represent only 10.7% population of the sample.

	Frequency	Percent
Male	92	89.3
Female	11	10.7
Total	103	100.0

Table 8: Gender

- **Age**

Most of the respondents' age is between 30-39 years old with 47.6%, followed by 21-29 years old with 33%, 12.6% respondents' age between 40-49 years old, 4.9% respondents between 50-59 years old and 1.9% respondents' age is 60 or above years old.

- **Qualification**

Most of the respondents possess at least bachelor degree representing 79.6% population of the sample, master degree is hold only by 14.6% and high school degree with 2.9% respondents.

	Frequency	Percent
High school degree or equivalent (e.g., GED)	3	2.9
Bachelor degree	82	79.6
Master degree	15	14.6
Other (please specify)	3	2.9
Total	103	100.0

Table 9: Qualification

- **Work experience**

54.4% of the respondents have been served the company for around 5-10 years, 19.4% respondents served 2-5 years, and 13.6% served around 0-2 years, 9.7% respondents have served around 10-15 years and merely 2.9% of respondents have served the company for 15 Years & above.

Valid	Frequency	Percent
0-2 Years	14	13.6
2-5 Years	20	19.4
5-10 Years	56	54.4
10-15 Years	10	9.7
15 Years & Above	3	2.9
Total	103	100.0

Table 10: Year of Serving

- **Field of work**

47.6% of the respondents are from operations department, 18.4% respondents are from multiple departments such as project management, procurement, commercial, and so on. 8.7% of the respondents from marketing department, sales 7.8% respondents, IT with 6.8% respondents, Human Resource 2.9% and various departments such as accounting, finance, legal, engineering, planning, business intelligence, public relations and administration consists of 1% respondents each.

Department	Frequency	Percent
Accounting	1	1.0
Marketing	9	8.7
Operations	49	47.6
Human Resources	3	2.9
Sales	8	7.8
Finance	1	1.0
Legal	1	1.0
IT	7	6.8
Engineering	1	1.0
Planning	1	1.0
Business Intelligence	1	1.0
Public Relations	1	1.0
Administration	1	1.0
Others	19	18.4
Total	**103**	**100.0**

Table 11: Departments

- **Designation**

The table 12 is presenting the data on the position of the respondents. After re-accumulated the position written by the respondents, most of the respondent positions are Senior Executive (23.3%), Managers (19.4%), Executive (15.5%), Consultant (14.6%), etc.

Job Title	Frequency	Percent
Managers	20	19.4
Advisor	1	1.0
Consultant	15	14.6
Engineer	1	1.0
Executive	16	15.5
Senior Executive	24	23.3
System Analyst	7	6.8
Specialist	14	13.6
Officer	5	4.9
Total	**103**	**100.0**

Table 12: Job Title

- **Quality award**

Most of the respondents aware that, the company they serve has been ISO certified with 77.7%. 13.6% of respondents believe that the company has won other awards and 8.7% said their company does not have any TQM/QMS in place.

	Frequency	Percent
Other (please specify)	14	13.6
ISO	80	77.7
None	9	8.7
Total	103	100.0

Table 13: Award Winning

6.2.3 Independent Variable Attributes

This section discusses about the decision rule in order to evaluate the interaction between TQM practices and following organizational performance measurements: financial improvement, customer service quality conformance, product and process innovation and business systems innovation. The function is based on the theoretical five dimensions of the Likert Scale (1=Strongly Disagree, 2=Disagree, 3=Neither Agree or Disagree, 4=agree, 5=Strongly Agree). Anything that above the theoretical mean of 3.0 indicates that TQM adoption is above average and all elements in the company such as Management Leadership, People Management, Customer Focus, Strategic Planning, Process Management; Information & Analysis contributes to this result.

Based on the table 14, it can be indicated that all independent variables are exceed the average scores 3.0. Therefore, the result indicates that respondents nearly agree (3.5- 4.0) that Management Leadership, Customer Focus, Information Analysis and Process Management are the practices that adopted by their company. Strategic Planning become the most important variable with the highest score (4.105) and People Management score the lowest point (3.099).

In Management Leadership, the most important element is the Question 2 (Rank 1). In People Management, the element that has the rank 1 is the Question 1. In Customer Focus part, Question 4 is ranked as 1. In Strategic Planning Question 1 is ranked as 1. In Process Management Question 2 ranked as the top and for Information and Analysis part Question 3 ranked as 1.

No		Mean	Std. Dev.	Rank
Q1	MANAGEMENT LEADERSHIP			
1	Senior executives share similar beliefs about the future direction of this organization.	3.9320	.75747	2
2	Senior managers actively encourage change and implement a culture of improvement, learning and innovation in pursuit of 'excellence'.	4.0777	.70973	1
3	Employees have the opportunity to share in and are encouraged to help the organization to implement changes.	3.8544	.84491	3
4	There is a high degree of unity of purpose in our company, and we have eliminated barriers between individuals and/or departments.	3.5049	.91688	4
		3.836		
Q2	PEOPLE MANAGEMENT	Mean	Std. Dev.	Rank
1	We have an organization-wide training and development process, including career path planning for all our employees.	4.1650	.81766	1
2	Our company has maintained both 'top-down' and 'bottom-up' communication processes.	3.7670	.97220	4
3	Employee satisfaction is formally and regularly measured.	3.5243	1.02751	5
4	Employee flexibility, multi-skilling and training are actively used to support performance improvement.	3.7864	.90370	3
5	We always maintain a work environment that contributes to the health, safety and well-being of all employees.	4.0388	.76597	2
		3.099		

