

**EFFECT OF TOTAL QUALITY MANAGEMENT PRACTICES ON
COMPETITIVE ADVANTAGE OF TRANSPORT AND LOGISTICS
FIRMS IN MOMBASA COUNTY, KENYA**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION,
SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

2016

DECLARATION

This is my original work and has not been presented for a degree award in any other university.

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ACKNOWLEDGEMENT

I wish to offer my accreditation to Almighty God for His unending aid and leadership in this study. I wish also to appreciate my supervisor Dr. Stephen Odock for the guidance and admonition given while undertaking this study. I also wish to acknowledge my family too; my friends and colleagues, and all those who supported me carry out this project.

DEDICATION

I dedicate this research project to my family members and all those who have assisted me directly or indirectly in compiling this proposal. To you all I say thank you.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA- Analysis of Variance

RBV- Resource Based View

SPSS- Statistical Package for Social Sciences

TQM- Total Quality Management

ABSTRACT

TQM is a significant system of management for uninterrupted improvements to bring about competitive advantage. Today customers are insisting for quality in products and services. A company that meets such demands gains competitive advantage over competitors. The main objective of this study was to investigate the effect of total quality management on competitive advantage in transport and logistics firms in Mombasa County. The study employed a cross-sectional descriptive survey design which was considered as the most appropriate time horizon because information was gathered at a particular point in time or over a short time span. The target population 61 transport and logistics firms in Mombasa County and due to the small size of this population, there was no sampling hence the study was a census survey. A semi structured questionnaire was the main data collection instrument. An aggregate of 61 questionnaires were circulated among the study population, of which 43 of the respondents managed to provide feedback on the questionnaires, representing 72% response rate which was considered adequate. Data analysis with the help of SPSS produced descriptive statistics and correlation results. The results showed that customer focus has been implemented to a great extent followed by leadership and top management commitment while learning organization and teamwork and employee commitment have been implemented to a small extent. Overall, TQM has been adopted to a moderate extent and the impact of TQM on competitive advantage is also moderate. The study recommends that managers should look at TQM as a management principle that is more than leadership, customer focus, systems, organization culture, team work, supplier relationship or training. It is a combination of all the TQM practices and successful implementation implies that effort and endurance are compulsory to find harmony for each organization.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Today customers are claiming for quality in products, services and in life. They have turned out to be progressively perceptive and have begun searching for choices more tuned in to their essential needs, prerequisites and self-regard. In fact, they are ready to incur additional costs for a quality product or service (Yildirim, 2012). A company that meets such demands gains competitive advantage over competitors. Ultimately, competitive advantage implies superior financial performance through cost leadership (being a cost leader) and differentiation (undertaking in various activities) (Porter, 1998). The best approach that seems to address the challenge is the management philosophy of total quality management. Thus, total quality management (TQM henceforth), is a significant system of management for gradual improvements on firms performance focused on quality, in light of the interest of every member and striving for success in the long run customer satisfaction, that in turn relates to gains internally to organization members and externally to the society as a whole.

The need for TQM in organizations has been spelled out in various theories. Systems theory brings out a general perspective structure for observing a firm whose implication is that activities in an organization cannot be viewed in isolation but as a whole in order to create synergy, interdependence and interconnections (Mele, Pels & Polese, 2010). Market based theory of competitive advantage implies delivering value to customers at a low cost (Porter, 1998). Customer needs are important when formulating market strategy. Thus comes the development of competitive advantage essentially out of the value a firm

is capable of generating for its clients which surpasses the company's production cost. Lastly, resource based view (RBV) proposes that competences are a vital contributor to competitive advantage (Bharadwaj, 2000; Teece, 2007; Tippins & Sohi, 2003). A firm will achieve competitive advantage when it engages its resources in ventures that boost the efficiency or effectiveness in service delivery.

Mombasa is termed as 'Mlango wa Kenya' as a way of explaining its importance of being the hub of the country's resources via the port through exportation and importation of goods and services. As a result, transport and logistics industry has evolved to cater for this purpose as a means of creating convenience of hauling goods and services to and from the Port terminals to various destinations around East Africa. Facing challenges, the transport and logistics industry is under pressure from the rising levels of traffic due to limited infrastructure, leading to port congestion and increase in costs of delays which translates to higher cost of goods and services hence loss of customers in the long run. There are about 61 transport and logistics firms based in Mombasa County and they will form the population of the study.

1.1.1 Total Quality Management

TQM is a comprehensive management approach and a fundamental part of high-level strategy; it works beyond all divisions involving each and every member of staff, and stretches out in reverse and forward to incorporate the supplier and the customer chain. TQM insists on learning and adaptation to progressive change as keys to organizational success (Evans & Dean, 2000). According to Lee and Chang (2006), another definition of

TQM can be as a macro management philosophy, that goes for continuous improvement in all elements of the firm to produce and convey goods and services as per the requirements of the customer or their prerequisites in a superior way, which is less costly, quicker, more secure and simpler route, in comparison to other players, with the cooperation across departments working under the initiative of senior management.

The TQM practices this study will be considering are leadership and top management commitment, learning organization, teamwork and employee commitment, customer focus, Innovation, information and analysis, long-term supplier relationship and quality focus as per past studies such as Reed et al. (1996), Teece (2010), Day (1994), Yildirim (2012), Reed et al. (2000) and Govindarajan, Kopalle, & Danneels (2011).

1.1.2 Competitive Advantage

Competitive advantage means managing costs/cost leadership involving efficiency, time management, reduced wastage and differentiation (engage in numerous activities; develop new products) to increase income. The idea behind competitive advantage is to counter competition by offering superior products and services that adds value to customers (Bon & Mustafa, 2013). Competitive advantage denotes the relative higher position in the market that leads to a firm to surpass its rivals in terms of revenues. Competitive advantage is the result of an approach that creates strategy that generates augmented value for an organization, compared to its competition, and viability is there as long as the increased value remains when rivals quit attempting to mimic the advantage (Barney, 1991; Bon & Mustafa, 2013).

Competitive advantage is a huge and all-round concept, covering approaches as varied as infrastructure, labor skills, innovation in technology and quality, bureaucracy and others. Logistics and facilitation have a vital part to play in increasing an organization's competitiveness, by decreasing costs of transactions and increase the integration of a firm in country, regional and world trade. Achieving a seamless logistics process reduces import costs. It is also pivotal that suppliers are able to participate in worldwide production circles and finally expand into new ventures. Enhancing logistics includes several aspects: improvement of logistics capabilities, the advancement of the physical infrastructure, and the streamlining of trade related procedures (Athman, Kabanguka & Murithi, 2003; World Bank, 2003, 2004).

1.1.3 Total Quality Management and Competitive Advantage

TQM is looked at as the foundation of competitive advantage (Powel, 1995; Hackman & Wageman, 1995; Douglas & Judge, 2001). It lets firms to operate at a more competitive level and fulfill the needs of its consumers, while minimizing production costs and wastes hence increasing quality of the end product. This translates to happy and satisfied customers hence gaining competitive edge through a larger market share (Han, Chen & Ebrahimbou, 2007). Organizations should look to retain their customers through better quality products at a decent price to survive in the competitive market.