Q3	CUSTOMER FOCUS	Mean	Std. Dev.	Rank
1	We actively and regularly seek customer inputs to identify their needs and expectations.	3.7379	.74044	2
2	Customer needs and expectations are effectively disseminated and understood throughout the workforce.	3.6796	.78232	3
3	We involve customers in our product design processes.	3.5825	.78621	6
4	We always maintain a close relationship with our customers and provide them an easy channel for communicating with us.	3.9612	.67042	1
5	We have an effective process for resolving customers' complaints.	3.6214	.87578	5
6	We systematically and regularly measure customer satisfaction.	3.6796	.73048	3
		3.708		
Q4	STRATEGIC PLANNING	Mean	Std. Dev.	Rank
1	We have a mission statement which has been communicated throughout the company and is supported by our employees.	4.2136	.74952	1
2	We have a comprehensive and structured planning process which regularly sets and reviews short and long-term goals.	4.1553	.73774	2
3	When we develop our plans, policies and objectives we always incorporate the needs of all stakeholders, including the community.	3.9903	.81041	4
4	We have a written statement of strategy covering all business operations which is articulated and agreed to by our Senior Managers.	4.0680	.73113	3
		4.105		

Q5	PROCESS MANAGEMENT	Mean	Std. Dev.	Rank
1	We design processes in our plant to be 'fool-proof' (preventive-oriented).	3.8155	.77646	2
2	We have clear, standardized and documented process instructions which are well understood by our employees.	3.9612	.73993	1
3	We make extensive use of statistical techniques (e.g., SPC) to improve the processes and to reduce variation.	3.6602	.81112	4
4	We strive to establish long-term relationships with suppliers.	3.8058	.68683	3
		3.824		
Q6	INFORMATION & ANALYSIS	Mean	Std. Dev.	Rank
1	Our company has an effective performance measurement system to track overall organization performance.	3.9709	.82196	2
2	Up-to-date data and information of company performance are always readily available for those who need them.	3.7864	.80013	4
3	Senior management regularly meets to review company performance and use the information as a basis for decision making.	4.0291	.63333	1
4	We are engaged in an active competitive benchmarking program to measure our performance against the 'best quality practice' in the industry.	3.9126	.76833	3
		3.925		

Table 14: Independent Variable Attributes

6.2.4 Dependent Variables

The dependent variables for this study will be Financial Performance, Customer Service Quality and Innovation. Anything that above the theoretical mean of 3.0 indicates that it contributes to this result.

Q7	Financial performance	Mean	Std. Dev.	Rank
1	Over the past five years the unitary manufacturing costs reduced.	3.1650	.82957	7
2	Delivery deadlines and responsibility improved.	3.6311	.68586	1
3	Production volume is flexible to change.	3.5825	.69345	2
4	Supply cycle shortened.	3.4078	.73347	6
5	Over the past five years our financial performance has exceeded our competitor's performance	3.5243	.83835	5
6	Over the past five years or profitability has exceeded our competitor's profitability	3.5437	.77683	3
7	Over the past five years, our revenue growth rate has exceeded our competitor's growth rate.	3.5437	.78935	3
		3.485		
Q8	Quality	Mean	Std. Dev.	Rank
1	The performance of our products.	4.0388	.60912	5
2	Conformance to specifications of our products.	4.0874	.62789	3
3	Reliability of our products.	4.0987	.65548	2
4	Durability of our products.	4.0485	.67706	4
5	The overall product quality performance.	4.1068	.64035	1
		4.078		

Q9	Product Innovation	Mean	Std. Dev.	Rank
1	The level of newness (novelty) of our firm's new products.	3.4951	.79055	2
2	The use of the latest technological innovations in our new products.	3.6505	.78850	1
3	The speed of our new product development.	3.3883	.79500	4
4	The number of new products our firm has introduced to the market.	3.3981	.78390	3
5	The number of our new products that is first-to-market (early market entrants).	3.3495	.90433	5
		3.4563		
Q10	Process Innovation	Mean	Std. Dev.	Rank
	The technological competitiveness of our company.	3.6602	.79894	1
	The speed with which we adopt the latest technological innovations in our processes.	3.4757	.86142	3
	The level of newness (state-of-the-art) of the technology used in our processes.	3.5146	.81486	2
	The rate of change in our processes, techniques and technology.	3.4660	.83801	4
		3.529		
Q11	Business Systems Innovation	Mean	Std. Dev.	Rank
	Our ability to penetrate new markets.	3.7087	.77499	1
	Our ability to obtain new sources of supply.	3.6408	.73903	3
	Our success in seeking new ways of organizing our business.	3.6796	.80700	2
		3.676		
	Total Mean for Innovation (Product, Process & Business System)	**3.554**		

Table 15: Dependent variables

6.2.5 Cross Tabulation

For this research study cross-tabulation is used to tabulate the results against each other of two or more variables. In general, it shows the overall picture if the variables interrelation. The results from this analysis usually used to present gap analysis (Singh, 2007). For this research, Contingency Coefficient was used to see the correlation between the variables. Contingency Coefficient is Chi Squared distribution based measure of the relationship between 2 variables. Contingency Coefficient also used instead of Cramer's V or Phi because the data is generated from 4x5 tables or rectangular table shape. The Cramer's V is use for 2x2 tables. Plus, the Contingency Coefficient is used to test the strength between two variables. It interprets as same ways like Cramer's V, it varies from 0 to 1, and where 0 is signifies complete independence (Singh, 2007).

- **Cross tabulation between TQM elements and Financial Performance**

According to Singh (2007) the higher is the value of the Contingency Coefficient the higher will be the correlation between the variables. Based on the data, the Strategic Planning in TQM has the highest correlation with the Financial Performance with the score of 0.455 in the contingency plan.

Variables (nominal scale)	Value (Contingency Coefficients)	P-value	Pearson	Spearsman Correlation	Rank
Management Leadership	0.421	.000	0.329	0.324	3
People Management	0.389	.000	0.284	0.234	5
Customer Focus	0.444	.000	0.288	0.267	2
Strategic Planning	0.455	.000	0.365	0.314	1
Process Management	0.388	.000	0.184	0.195	6
Information Analysis	0.391	.000	0.228	0.234	4

Table 16: Cross tabulation between TQM elements and Financial Performance

- **Cross tabulation between TQM elements and Customer Service Quality Performance**

Based on the table 17, it is stated that Customer Focus plays the most important role in the relationship between TQM elements and Customer Service Quality Performance. Second is Process Management, followed by Management Leadership.

Variables (nominal scale)	Value (Contingency Coefficients)	P-value	Pearson	Spearsman Correlation	Rank
Management Leadership	0.358	.000	0.090	0.184	3
People Management	0.351	.000	0.40	0.61	4
Customer Focus	0.376	.000	0.178	0.230	1
Strategic Planning	0.272	.000	0.045	0.70	6
Process Management	0.365	.000	0.178	0.210	2
Information Analysis	0.348	.000	0.40	0.53	5

Table 17: Cross tabulation between TQM elements and Customer Service Quality Performance

- **Cross tabulation between TQM elements and Product Innovation**

Based on table 18, it is stated that Information and Analysis is play the most importance role in the relationship between TQM elements and Product Innovation Performance. Second is Process Management, followed by Strategic Planning.

Variables (nominal scale)	Value (Contingency Coefficients)	P-value	Pearson	Spearsman Correlation	Rank
Management Leadership	0.369	.000	0.284	0.268	5
People Management	0.340	.000	0.247	0.248	6
Customer Focus	0.381	.000	0.307	0.327	4
Strategic Planning	0.384	.000	0.361	0.353	3
Process Management	0.456	.000	0.443	0.426	2
Information Analysis	0.520	.000	0.500	0.484	1

Table 18: Cross tabulation between TQM elements and Product Innovation

- **Cross tabulation between TQM elements and Process Innovation**

Based on table 19, it is stated that Process Management is play the most important role in the relationship between TQM elements and Process Innovation Performance. Second is People Management, followed by Customer Focus.

Variables (nominal scale)	Value (Contingency Coefficients)	P-value	Pearson	Spearsman Correlation	Rank
Management Leadership	0.351	.000	0.40	0.61	4
People Management	0.377	.000	0.254	0.271	2
Customer Focus	0.372	.000	0.213	0.251	3
Strategic Planning	0.303	.000	0.155	0.185	6
Process Management	0.393	.000	0.226	0.294	1
Information Analysis	0.347	.000	0.117	0.165	5

Table 19: Cross tabulation between TQM elements and Process Innovation

- **Cross tabulation between TQM elements and Business Systems Innovation**

Based on table 20, it is stated that Process Management is the most influential element in the relationship between TQM elements and Business Systems Innovation Performance. Second is People Management, followed by Customer Focus.

Variables (nominal scale)	Value (Contingency Coefficients)	P-value	Pearson	Spearsman Correlation	Rank
Management Leadership	0.351	.000	0.40	0.61	4
People Management	0.377	.000	0.254	0.271	2
Customer Focus	0.372	.000	0.213	0.251	3
Strategic Planning	0.303	.000	0.155	0.185	6
Process Management	0.393	.000	0.226	0.294	1
Information Analysis	0.347	.000	0.117	0.165	5

Table 20: Cross tabulation between TQM elements and Business Innovation

6.3 Discussions

Based on the Results analysis above it can be concluded that all the questions that used in the survey is well trusted and reliable. This is due to the high reliability test for all independent variables and dependent variables. All the data show as high as 0.8 Cronbach Alpha data which showing that all the questions are trusted.

As for respondent profile, the responses are analyzed based on the nationality, gender, age, education, number of years with the company, department, position and quality award of the company. In terms of the nationality, most of the respondents are Indian. The respondents are mostly male as the nature of the business is Airline industry. Therefore, it is difficult to get

balanced gender for this research. Most of the respondents 'age is between 30-39 and 21-29 years old. Despite the fact the majority of the sample participated in the research is young generation, most of the respondents possess at least bachelor degree and most of the respondents are from operations department.

Based on the analysis of the Independent variables attribute, it can be indicated that all independent variables are exceed the average scores 3.0. Therefore, the result indicates that respondents agree about the interaction between TQM and some organizational performances. Strategic Planning become the most important variable with the highest score (4.105) and People Management score the lowest point (3.099).

All dependent variables are also exceeded the average scores 3.0. Between the independent variables and dependent variables that have been crossed it shows a pattern of information. As such, the Strategic Planning in TQM has the highest correlation with the Financial Performance with the score of 0.455 in the correlation factors. The Information and Analysis is in the significant correlation with the Customer Service Quality Performance. Second is Process Management, followed by Information and Analysis. The most influential element on the Process Innovation is the Process Management, second is People Management, followed by Customer Focus. The same results indicated for the correlation between Business Systems Innovation and Process Management.