Quality improvement has grown to become one of the most fundamental strategies for gaining competitive over rival firms. Consumers tastes and preferences are ever changing, hence a firm needs to keep up with its environment to convey the quality

required in the goods and services to the final consumer (Gharakhani, Rahmati, Farrokhi & Farahmandian, 2013). Consistent improvement, attaining satisfaction of customers and open culture are the major goals of TQM and it enhances competitive advantage as well as overall organizational performance (Kaynak, 2003; Kim, Kumar, & Kumar, 2012; Prajogo & Sohal, 2003). Due to this, the liaison between TQM and competitive advantage could regulate the success and downfall of an organization. Importance of the relationship between TQM practices emerges from the importance of TQM in creating and strengthening competitive advantage. It also affects customer satisfaction which is the main goal of organizations such as transport logistics firms (Pekovic & -Galia, 2009; Mushtaq, et al., 2011).

1.1.4 Transport and Logistics Firms in Mombasa County

Quite a substantial percentage of Kenya's economy depends on the transport and logistics industry whose focal point is at the Port of Mombasa hence focus should be on improving, promoting and sustaining efficient, affordable and effective transportation systems to ensure smooth operations for the foreseeable future (Northern Corridor Transport Improvement Project, Ministry of Roads Kenya). Although transport and logistics plays a key role in an economy, economic growth places a lot of pressure on existing infrastructure. In many African countries including Kenya, infrastructure is underdeveloped and growth in the economy results in substantial pressure on the existing natural and manmade infrastructure (Netherlands-African Business Council, 2014). Mombasa port is presently Kenya's main port and congestion and constraints in capacity bring about delays. Additionally, Ruske and Kauschke (2013) observe that challenges at

ports including transport and logistics firms are efficiency of procedures and the airports management.

The transport and logistics industry in Mombasa has been growing by the day – It started small as family businesses with a number of trucks and boosted by the growth and development of the Mombasa Port, it opened up ventures for more entrepreneurs to join in the growing business to satisfy the demand in the market. Developments proposed in the port of Mombasa for example construction of a third container terminal and new developments for oil and gas docks, imply need for logistics solutions, storage; IT based interventions, other solutions.

The efficiency of moving goods is progresses through improved techniques and management principles in the logistics involved in transporting products, delivery speed, cost of transportation and energy saving. Manipulation of logistic is highly dependent on transportation. When a review of the present condition is done, a viable system requires a clear-cut structure of logistics and appropriate transportation equipments and less wasteful procedures to link the process from start to end flawlessly (Tseng & Yue, 2005; Tilanus, 1997).

1.2 Research Problem

Companies have faced challenges of dealing with scope global market place and its chain of supply while employing flexibility and speed, eliminating time, materials and effort wasted from all points in the chain of supply and meet customers' needs without holding

high stock levels. In order to bring about such issues, firms can make use of various tools and business philosophies to expedite improvements across business functions. TQM principle is one such business philosophy (Manrodt & Vitasek, 2008).

Kenya's transport infrastructure is under pressure from the rising levels of traffic both on rail and road (Kenya Shippers Council, 2014; Wasike, 2001). At the same time, limited maritime infrastructure and poor inland infrastructure are under immense pressure from the massive increase in imports and exports. The existing logistics operations are strained by port congestion, falling reliability levels, a challenged road transport capacity, the inability of railways to meet demand and the ever increasing user's demands for reliable and predictable services (Kenya Shippers Council, 2014). Hence, due to the above challenges, transport and logistics firms in Mombasa must adapt to business improvement programs one of them being TQM.

Furthermore, present studies have provided new insights and various methods from different perspectives into TQM practices. Nevertheless, some inadequacies emerge from these studies. To start with, most of experiential studies such as Jitpaiboon and Rao (2007) and Teh, Yong, Arumugam and Ooi, (2009) on TQM and competitive advantage association have been conducted in manufacturing sector. There is still a gap for more studies on the subject to be undertaken in services industry especially transport and logistics firms (Ang, Lee, Tan & Chong, 2011; Juneja, et al., 2011; Sit, Ooi, Loke & Han, 2011). The past literature established contradicting outcomes; where some found TQM has favorable impact on competitive advantage and innovation (for example Abrunhosa

and Moura E Sá, 2008; López-Mielgo, Montes-Peón, and Vázquez-Ordás, 2009; Martínez-Costa and Martínez-Lorente, 2008; Prajogo & Hong, 2008; Sarkees & Hulland, 2009). Others found it having no influence on competitive advantage and innovation (for example Moura E Sá & Abrunhosa, 2007; Pekovic & Galia, 2009; Santos-Vijande & Álvarez-González, 2007). Reed, Lemak & Montgomery, 2000) and Yildirim (2012) observe that while it is generally an acceptable fact that TQM can result in competitive advantage that is sustainable, there is inadequate theory to reinforce this thinking.

Locally, various studies have been done on TQM in other sectors and not transport and logistics sector. Ondiek, Kisombe and Magutu (2013) did a study on lean operation tools and techniques used in the sugar industries in Kenya and the conclusion was that sugar processing industries in Kenya did not fully understand lean operation concepts and have therefore not reaped the full benefits of lean implementation. Wamweya (2013) studied TQM in the lift Industry and the research objective was to find out aspects that affect the adoption of TQM practices and their perceived performance in the lift firms in Kenya. The study concluded that TQM has a favorable impact on customer's repatronage motives indicating that satisfaction of customers and TQM have a critical part to play in the performance and continuity of any lift company in Kenya.

Notwithstanding some efforts in the area of applicability of TQM practices, there are some inadequacies of methodical empirical evidence in respect to the degree of TQM adoption in the transport and logistics sector and its effect on competitive advantage. This study analyzed the effect of TQM practices on competitive advantage of transport and

logistics companies in Mombasa County. The study focal point was on the following question: What is the impact of TQM practices on competitive advantage of transport and logistics companies in Mombasa County?

1.3 Research Objectives

The main objective of this study was to investigate the effect of TQM on competitive advantage. The specific objectives were;

- i. To establish the extent of adoption of TQM practices by transport and logistics firms in Mombasa County.
- ii. To determine the effect of adopting TQM practices on the competitive advantage of transport and logistics firms in Mombasa County.

1.4 Value of the Study

The study proposed to add to the body of knowledge, specifically in regard to TQM practices in light of the fast changing transport and logistics environment and hopefully rekindle the demand for further research notably looking into competition, technology, innovations, government support and risks and their effects on performance.

The study also supplements the existing literature, and is an invaluable tool for students, academicians, institutions, corporate managers and individuals who want to know more about the TQM management practices nexus. Thus, this study is expected to increase body of knowledge to the scholars on the benefits of TQM practices adoption in the transport and logistics companies and especially make them in touch with the internal and

external factors influencing service quality. In essence, it will assist future scholars, researchers and practitioners in the area of transport and logistics industry best practices and TQM adoption as they will be able to find materials besides areas where they can advance their research on the related subjects.

Policy makers would infer from the study on company initiatives especially the transport and logistics industries in promoting TQM practices to enhance efficiency. The study will enable the policy makers to be aware of the effects of in efficiencies on performance on companies. Moreover, this study will benefit the County Government of Mombasa, especially the Transportation Branch for making policy choices whose comprehensive objectives are to hasten the rate of growth in the transport sector through TQM practices.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature on the subject matter, focusing at the theoretical underpinnings of this study followed by a section on TQM practices. The chapter also looked at the empirical review, research gap and finally summary of literature. Thus, the chapter carried out synthesis of past literature in relation to research objectives and discusses several key empirical studies with other supporting researches on the influence of TQM on competitive advantage.