Based on the above analysis it is stated that all hypothesis are acceptable and this six TQM elements has direct relationship with Financial Performance, Customer Service Quality Performance, Product Innovation, Process Innovation and Business Innovation. Therefore no null hypothesis is acceptable.

6.4 Summary

In conclusion, five hypothesis defined in this research were supported and valid. Based on the significance of the dependent and independent variables the developed conceptual framework was finalized and improved. This model is presented in the Figure 15. Yet the further analysis on the MANOVA or multivariate analysis of variances is recommended for this study as a way to test the hypothesis that one or more independent variables, or factors, have an effect on a set of two or more dependent variables.

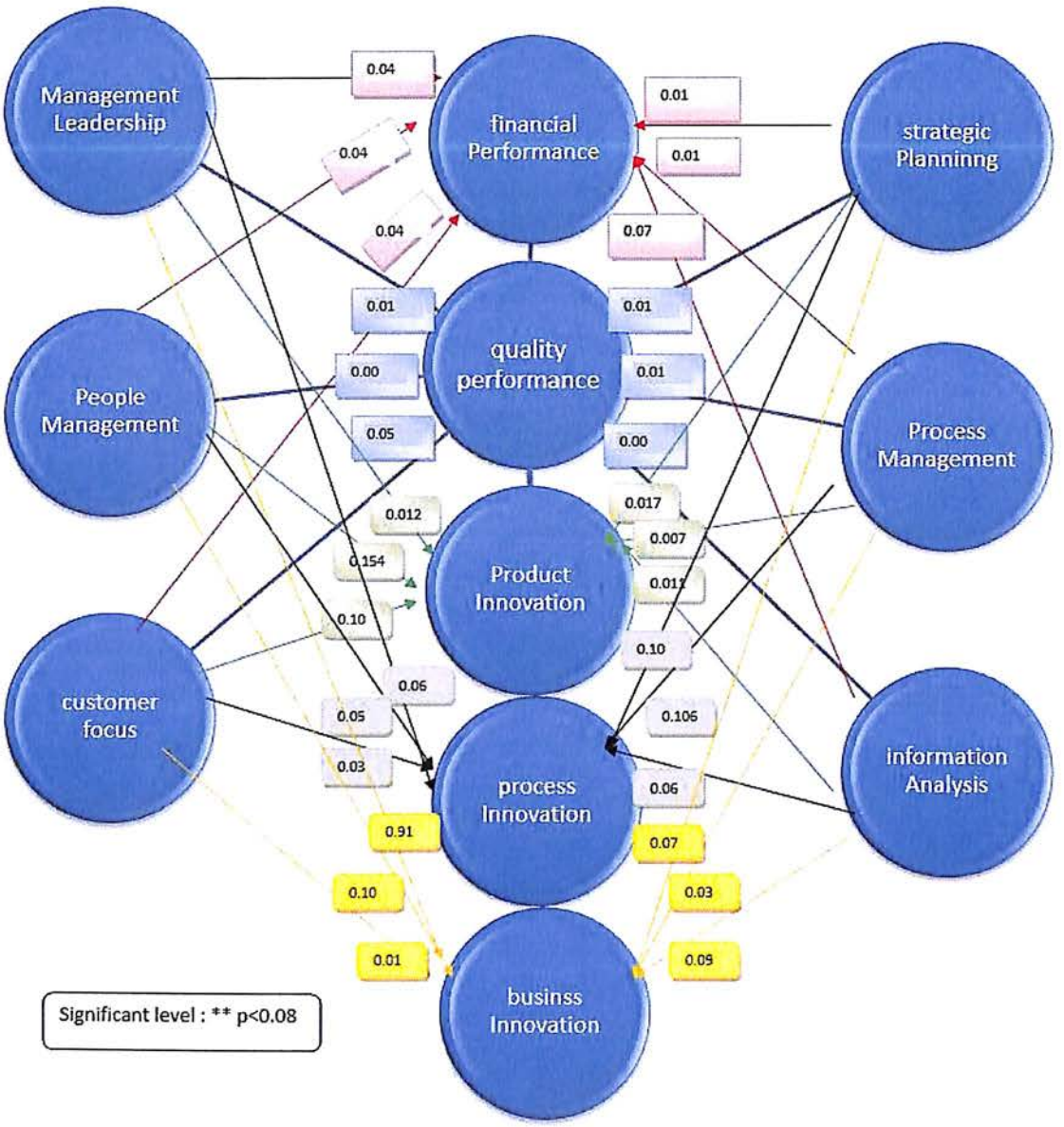

Figure 15: Finalized Conceptual Framework

7 Conclusion and Limitations

7.1 Introduction

In this final chapter, a summary of this research is first provided. Then the conclusion of the current study on the relationship between TQM and financial, customer service quality and innovation and the practice contributions are highlighted. Finally, study limitations of this research and some recommendations for the company are presented.

7.2 Conclusion

This research is mainly based on the results of the survey performed in UAE Airline Company. The major aim of this research is to test the interaction of the TQM practices and financial, customer service quality and innovation performances. A theory discussion is made to complete this research in the Results and Discussions section.

This research confirms the correlation between six TQM practices and financial, customer service quality and innovation performances. TQM has the major impact on customer service quality performance but also has a positive relationship with organization's financial benefits and innovation. However, we should not be misguided by this result. The positive relationship cannot affirm that all the practices are in line with this organizational performance measurements. A further exploration on the multivariate analysis of variances is required.

Sub groups of the dependent variables were defined and presented as Financial Performance, Customer Service Quality, Product Innovation, Process Innovation and Business Systems Innovation. According to the survey results, TQM as the construct consisting of six elements has the relationship with each of the organizational performances. The 5 Hypothesis were tested and results revealed that there is the significant relationship between the TQM elements and five associated variables.

The survey results also reveal that the different practices show different relationship with organizational performances. Not only the TQM practices but also the financial, innovation and quality performances in organizations are correlated according to the results. Companies that achieve good performance in customer service quality also tend to achieve good performance in innovation that leads to the increase of market share and profitability.

Due to the globalization, today's market becomes more and more rigorous and turbulent. In such an environment, financial stability, customer service quality and innovation are critical

for business success. Organizations need to be ambidextrous in order to gain competitive advantages in market. The findings of this research can help organizations in fulfilling this task. The original aim of TQM implementation is the customer service quality improvement. However, the research proves that the innovativeness and financial performance of the company also enhanced. Next section will provide with some recommendations to the company based on the each element or input interaction with dependent outcomes.

7.3 Recommendations

The data in Figure 16 shows the mean-variance relationship for TQM. The weakest part in the TQM for studied company is the People Management. Therefore, the company should take an action to improve this element. Other practices are between 'top-down' and 'bottom-up' flow and must be well monitored in order to increase the performance in People Management area. Other areas are well developed where the mean are quite high. The highest mean that give the highest impact on TQM is the Strategic Planning. From the survey done, it was indicated that respondents give a higher rate to the Strategic Planning element at most of the time. However, the weakest part is regarding the policies and objective development for Information and Analysis element that not too shared with all community.

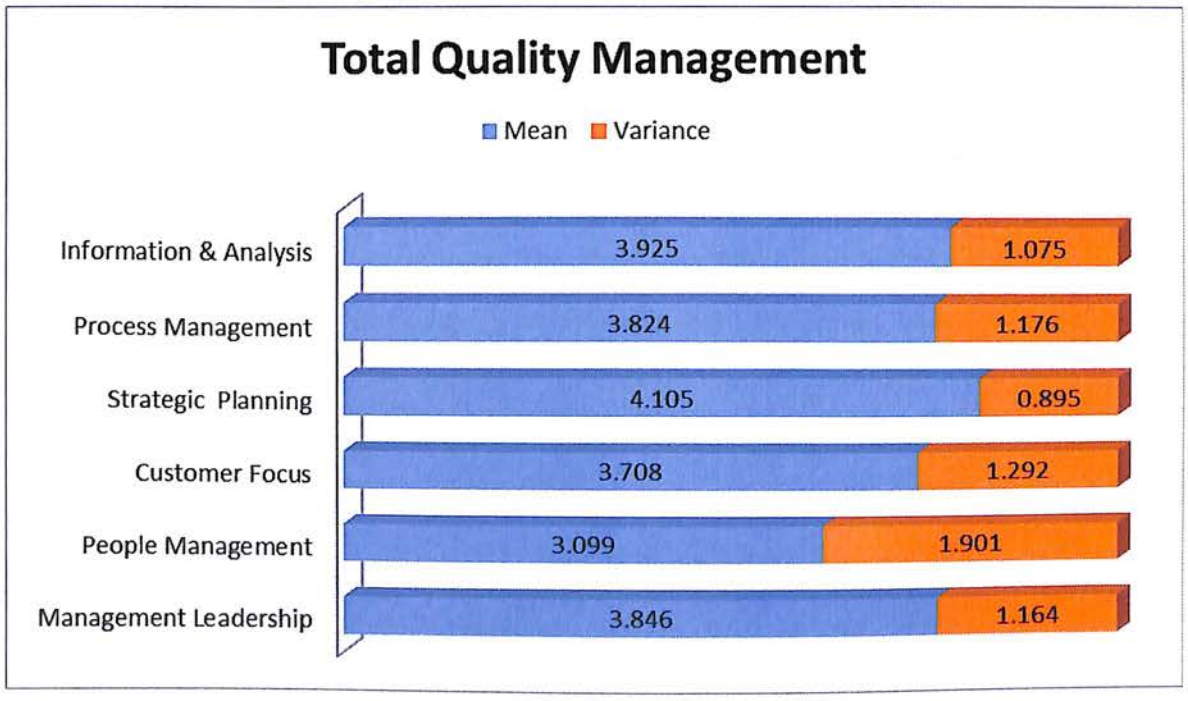

Figure16: Total Quality Management

In the future, it is suggested that, more and more collaboration taken between the top management and the staff. Between the Strategic Planning and the People Management

elements, there are other elements such as Management Leadership, Customer Focus, Process Management and Information Analysis.

For Management Leadership, the weakest part is that the staff feels like there is barrier between individual and department manager in the organization. Therefore, it is suggested that staff empowerment is needed to fill in the gap. It is also suggested that employees has an opportunity to share with their ideas in the implementation of changes.

For Customer Focus, the weakest area is where the staff believes that the customers are not involved in the product design processes. The respondents also believe that the company has an effective process for resolving customers' complaints. Therefore, it is suggested that more opportunities will be provided for the customers to bring their preferences to the company.

For Process Management, the weakest area is that adjustment to the extensive use of SPC to improve the processes and to reduce variation. Besides, the respondents believe that the company should better establish long-term relationships with suppliers. For Information Analysis, the weakest area is outdated information of company performance which is not always readily available for those who need them. Therefore, it is suggested that more improvements will be done in IT department for the use of all staffs. After all weakest part will be changed the gap between mean and variance can be reduced.