2.2 Theoretical Review

The debates on the TQM concept and its effect on the firms operations can be discussed in light of two theories in the subject area namely: systems theory, market based theory of competitive advantage and the resource based view (RBV).

2.2.1 Systems Theory

This theory provides a comprehensive viewpoint for observing an organization as a structure with a set of distinct parts standing in inter-relations (Mele, Pels & Polese, 2010). The implication is that activities in an organization cannot be viewed in isolation but as a whole in order to create synergy, interdependence and interconnections internally within the organization and externally with the environment (Meadows, 2008). Thus, the emphasis lays on the connections and the associations between the elements in order to comprehend an organization's structure, how it works and results.

In addition, the theory is applicable in marketing and management and some applications of systems theory in Management target explicitly on education, worth, excellence, environment, relations, adaptation and complication (Mele, Pels & Polese, 2010). Some of the strengths of this theory are that it perceives: inter-connection of staff, influence of environment on firm's structure and effect of outside stakeholders on a firm (Mele, Pels & Polese, 2010). TQM ensures that activities in an organization and in this case transport and logistics firm are viewed as a whole or managing the whole to achieve excellence (Kaynak, 2003). TQM is the organization culture of dedicated to satisfying customers through gradual and consistent improvement.

2.2.2 Market Based Theory of Competitive Advantage

Porter (1998) in his book has described competitive advantage as pivotal to the success of an organization, implying that having low production costs or product differentiation as compared to other players in the industry or market. He also argues that competitive advantage is generated basically from the value a firm develops for its customers which surpasses the production cost. Value arises when products are priced at lower rates than the competitors for equivalent profit or generating unique benefits that counterbalances a higher price. The two basic types of competitive advantage are cost control and diversity/differentiation. This statement points to the need for transport and logistics firms to constantly come up with ways of adding value to customers by decreasing costs. This is the reason why TQM practices come into play to enhance efficiency of service delivery while minimizing costs of delivering the services or goods.

2.2.3 Resource Based View (RBV)

This theory proposes that competences are a significant contributor to organizational performance (Bharadwaj, 2000; Teece, 2007; Tippins & Sohi, 2003). Competences are defined as an organization's ability to accumulate, assimilate and utilize scarce resources (Amit & Schoemaker, 1993); resources comprise assets, competences, processes, firms' traits, information and know how; categorized as human, physical or organizational capital. Grant (1995) defines a pyramid of firm's capabilities, where specialized competences are assimilated into wider useful competences such as manufacturing, IT and marketing capabilities. Functional competences in turn assimilate to form cross-functional abilities such as customer support, innovation, R&D capability, new product development capability among others.

In fact, Barney, Ketchen & Wright (2011) reiterate that RBV of the firm is the foundation upon which competitive advantage and performance can be forecasted. In this scenario, achieving competitive advantage through TQM depends on how well resources are assigned to several activities to address gaps in the market. The emphasis of RBV is on harnessing resources that are intangible particularly human resources to gain competitive advantage over rival firms.

2.3 Total Quality Management Practices

Based on past literature, the research will select on the following seven (7) main practices of TQM implementation for this study: commitment from top leadership and management commitment, learning organization, cooperation and worker commitment

and customer focus, innovation, information and analysis, longstanding supplier relationship and focus on quality. These TQM aspects are discussed in the section below.

2.3.1 Leadership and Top Management Commitment

Subburaj (2005) observes that leadership based on TQM positions the organization way in front of the competition relating to profits, revenues and staff spirit. Leadership is a prerequisite to practicing TQM is that the senior management should firmly believe that TQM is the only way to do business and manage a firm (Subburaj, 2005). Leadership is a precondition to exercising TQM and that the higher level management should resolutely trust that TQM is the only way forward to manage and run a firm (Subburaj, 2005). Leadership is required to emphasize quality and innovation, to describe each team's role and responsibilities and to make final choices concerning resource allocation. Firms without strong governance can have antagonistic relations between functional parts and teams in charge of innovation (Govindarajan, Kopalle, & Danneels, 2011).

2.3.2 Learning Organization

Literature on TQM labels knowledge acquisition as organizational task that increases aptitude and know-how of staff about ideas of quality and tools. Education and training are important in providing staff with new skills and practices essential to apply TQM in the most effective manner (Hackman & Wageman, 1995). Additionally, Reed et al. (2000) advocated that being trained and educated is critical in teaching the ideology of TQM which requires behavioral and attitude adjustment in the employees. In line with

this, Yusuf et al. (2007) observed that being trained in concepts related to quality such as TQM is viewed as the greatest element in developing capacity of employees', bringing out and finding solutions to challenges and endlessly enhancing quality.

2.3.3 Teamwork and Employee Commitment

This exercise is about involving all the members of staff in designing and planning and valuing their input giving them greater independence in making decisions (Powell, 1995; Yildirim, 2012). Empowerment of employees is a major key factor that affects the performance of an organization (Abdullah, et al., 2009; Schroeder, 2008; Wehnert, 2009). They are of the view that influence and participation of personnel in implementing TQM increases their self-sufficiency, commitment and inventiveness which leads to the organization innovation. Easton and Jarrel (1998) observe that participation of employee in quality improvement is based on teamwork. Shenawy et al. (2007) observes that involving employees is supported through teams, which enhance employee gratification leading to higher efficiency and productivity.

2.3.4 Customer Focus

Effective TQM implementation involves firms moving away from examination towards methods that address prevention and focus on customers (Hendricks & Singhal, 2000). Clienteles are simply the reason of success of an organization and a firm can't survive without them. To retain consumers, an enterprise should make an effort to discover the needs of their consumers, how much is needed, frequency of purchases and how their

after-purchase satisfaction will be ascertained. In essence, customer focus is embedded in strategies driven by the market which are presently the most prevalent technique firms are using to address customer needs (Cravens & Piercy, 2013; Day, 1994; Cravens & Piercy, 2006).

2.3.5 Innovation, Information and Analysis

Teece (2010) advocates that there should be gradual and consistent development of the goods and services in order for customers to receive value for money. This is cumulative innovation and rotates research and development; nurturing ideas; new product innovation and installation of current IT infrastructure. Allocca and Kessler (2006) are of the opinion that being able to take advantage of present technology to conjure contemporary goods before global rivals, results in gaining benefits of first mover advantage, products success, rise of market share, improve profits and ensuring survival.

Innovation and invention has exploded from the digital world for example concurrence of social media, cloud, gadgets and upsurge in need of information (Economist Intelligence Unit, 2013). Transport and logistics firms should benefit from such digital developments as E-commerce and M-commerce as a guaranteed way of providing value to customers at low cost.

2.3.6 Long-Term Supplier Relationship

This exercise involves forming close relationships and cooperating with suppliers to ascertain that they supply quality raw materials that address the desires of customers (Powell, 1995). Tari et al. (2007) observe that enhancement of relationship with suppliers increases suppliers and buyers performance, which positively impacts on customer satisfaction. Hackman and Wageman (1995) indicate that firms who adopt TQM form close associations with their suppliers to enhance chances of procuring quality products at discounted rates, lowering costs of production in the long run. In conclusion, Mehra et al. (2001) observe that to raise levels of productivity and quality, relationship with supplier is crucial and should be well maintained.