Based on the figure 17 the strongest element from the view of respondents among the dependent variables is Customer Service Quality Performance. The weakest element is Product Innovation. The weakest part in Product Innovation is that the respondent believes that the product is not so early in the market. The respondent also believes that the speed of the new product development is slow. Therefore, the company should take into consideration the speed of the product development by improving the Research and Development Department as well as their introduction in the market.

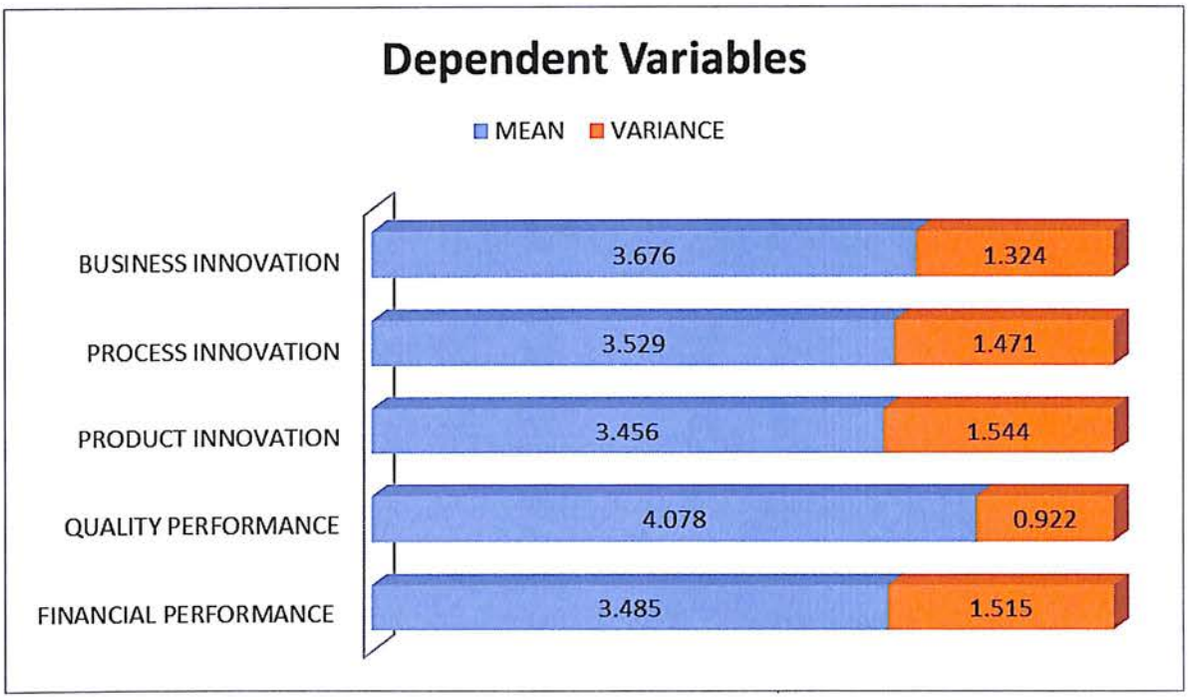

Figure 17: Dependent Variables

The weakest point in the Financial Performance is supply chain management and the manufacturing cost where the respondents not so agree in this statement. Therefore, it is suggested that the company need to align more on marketing part for better coping the industrial customers.

The strongest area in dependent variables is Customer Service Quality where the strongest point is the overall product quality performance itself. The weakest part in Process Innovation is the rate of change in the processes, techniques and technology. On the other hand, the weakest part for Business System Innovation is the ability to obtain new sources of supply where it was rated the lowest by the respondent.

In conclusion, the research has shown the interaction between all elements of TQM and financial, customer service quality and innovation performance. Based on the study conducted it will be possible for future enhancements of the model and the survey questionnaire in order to test the significance of the relationship in other industries as well.

7.4 Study Limitations

In doing this study there have been several limitation that were accounted particularly in the sphere of:

a) Time constraints

With reference to accurate data, a time spent to gather all the information needed for research purpose is limited.

b) Cooperation

It is impossible to get 100% cooperation from the respondents. Some of them are might be unwilling to answer the survey questions accurately and honestly, or even some respondent totally refuse to answer. In addition, there might be bias during answering the questionnaire.

c) Cost Constraint

The constraint in term of cost will never ever be denied since it will involve a lot of money. The author will do the research on his own and it is hard to get 100% sponsorship from the studied company. It is because the research will be done as the need of the degree fulfillment and not the company requirement.

d) Scope of the study

The research covers area only in one company. In the future, it is suggested that more companies in the same industry or other industries are involved in the research. Respondents' number can be increased in the future to get better understanding of the research. The TQM as the construct was tested based on the six commonly used practices. However, the conceptual framework can be supplemented with more practices to test the correlation of the extended TQM framework with the financial, customer service quality and innovation performances.

e) Additional SPSS Analysis

For the further research it is suggested to use the multivariate analysis of variances (MANOVA) to test the hypothesis with one or more independent variables, or factors and their effect on a set of two or more dependent variables. This is because none of the individual independent variables may produce a significant main effect on the Dependent Variables, but in combination they might, which suggests that the variables are more meaningful when taken together than considered separately.

f) Analysis of the financial statement of the company

It is suggested that in addition to the qualitative research some analysis for the five years data set is taken into consideration to measure the influence of TQM on the financial performance of the company.

Case study research has several advantages including applicability to new areas where theory development is in the early stages and in tightly linking theory with real-world data. Further,

the method allows for in-depth analysis and detailed descriptions of the underlying reasons behind the phenomena being examined. Also, the process is flexible and allows for 'real time adjustments' to the method to explore concepts revealed during the study.

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Appendices

Appendix 1: Study Questionnaires

Following table explains Questionnaires utilized during this research and factors considered for its formulation and construction through SurveyMonkey website:

Study Title

A study on Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry

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Purpose of this Study

The purpose of this study is to evaluate Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) in Airline Industry for Etihad Airways

Procedures

You will be asked to participate in online survey and answer questions regarding Financial, Customer Service and Innovation performance improvement through Total Quality Management (TQM) for the company. The estimated duration of this survey is approximately 15 minutes.

Participant Requirements

Participant should be an employee of the company that implemented Total Quality Management system and incorporates quality principles in the daily business operations activities.

Risks

The risks and discomfort associated with participation in this research are no greater that those ordinarily encountered in daily working life or during a conversation with a co-worker

and colleagues. The reasonably conceivable risks or discomforts are that questions assessing your experiences with your job, life, and adjustment to the conditions in the host country may induce anxiety and stress.

Benefits

There may be no personal benefit from your participation in the study but the knowledge received may be of value to the company and the humanity as a whole.

Cost

As this is Online Questionnaire, so this will be no cost impact on your participation.

Confidentiality

By participating in the study, you understand and agree that the University of Petroleum and Energy Studies, Dehradun, India may be required to disclose you consent form, data and other personality identifiable information as required by law, regulation, subpoena and court order. Also, you will not disclose company information to any third party for use other than this survey requirements.

Otherwise, you confidentiality will be maintained in the following manner:

Your data and consent form will be kept separate electronically. You consent form will be stored in a password protected online survey portal and will not be disclosed to any third party. By participating, you understand and agree that the data and information gathered during this study may be used by the University of Petroleum and Energy Studies and published. However, you name, address, contact information and other direct personal identifiers in your consent form will not be mentioned by the University of Petroleum and Energy Studies in any such publication or dissemination of the research data and/or results.

Rights

Your participation is voluntary and you can nominate relevant person in your place. You are free to stop your participation at any point in time. Refusal to participate or withdrawal of your consent or discontinued participation in the study will not result in any penalty or loss of benefits or rights to which you might otherwise be entitled. The researcher may at his discretion remove you from the study for any of a number of reasons. In such an event, you will not suffer any penalty or loss of benefits or rights which you might otherwise be entitled.

Right to Ask Questions & Contact Information

If you have any questions about this study, you should feel free to ask them now. If you have any questions later, desire additional information, or wish to withdraw your participation please contact the researcher by email or phone in accordance with the contact information listed on the first page of this consent.

***Voluntary Consent**

By clicking "Yes", you agree that the above information has been explained to you, all your queries and questions have been answered and you agree to participate in this research study.

☐ **Yes** ☐ **No**

General Information

Name	
Company	
Email	
Nationality	

Are you male or female?

☐ Male
☐ Female

Which category below includes your age in years?

☐ 17 or Younger
☐ 18-20
☐ 21-29
☐ 30-39
☐ 40-49
☐ 50-59
☐ 60 or older

What is your highest level of education?

- ☐ Less than high school degree
- ☐ High school degree or equivalent diploma (e.g., GED)
- ☐ Bachelor degree
- ☐ Master degree
- ☐ PhD
- ☐ Others (please specify)

  _____

How long have you been working for this company in years?

- ☐ 0-2 years
- ☐ 2-5 years
- ☐ 5-10 years
- ☐ 10-15 years
- ☐ 15 years & above

Which department do you work in?

- ☐ Accounting
- ☐ Marketing
- ☐ Operations
- ☐ Human Resources
- ☐ Sales
- ☐ Finance
- ☐ Legal
- ☐ IT
- ☐ Engineering
- ☐ Planning

☐ Business Intelligence

☐ Reliability Engineering

☐ Public Relations

☐ Administration

☐ Others (please specify)

Job position?

Is the company certified to any of the following quality systems (or has been awarded with any of international quality award?

☐ ISO

☐ MBNQA

☐ Deming Prize

☐ EFQM

☐ Non of the above

☐ Others (please specify)

Part A: Management Leadership (Rating 1=Strongly Disagree and 5=Strongly Agree)

Statements	1 Strongly Disagree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree
Senior executive share similar beliefs about the future direction of this organization.	☐	☐	☐	☐	☐

Senior managers actively encourage change and implement a culture of improvement, learning and innovation in pursuit of 'experience'.	☐	☐	☐	☐	☐
Employees have the opportunity to share in and are encouraged to help the organization to implement changes.	☐	☐	☐	☐	☐
There is a high degree of purpose in our company and we have eliminated barriers between individuals and/or departments.	☐	☐	☐	☐	☐
Part B: People Management (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor Disagree**	**4 Agree**	**5 Strongly Agree**
We have an organization-wide training and development process including career path planning for all our employees.	☐	☐	☐	☐	☐
Our company has maintained both 'top-down' and 'bottom-up' communication processes.	☐	☐	☐	☐	☐
Employee satisfaction is formally and regularly measured.	☐	☐	☐	☐	☐