2.3.7 Quality Focus

Reed et al. (1996) defined quality as a pair in production of goods matching requirement and addressing prospects of the final consumer. Addressing the requirements and anticipations of clients is an important element to TQM (Reed et al., 1996). In relation to this, Easton and Jarrel (1998) show quality of products and services as stressing on client desires and contentment. Hendricks and Singhal (2000) observe that production of excellent products enhances contentment of customers and allegiance to the product and firm in general. Furthermore, Chong and Rundus (2003) show that paying special attention to quality in production process, generally improve quality of end commodity, translating to better retainment and contented customers.

2.4 Empirical Review

Kamal (2012) did a study aimed at examining the influence of TQM on competitive advantage of pharmaceutical manufacturing companies in Jordan. The results showed that there is influence of the TQM practices on competitive advantage; with client focus having the greatest influence by managing people and leadership in that order. Sadikoglu and Olcay (2014) did a study to investigate effects of TQM practices on various performance measures and challenges faced by firms practicing TQM in Turkey. The study showed that different TQM practices notably impact different performance results, showing the main hurdle that the firms faced were lack of involvement of personnel, appreciation and commitment of the employees, inappropriate structure of the organization, and lack of the resources. Rawashdeh (2014) did a study on TQM as a source of bank performance and competitive advantage in the banking sector in Jordan. The results of the study confirmed that TQM practices have positive and major influence both on bank performance and competitive advantage.

Reed et al. (2000) investigated the validity of the claim that TQM can generate a sustainable competitive advantage. Based on the market-based theory of competitive advantage, resource-based theory of the firm, and systems theory, the study was able to conclude that the belief is necessary. The study inferred that TQM is adept of generating a cost minimization or diversity-based superiority, and that the complexity and tacitness that are innate in the process of TQM have the possibility to create hurdles to copying that are essential for sustainability.

2.5 Research Gap

The previous studies on TQM and competitive advantage have come up with contradicted results. Some such as Abrunhosa & Moura E Sá, (2008), López-Mielgo, Montes-Peón, & Vázquez-Ordás (2009), Martínez-Costa & Martínez-Lorente (2008), Prajogo & Hong (2008) and Sarkees & Hulland (2009) found that TQM has positive influence on competitive advantage and innovation. Others such as Moura E Sá & Abrunhosa (2007), Pekovic & Galia (2009), Santos-Vijande & Álvarez-González (2007) and Reed et al. (2000) found that TQM has no impact on competitive advantage and innovation.

2.6 Conceptual Framework

The concept of TQM and its influence on organizational performance has been discussed in detail both in the literature as well as from the empirical studies done on the subject area. It was evident that TQM has had favorable effect on a firms performance-both financial and non-financial measure and in the current business environment, it used as a competitive tool. The variable that constitutes TQM varies from author to author and some of them have listed as far as 22 variables while others have condensed them to fewer manifests. The present study adopts and the variables are categorized as follows: leadership and top management commitment, learning organization, teamwork and employee commitment and customer focus, innovation, information and analysis, long-term supplier relationship and quality focus.

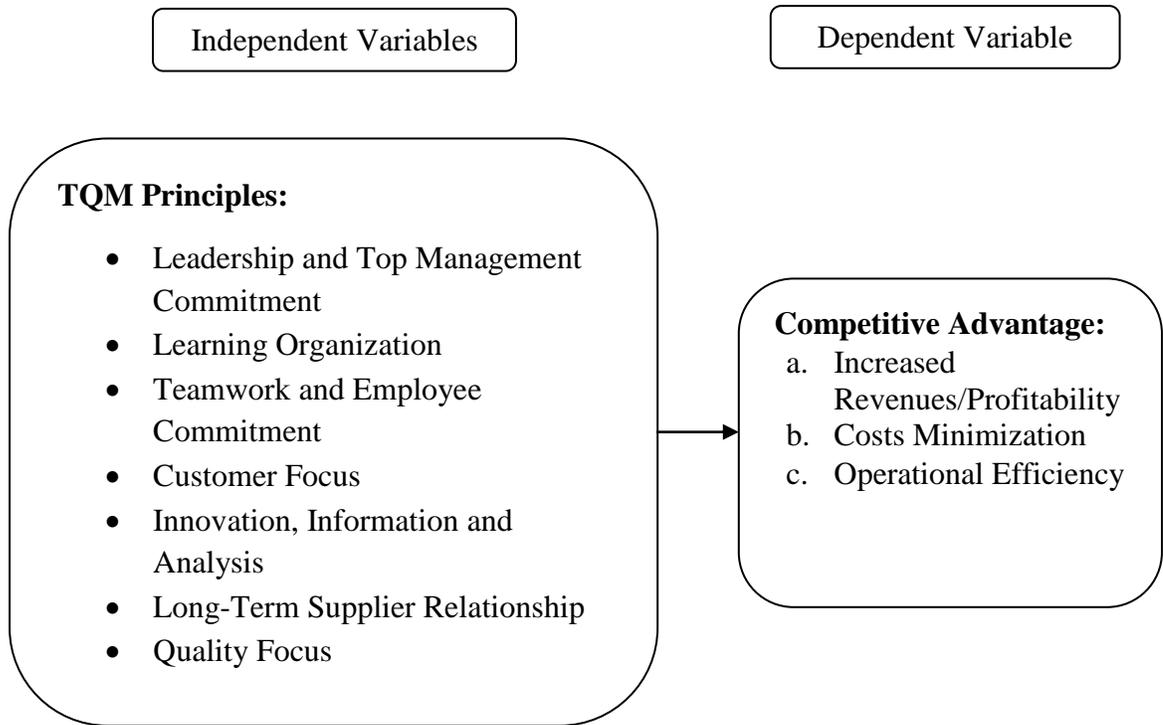


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The broad aim of the chapter was to bring out the justification for the research method that was used to explore the topic under study. The chapter provides the specifics in regards to the approach used to undertake the research, the research design used, the data collection procedure used and the research instruments used. This chapter also discussed how the data was analyzed.

3.2 Research Design

The type of research design used in the research was cross-sectional descriptive survey. Cross-sectional study was considered as the most appropriate time horizon because information was gathered at a particular point in time or over a short time span (Levin, 2006). Cross sectional design is adopted first when the research objective is descriptive in nature, usually in the form of a survey and second when the objective of the research is to determine the prevailing characteristics in a population at a given time point (Levin, 2006). On the contrary, they are limited, however, by the fact researchers record the information available in the population but do not manipulate variables hence difficult to infer causality (Levin, 2006).

Churchill (1996) describes a descriptive study as a research design in which the significant emphasis is on determining the number of times with which something occurs or the degree to which two variables differ. Survey means data collection on the entire population under study with no sampling. Census surveys are more suitable when

population is not vast, there is ample time for data collection and where higher scope of accuracy is required (Molenberghs, 2010). In this study, a census survey was preferred to sampling since the population is small.

3.3 Population of Study

The population of the study was all the transport and logistics firms in Mombasa County. Available data showed that there were 61 transport and logistics firms in Mombasa County (see appendix III). Due to the small size of this population, there was no sampling hence the study was a census survey.

3.4 Data Collection

The research employed primary data from the transport and logistics companies in Mombasa County. Primary data was collected using a structured questionnaire administered to the senior managers in the industry, with the responses based on a Likert scale of 1-5. The questionnaire consisted of both open and close ended questions relevant to the study and was divided into three sections. Section A contained aspects of bio data of the company and respondent; section B contained questions on TQM practices of the companies; Section C contained questions on cost leadership and differentiation as a measure of competitive advantage.

The researcher administered the questionnaire personally and through e-mail system to the firms. From each of the 61 firms, one (1) respondent filled out a questionnaire to give a total of 61 responses. The selected respondents were senior managers actively engaged

in the daily operations of the business. Since it was difficult for some firms to allow administration of the questionnaire, e-mail channel was used to forward some of the questionnaires to the intended respondents.

3.5. Operationalization of Study Variables

The variables were operationalized as follows;

Table 3.1: Operationalization of the variables

Construct	Sub construct	Indicators	Measurement Scale	Informing Literature
TQM Practices (Independent)	Leadership and Top Management Commitment	<ul style="list-style-type: none"> • Senior managers actively encourage change • Leadership proactively pursue continuous improvement • Top management clearly comprehend the elementary essence and practices of TQM • Departmental heads accept responsibility for quality of goods • Company's overall objective takes into consideration all external stakeholders 	5 point Likert Scale where; 1 -Strongly Disagree 2 - Disagree 3 – Neutral 4 - Agree 5 - Strongly Agree	Antonaros, 2010; Reed et al., 2000; Kaynak, 2003; Bon & Mustafa, 2013).

		<ul style="list-style-type: none"> • Management create synergy, interdependence and interconnections 		
Learning Organization	<ul style="list-style-type: none"> • Training and education • Quality training measured and monitored using analytical methods • Management training in quality principles 	<p>5 point Likert Scale where;</p> <p>1 -Strongly Disagree</p> <p>2 - Disagree</p> <p>3 – Neutral</p> <p>4 - Agree</p> <p>5 - Strongly Agree</p>	<p>Yusuf et al. (2007); Reed et al., 2000; Kaynak, 2003; Bon & Mustafa, 2013).</p>	
Teamwork and Employee Commitment	<ul style="list-style-type: none"> • Feedback on their quality performance • Quality is instilled into the employees as their responsibility • Standard procedure for measuring employee satisfaction • Employee are trained to be more flexible and multitask their daily operations • Involved in design and planning 	<p>5 point Likert Scale where;</p> <p>1 -Strongly Disagree</p> <p>2 - Disagree</p> <p>3 – Neutral</p> <p>4 - Agree</p> <p>5 - Strongly Agree</p>	<p>Powell, 1995; Yildirim, 2012; Reed et al., 2000; Kaynak, 2003; Bon & Mustafa, 2013).</p>	
Customer	<ul style="list-style-type: none"> • Feedback sought from 	<p>5 point Likert Scale</p>	<p>Reed et al.,</p>	

	Focus	<p>customers to understand their needs and requirements</p> <ul style="list-style-type: none"> • Customer involvement in product and service design process • Resolving customer complaints quickly • Improve on product and service quality 	<p>where;</p> <p>1 -Strongly Disagree</p> <p>2 - Disagree</p> <p>3 – Neutral</p> <p>4 - Agree</p> <p>5 - Strongly Agree</p>	<p>2000;</p> <p>Kaynak, 2003; Bon & Mustafa, 2013);</p> <p>Hendricks & Singhal (2000);</p> <p>Cravens & Piercy, 2013</p>
	Innovation, Information and Analysis	<ul style="list-style-type: none"> • Big data analytics • Benchmarking or our products, services, technology and human resource policies and practices • Managers make accurate decisions using analyzed data 	<p>5 point Likert Scale</p> <p>where;</p> <p>1 -Strongly Disagree</p> <p>2 - Disagree</p> <p>3 – Neutral</p> <p>4 - Agree</p> <p>5 - Strongly Agree</p>	<p>Kamal, 2012;</p> <p>Hoang, et al., 2010;</p> <p>Ibrahim, et al., 2011;</p> <p>Reed et al., 2000;</p> <p>Kaynak, 2003; Bon & Mustafa, 2013).</p>
	Long-Term Supplier Relationship	<ul style="list-style-type: none"> • Suppliers involved in product/service development • Evaluate the performance 	<p>5 point Likert Scale</p> <p>where;</p> <p>1 -Strongly Disagree</p> <p>2 - Disagree</p>	<p>Reed et al., 2000;</p> <p>Kaynak, 2003; Bon & Mustafa,</p>

		of suppliers	3 – Neutral 4 - Agree 5 - Strongly Agree	2013).
	Quality Focus	<ul style="list-style-type: none"> Meeting the needs and expectations of customers 	5 point Likert Scale where; 1 -Strongly Disagree 2 - Disagree 3 – Neutral 4 - Agree 5 - Strongly Agree	Reed et al. (1996); Reed et al., 2000; Kaynak, 2003; Bon & Mustafa, 2013); Chong & Rundus (2003)
Competitive Advantage (Dependent)		<ul style="list-style-type: none"> Lower prices than competitors Quality products and services On time delivery of products and services Differentiated products and services Increased Revenues Economies of scale Unique desirable products and services 	5 point Likert Scale where; 5 - Greater Extent 4 - Great Extent 3 -Moderate Extent 2 - Low Extent 1 - Very Low Extent	Porter, 1998; Bon & Mustafa, 2013

3.6 Reliability and Validity Tests

Reliability and validity tests are important on any occasion a measuring device is used in the process of data collection, since a researcher would not want to use a device that gives wrong measurements than what it was designed for (Saunders et al., 2009). After all, a study relies on the results to either back or oppose a theory and if the process of collecting data is defective, the information being analyzed will also be flawed.

3.6.1 Reliability Test

A test is considered reliable when it measures what it is meant to measure consistently. Reliability refers to soundness dependability and authenticity of the research instrument. It is the extent to which an instrument of research results to homogenous conclusion of data after repeated attempts (Meyers, Gamst & Guarino, 2006). While undertaking the pilot study the researcher adopted the test-retest technique to test reliability of the questionnaires. The questionnaires were administered to 5 respondents, within a span of two weeks. After administration of the questionnaires, the reliability of the data collection tool was done using the Cronbach's test, which ranges from 0 to 1, where a Cronbach's alpha of 0.7 or greater is considered as sufficiently reliable (Nunnally & Bernstein, 1994). The Cronbach's alpha in this study was 0.784 which shows that the study items were reliable and measured were they were intended to measure.

3.6.2 Validity Test

This was evaluated preceding the main study; a pilot study was carried out, where the whole research was done as well as data collection and analysis following closely the procedure planned for the research. According to Cooper and Schindler (2013), pilot studies are undertaken with fewer subjects than the one employed in the main study. The essence of the pilot study is to conclude the instrument's content validity and reliability. For this study, the pilot study was carried out with 10 randomly selected people and who eventually did not participate in the main study.

3.7 Data Analysis

The data generated from questionnaires was scrutinized, formatted, arranged and computer coded to minimize duplication of data gathered into a template convenient for analysis. The data was then analyzed using the Statistical Package for Social Sciences (SPSS) 20.0, which was helpful in generating tables, graphs, charts that allowed for ease of interpretation, and finally conclusion and recommendations. The data was then summed up using frequencies and outlined in tables before multiple regression and correlation analysis was done.

In establishing the extent of adoption of TQM practices by transport and logistics firms in Mombasa County, descriptive statistic was used in the analysis of the data, the mean and standard deviation statistics were used in this section.