Employee flexibility, multi-skilling and training are actively used to support performance improvement.	☐	☐	☐	☐	☐
We always maintain a work environment that contributes to the health, safety and well-being of all employees.	☐	☐	☐	☐	☐
Part C: Customer Focus (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor Disagree**	**4 Agree**	**5 Strongly Agree**
We actively and regularly seek customer inputs to identify their needs and expectations.	☐	☐	☐	☐	☐
Customer needs and expectations are effectively disseminated and understood throughout the workforce.	☐	☐	☐	☐	☐
We involve customer in our product and service design processes.	☐	☐	☐	☐	☐
We always maintain a close relationship with our customers and provide them an easy channel for communicating with us.	☐	☐	☐	☐	☐

We have an effective process for resolving customers' complaints.	☐	☐	☐	☐	☐
We systematically and regularly measure customer satisfaction.	☐	☐	☐	☐	☐
Part D: Strategic Planning (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor Disagree**	**4 Agree**	**5 Strongly Agree**
We have a mission statement which has been communicated throughout the company and is supported by our employees.	☐	☐	☐	☐	☐
We have a comprehensive and structured planning process which regularly sets and reviews short and long term goals.	☐	☐	☐	☐	☐
When we develop our plans, policies and objectives we always incorporate the needs of all stakeholders including customers and the community.	☐	☐	☐	☐	☐
Cheap data warehousing to access data.	☐	☐	☐	☐	☐
We have a written statement of strategy covering all business operations which is articulated and agreed to by our Senior	☐	☐	☐	☐	☐

Managers and Top Management.					
Part E: Process Management (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor Disagree**	**4 Agree**	**5 Strongly Agree**
We design business processes in our company to be 'fool proof' (preventive-oriented).	☐	☐	☐	☐	☐
We have clear, standardized and documented process instructions which are well understood by our employees.	☐	☐	☐	☐	☐
We make expensive use of statistical techniques (e.g., SPC) to improve the processes and to reduce variation.	☐	☐	☐	☐	☐
We strive to establish long-term relationships with suppliers and customers.	☐	☐	☐	☐	☐
We have supplier rating system to select our suppliers and monitor their performance.	☐	☐	☐	☐	☐
Part F: Information & Analysis (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor**	**4 Agree**	**5 Strongly Agree**

			Disagree		
Our company has an effective performance measurement system to track overall organization performance.	☐	☐	☐	☐	☐
Up to date data and information of company performance are always readily available for those who need them.	☐	☐	☐	☐	☐
Senior management regularly meets to review company performance and use the information as a basis for decision making.	☐	☐	☐	☐	☐
We are engaged in an active competitive benchmarking program to measure our performance against the 'best quality practice' in the industry.	☐	☐	☐	☐	☐
Part G: Financial Performance (Rating 1=Strongly Disagree and 5=Strongly Agree)					
Statements	**1 Strongly Disagree**	**2 Disagree**	**3 Neither Agree nor Disagree**	**4 Agree**	**5 Strongly Agree**
Over the past five years the unitary manufacturing or service costs reduced.	☐	☐	☐	☐	☐
Deliver deadlines and	☐	☐	☐	☐	☐

responsibility improved.					
Production or service volume is flexible to change.	☐	☐	☐	☐	☐
Supply cycle shortened.	☐	☐	☐	☐	☐
Over the past five years our financial performance has exceeded our competitor's performance.	☐	☐	☐	☐	☐
Over the last five years our profitability has our competitor's profitability.	☐	☐	☐	☐	☐
Over the last five years our revenue growth rate has exceeded our competitor's growth rate.	☐	☐	☐	☐	☐
Part H: Quality (Rating 1=Worst in industry and 5=Best in industry)					
Statements	**1**	**2**	**3**	**4**	**5**
The performance of our products or services.	☐	☐	☐	☐	☐
Conformance to specifications of our products or services.	☐	☐	☐	☐	☐
Reliability of our products or services.	☐	☐	☐	☐	☐
Durability of our products or services.	☐	☐	☐	☐	☐
The overall product quality	☐	☐	☐	☐	☐

performance.					
Part I: Product Innovation (Rating 1=Worst in industry and 5=Best in industry)					
Statements	**1**	**2**	**3**	**4**	**5**
The level of newness (novelty) of our firm's new products or services.	☐	☐	☐	☐	☐
The use of the latest technological innovations in our new products or services.	☐	☐	☐	☐	☐
The speed of our new product or service development.	☐	☐	☐	☐	☐
The number of new products or services our firm has introduced to the market.	☐	☐	☐	☐	☐
The number of our new products or services that is first to market (early market entrants).	☐	☐	☐	☐	☐
Part J: Process Innovation (Rating 1=Worst in industry and 5=Best in industry)					
Statements	**1**	**2**	**3**	**4**	**5**
The technological competitiveness of our company	☐	☐	☐	☐	☐
The speed with which we adopt the latest technological innovations in our business processes.	☐	☐	☐	☐	☐
The level of newness (state of the	☐	☐	☐	☐	☐

art) of the technology used in our business processes.					
The rate of change in our business processes, techniques and technology.	☐	☐	☐	☐	☐
Part K: Business Systems Innovation (Rating 1=Worst in industry and 5=Best in industry)					
Statements	**1**	**2**	**3**	**4**	**5**
Our ability to penetrate new markets.	☐	☐	☐	☐	☐
Our ability to obtain new sources of supply.	☐	☐	☐	☐	☐
Our success in seeking new ways of organizing our business.	☐	☐	☐	☐	☐

Table 21: Online survey questionnaires