Multiple regression analysis was used to determine the relationship between TQM practices and competitive advantage in transport and logistics firms in Mombasa County. This was determined by analyzing the two variables and getting a correlation coefficient to measure the linear significance of two-attributes. Correlation analysis was finally conducted to quantify the strength of the relationship between TQM practices and competitive advantage in transport and logistics firms in Mombasa County. The general form of the multiple linear regression is presented in equation 3.1.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon \dots \dots \dots 3.1$$

Where;

Y= Competitive Advantage

X₁= Leadership and Top Management Commitment

X₂= Learning Organization

X₃= Teamwork and Employee Commitment

X₄= Customer Focus

X₅= Innovation, Information and Analysis

X₆= Long-Term Supplier Relationship

X₇= Quality Focus

ε = Error Term

β₀ is the intercept or constant; β₁, β₂, β₃, β₄, β₅, β₆ & β₇ are coefficients

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

The study sought to establish the extent of adoption of TQM practices by transport and logistics firms in Mombasa County and to determine the effect of adopting these practices on the competitive advantage of these firms. This chapter presents findings from the data analysis in line with the research objectives. The analysis is divided into three parts. Part 4.2 is the response rate, 4.3 presents the demographic information of the firms and respondents. In part 4.4 the analysis as per the research objectives is presented and part 4.5 presents the inferential statistics.

4.2 Response Rate

The study was a census survey of 61 transport and logistics firms in Mombasa County. In order to collect data, 61 questionnaires were issued out to one respondent per firm, a senior manager actively engaged in the daily operations of the business. Out of the 61 questionnaires, 43 questionnaires were received and analyzed representing 72% response rate which was considered adequate.

4.3 Demographic Information

The respondents were required to illustrate their highest academic qualification and the results are as shown in table 4.1.

Table 4.1: Respondents Academic Qualifications

	Frequency	Percent
Certificate	5	12
Diploma	10	23
Bachelor's Degree	21	49
Master's Degree	7	16
PhD	0	0
Total	43	100

Source: Researcher (2016)

As shown in table 4.1, majority of the respondents (49%) had attained a Bachelor's degree followed by 23% with diplomas then 16% with Master's degree and finally 12% with certificates in various fields. This shows that the respondents had the adequate ability to understand and answer the questions relating to TQM and competitive advantage.

Moreover, the respondents were then inquired to fill in their length of continuous service with the company. Results are shown in table 4.2

Table 4.2: Length of Service with Company

	Frequency	Percent
Less than 2 years	0	0
2-5 years	5	12
6-10 years	31	72
More than 10 years	7	16
Total	43	100

Source: Researcher (2016)

As shown in table 4.2, most respondents (72%) had worked with their present companies for 6-10 years, 16% for more than 10 years while 12% had worked for 2-5 years. None had worked for less than 2 years showing that all the respondents had a better understanding of happenings in their firms.

The respondents were also required to mention the period which the company has been operating for, and the results are as shown in table 4.3

Table 4.3: Length of time the Company has been in Existence

	Frequency	Percent
Less than 5 years	0	0
5-10 years	15	35
10-15 years	17	40
More than 15 years	11	25
Total	43	100

Source: Researcher (2016)

As shown in table 4.3, most respondents (40%) stated that their firms had been in existence for 10-15 years at the time of the study followed by those who indicated 5-10 years at 35% and a quarter had been in existence for more than 15 years. This shows that majority of the transport and logistics firms under study have existed for more than 10 years a considerable amount of time to implement TQM practices.

4.4 Impact of Total Quality Management on Competitive Advantage

This section looks at the relationship between TQM and competitive advantage in line with the research objectives.

4.4.1 Extent of Adoption of TQM Practices

The questionnaire asked to mention the degree to which the highlighted TQM practices have been adopted by their companies. This was measured on a Likert scale ranging from 1 to 5; where 1 represents a very low extent increasing to 5 representing a very high extent. The results are came as shown in table 4.4 which representing the degree of for implementation of TQM practices in the firms surveyed.

Table 4.4a: Top Management Commitment

	Mean	S.Dev	Rank
Senior managers actively encourage change	3.17	.559	4
Leadership proactively pursue continuous improvement	4.67	.630	1
Top management clearly comprehend the elementary essence and practices of TQM	3.11	.715	6
The departmental heads accept responsibility for quality of goods	3.17	.377	4
Company's overall objective takes into consideration all external stakeholders	4.63	.694	2
Management views activities in our organization as a whole in order to create synergy, interdependence and interconnections	3.58	.647	3
Overall mean	3.72		

Source: Researcher (2016)

As shown in table 4.4a, the study found out that leadership and top management commitment had an overall mean of 3.72. This shows that the firms had adopted leadership and top management commitment to a moderate extent. Additionally, when factors under leadership and top management commitment were analyzed, leadership proactively pursue continuous improvement ranked high with a mean of 4.67 while top management clearly comprehend the elementary essence and practices of TQM with a mean of 3.11.

Table 4.4b: Learning Organization

	Mean	S.Dev	Rank
The company encourages training and education to employees	2.32	.767	3
Quality training measured and monitored using analytical methods	2.40	.652	1
Management training in quality principles	2.37	.559	2
Overall mean	2.36		

Source: Researcher (2016)

As shown in table 4.4b, the study found out that learning organization had an overall mean of 2.36. This shows that the firms had adopted learning organization practice to a low extent. When factors under this practice were considered individually, analytical methods to measure and monitor quality training ranked first with a mean of 2.40 while the company encourages training and education to employees ranked last with a mean of 2.32.

Table 4.4c: Teamwork and Employee Commitment

	Mean	S.Dev	Rank
The employees are provided with feedback on their quality performance	3.42	.647	1
Quality is instilled into the employees as their responsibility	3.25	.838	2
Standard procedure for measuring employee satisfaction	2.75	.729	4
Employee are trained to be more flexible and multitask their daily operations	2.62	.871	5
Employees are involved in design and planning	2.78	.498	3
Overall mean	2.96		

Source: Researcher (2016)

Table 4.4c shows the results for adoption of teamwork and employee commitment in the firms surveyed. The overall mean score for the factors under teamwork and employee commitment was 2.96 which show that this TQM practice has also been adopted to a low extent.

Table 4.4d: Customer Focus

	Mean	S.Dev	Rank
Feedback sought from customers to understand their needs and requirements	4.87	.753	2
Customers are involved in product and service design process	1.58	.647	4
The company has effective process for resolving customer complaints	4.88	.647	1
Customer complaints and grievances are used to improve on product and service quality	4.73	.808	3
Overall mean	4.02		

Source: Researcher (2016)

As per table 4.4d, the study found out that customer focus (mean: 4.02) has been adopted to a great extent although customers are involved in product and service design process to a very low extent (mean: 1.58). This means that transport and logistics firms in Mombasa County have high customer focus but overlook other components of TQM. The results could also imply that customer focus influences competitive advantage of the firms to a large extent.

Table 4.4e: Innovation, Information and Analysis

	Mean	S.Dev	Rank
The company gathers data from their consumers about competition in the market	2.77	.694	3
We have undertaken benchmarking of our products, services, technology and human resource policies and practices	4.55	.859	1
Data analyzed using updated technology for the management to make proper decisions	2.80	.772	2
Overall mean	3.37		

Source: Researcher (2016)

The research also looked to establish the degree to which innovation, information and analysis had been adopted in the firms. As shown in table 4.4e, the mean score was 3.37 which imply that innovation, information and analysis had been adopted to a moderate extent. The results also reveal that the firms had undertaken benchmarking of their products, services, technology and human resource policies and practices to a greater measure with a mean of 4.55.

Table 4.4f: Long Term Supplier Relationship

	Mean	S.Dev	Rank
Suppliers contribute in product development	2.37	.476	2
The company evaluate the performance of suppliers	4.52	.647	1
Overall mean	3.45		

Source: Researcher (2016)

The study also looked to establish the scope to which the firms had adopted long term supplier relationship. As indicated in table 4.4f, the overall mean score was 3.45 which show that the firms had adopted long term supplier relationship to a moderate extent. But when individual factors were considered, the companies evaluate the performance of suppliers with a mean of 4.52 shows that the firms scrutinize suppliers to a great extent. Thus, evaluation of suppliers had been adopted to a great extent.

Table 4.4g: Quality Focus

	Mean	S.Dev	Rank
Customer requirements are effectively disseminated and understood throughout the workforce	3.25	.729	2
Products and services produced meet the customer demands effectively	3.45	.729	1
Overall mean	3.35		

Source: Researcher (2016)

The study also sought to provide the degree to which quality focus had been adopted in the firms under study. The overall mean was 3.35 which imply that quality focus had been adopted to a moderate extent.

4.4.2 Total Quality Management Practices on the Competitive Advantage

The respondents were required to demonstrate the degree to which their companies have experienced the competitive advantage outcomes as a result of practicing TQM. This was measured on a Likert scale ranging from 1 to 5; where 1 represented a very low extent and rising to 5 representing a very great extent. Results are as shown in table 4.5.

Table 4.5: Effect of TQM practices on competitive advantage

	Mean	S Dev	Rank
As a result of cost minimization, we can afford to offer lower prices than competition in the market	4.13	.107	2
The company is competent to compete in the market on the basis of quality goods and services	3.77	.466	3
We deliver customer orders on time	2.36	.771	7
We offer differentiated products and services to our customers	2.76	.674	6
Increased Revenues	4.67	.832	1
Enhance economies of scale due to greater efficiency	3.66	.382	4
Creating uniquely desirable products and services	3.55	.464	5
Overall mean	3.56		

The results in table 4.5 indicate an overall mean of 3.56 implying that total quality management had impacted on competitive advantage to a moderate extent in the transport and logistics firms in Mombasa County. More importantly, majority of the respondents 75% stated that TQM adoption will bring about increased revenues to a great extent followed by the fact the company can afford to lower their prices than competitors in the market as a result of cost minimization at 54% great extent responses. On the ability to compete on the basis of quality of services and products, 76% said moderate extent while 70% said enhance economies of scale due to greater efficiency. Overall, the results indicate TQM having a huge influence on competitive advantage among transport and logistics companies in Mombasa County.

4.5 Correlation Analysis

In this study, it is expected that there is a positive linear relationship between TQM and competitive advantage because as TQM practices are applied so does competitive advantage strengthen. The Pearson Correlation coefficient comes in to play to analyze the strength of the relationship between the two variables. The task is one of quantifying the strength of the association and direction of the two variables. Table 4.7 below shows the distribution of correlation of variables, which ranges from -1 to 1, where 1, shows a perfect positive correlation while -1 represents a perfect negative correlation and 0 means no correlation at all.

Table 4.6: Correlations

		Y	X1	X2	X3	X4	X5	X6	X7
Y	Pearson Correlation	1	-.047	-.273	-.038	.052	-.003	.122	.252
	Sig. (2-tailed)		.764	.076	.808	.740	.987	.434	.104
X1	Pearson Correlation	-.047	1	.047	-.226	.034	-.085	-.066	-.028
	Sig. (2-tailed)	.764		.765	.146	.828	.586	.676	.857
X2	Pearson Correlation	-.273	.047	1	.096	-.057	.091	-.014	.128
	Sig. (2-tailed)	.076	.765		.542	.717	.560	.929	.413
X3	Pearson Correlation	-.038	-.226	.096	1	.132	-.241	.092	.142
	Sig. (2-tailed)	.808	.146	.542		.398	.120	.555	.365
X4	Pearson Correlation	.052	.034	-.057	.132	1	.011	.132	.026
	Sig. (2-tailed)	.740	.828	.717	.398		.945	.400	.871
X5	Pearson Correlation	-.003	-.085	.091	-.241	.011	1	-.226	-.125
	Sig. (2-tailed)	.987	.586	.560	.120	.945		.145	.424
X6	Pearson Correlation	.122	-.066	-.014	.092	.132	-.226	1	.747
	Sig. (2-tailed)	.434	.676	.929	.555	.400	.145		.000
X7	Pearson Correlation	.252	-.028	.128	.142	.026	-.125	.747	1
	Sig. (2-tailed)	.104	.857	.413	.365	.871	.424	.000	
Correlation is significant at 0.01 level									

Key: Y= Competitive Advantage; X₁= Leadership and Top Management Commitment; X₂= Learning Organization; X₃= Teamwork and Employee Commitment; X₄= Customer

Focus; X₅= Innovation, Information and Analysis; X₆= Long-Term Supplier Relationship and X₇= Quality Focus

As shown in table 4.6, the relationship between competitive advantage and quality focus, long-term supplier relationship, customer focus is positive. This implies that as these variables change (increase or decrease), competitive advantages changes in a similar direction. On the contrary, the relationship between competitive advantage and leadership and top management commitment; learning organization; teamwork and employee commitment is negative. This is contrary to this study's expectations. Overall, the differences between the TQM practices and competitive advantage lie in the strength of the relationships.

This study assessed the significance of the relationship as well as its strength where the lesser the p-level, the more significant the relationship. The results show that all the independent variables had a weak and insignificant relationship with competitive advantage ($p > 0.01$).

4.6 Reliability Tests

4.6.1 Cronbach's Alpha Test

The major reason for this analysis was to calculate the internal consistency of the study components, the relationship a set of variables are as a group. The Cronbach's alpha values for this research are as indicated in table 4.8. Cronbach (1951) claimed that an alpha value of 0.70 is considered "acceptable" in most social science research situations.

Mosaddeghrad and Yarmohammadian (2006) also states that an alpha value of 0.70 or more is considered as acceptable reliability for a study. The findings reveal that most of the elements have relatively high internal consistency.

Table 4.7: Reliability Statistics

Variable	Cronbach's Alpha
Leadership and Top Management Commitment	.937
Learning Organization	.845
Teamwork and Employee Commitment	.731
Customer Focus	.645
Innovation, Information and Analysis	.741
Long-Term Supplier Relationship	.746
Quality Focus	.846
Total	.784

Source: Researcher (2016)

4.6.2 Multicollinearity

There exists multicollinearity problem when more than one of the predictor variables in a regression model are highly correlated (Pallant, 2007). One way to disclose multicollinearity is the variance inflation factor (VIF), it provides an estimate of how much the variance of an estimated regression coefficient increases if your predictors are correlated. If none of the factors are correlated, the VIFs will all be one or less with

tolerance values within the threshold of .1 (Hair et al., 2010; Martz, 2013). The findings of multicollinearity for the TQM practices variables under study are documented in table 4.8.

Table 4.8: Test for Multicollinearity

Variables	Competitive advantage	
	Tol.	VIF
Leadership and Top Management Commitment	.902	1.108
Learning Organization	.932	1.073
Teamwork and Employee Commitment	.824	1.213
Customer Focus	.934	1.071
Innovation, Information and Analysis	.847	1.181
Long-Term Supplier Relationship	.395	2.530
Quality Focus	.409	2.447

Note: Tol. = tolerance, VIF = variance inflation factor

Source: Researcher (2016)

As shown in table 4.8, the study also checked multicollinearity in the multiple linear regression where Tolerance should be >0.1 or VIF (variance inflation factor) <10 . The results show that all the variables met this criteria hence multicollinearity did not pose a problem in the study.

4.6.3 Test of Autocorrelation

Autocorrelation was tested using Durbin-Watson statistic which is used to detect autocorrelation in the prediction errors in a regression equation and it ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation (Montgomery, Peck & Vining, 2001). Durbin-Watson is a test that the residuals from a linear regression or multiple regression are independent. This study intended to test the null hypothesis of no autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance. The printed bounds were $dL=1.131$ and $dU=1.870$. Since the the Durbin-Watson value in this study was 1.957 as per table 4.12 and was more than dU , the null hypothesis will not be rejected. Thus, there was no autocorrelation.

4.7 Model Summary and ANOVA

Table 4.9 shows the results for variations between the dependent and independent variables.

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.436 ^a	.190	.028	.69039	1.957

Source: Researcher (2016)

First, the Pearson r $(.436)^2 = .190$ (R^2) and the overall p value for the null hypothesis which was that there is not a significant relationship between competitive advantage and TQM practices was .342 as depicted in the ANOVA table. This means that the relationship although positive was not significant that is; $p > 0.05$. This suggests that the null hypothesis was not rejected and that there is insufficient evidence to conclude that there is a significant linear relationship between TQM and competitive advantage because the correlation coefficient is not significantly different from zero.

Second, the coefficient of determination (R^2) which shows how variation in TQM practices adopted explains the changes or variation in competitive advantage. With R^2 .190 for the model, this means that the independent variables (predictors) in the model (Leadership and Top Management Commitment, Learning Organization, Teamwork and Employee Commitment, Customer Focus, Innovation, Information and Analysis, Long-Term Supplier Relationship, Quality Focus) could offer about 19.0% explanation of the variation in the dependent variable (competitive advantage). This means that as the TQM practices adopted by transport and logistics firms change, competitive advantage varies by 19.0%. This is a weak relationship since 81% remaining is interpreted by alternative variables not included in the model and represented by the error term.

Table 4.10: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.922	7	.560	1.176	.342
	Residual	16.682	35	.477		
	Total	20.605	42			

Source: Researcher (2016)

The results in table 4.10 show that the F statistic was 1.176 and was not significant at 5% level of confidence ($p = 0.342$) i.e. $P > 0.05$. This shows that the model was not fit to explain the relationship between TQM practices (quality focus, customer focus, leadership and top management commitment, learning organization, innovation, information and analysis, teamwork and employee commitment and long-term supplier relationship) and competitive advantage. TQM can explain changes/variation in competitive advantage to a small extent.

4.8 Distribution of Coefficients

The table of coefficients shows the liaison between the TQM practices variables and their control on competitive advantage. The influence is represented by Beta coefficients/weights which show the relative importance of independent variable in both standardized and unstandardized terms.

Table 4.11: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.650	1.568		2.328	.026		
Leadership and Top Management Commitment	-.058	.181	-.052	-.323	.749	.902	1.108
Learning Organization	-.484	.233	-.328	-2.079	.045	.932	1.073
Teamwork and Employee Commitment	-.073	.172	-.071	-.423	.675	.824	1.213
Customer Focus	.079	.192	.065	.414	.682	.934	1.071
Innovation, Information and Analysis	.011	.185	.010	.059	.953	.847	1.181
Long-Term Supplier Relationship	-.264	.255	-.251	-1.036	.307	.395	2.530
Quality Focus	.605	.295	.489	2.055	.047	.409	2.447

Source: Researcher (2016)

First, table 4.11 shows that relationship between TQM practices and competitive advantage was positive; customer focus ($\beta = .079$, $t = .414$); Innovation, Information and Analysis ($\beta = .011$, $t = .059$) and Quality Focus ($\beta = .605$, $t = 2.055$).

In addition, the results show that there was a negative relationship between the following variables and competitive advantage: Leadership and Top Management Commitment ($\beta = -.058$, $t = -.323$); Learning Organization ($\beta = -.484$, $t = -2.079$); Teamwork and Employee Commitment ($\beta = -.073$, $t = -.423$) and Long-Term Supplier Relationship ($\beta = -.264$, $t = -1.036$).

Furthermore, the significance levels were analyzed. As shown in the table, only two variables learning organization ($p=.045$) and quality focus ($p=.047$) had a significant relationship with competitive advantage where $p<0.05$ while the rest had an insignificant relationship with competitive advantage where $p>0.05$. Learning organization had a significant negative relationship with competitive advantage while quality focus had a significant positive relationship with competitive advantage. This also means that learning organization and quality focus impacts more on competitive advantage than the other independent variables.

Overall, the consistency of regression coefficients on the predictors in the model suggest that these variables are important factors influencing competitive advantage but at varying degrees. Additionally, the results show that multicollinearity did not pose a problem in the study since all the variables met the criteria of Tolerance should be >0.1 or VIF <10 .

From the regression model the following regression equation is derived:

$$Y = 3.65 - .058X_1 - .484X_2 - .073X_3 + .079X_4 + .011X_5 - .264X_6 + .605X_7 + \varepsilon$$

Where:

X_1 = Leadership and Top Management Commitment

X_2 = Learning Organization

X_3 = Teamwork and Employee Commitment

X_4 = Customer Focus

X_5 = Innovation, Information and Analysis

X_6 = Long-Term Supplier Relationship

X_7 = Quality Focus

ε = Error Term

Constant = 3.650, shows that if TQM practice is rated as zero, competitive advantage would change by a factor of 3.65. The independent variables have varying degree of impact on competitive advantage depending on beta coefficients values.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter further discusses the data presented in the previous chapter of the study in line with literature review. The principle aim of the study was to investigate the impact of TQM on competitive advantage. It summarizes the discoveries of the research through the analyzed variables in this study. Thereafter, conclusions are made based on TQM practices and competitive advantage. Finally policy recommendations and areas of further research are suggested.

5.2 Summary of the Study Findings

Summary of study findings are done in line with the research objectives. Overall, the results show that all the seven (7) TQM practices as independent variables have a significant relationship with competitive advantage ($p < 0.05$).

5.2.1 Degree of Adoption of TQM Practices

This study sought to find out if TQM is employed by transport and logistics firms in Mombasa County. The findings reveal that TQM practices have been adopted in the firms but at varying degrees. The results showed that customer focus with a mean of 4.02 has been adopted followed by leadership and top management commitment, long-term supplier relationship, innovation, information and analysis, quality focus and which had

been adopted to a moderate extent at the time of the study. It was also established that learning organization and teamwork and employee commitment had been adopted to a low extent at the time of the study.

The transport and logistics firms being in the service industry where customization is a key feature, require feedback from the customer on how they would like their goods transported; either in form of loose cargo or containerized, how the cargo should be handled in case of delicate or dangerous goods, the period of time he would want the shipment moved from point A to B. In general, a customer designs the mode of shipment of the goods which the transport companies have to fulfill in the specific order. Leadership and commitment of the senior management is shown working as an example in the transport and logistics firms. Most of the top managers are individuals who had made their way up the ladder since working as a mere junior clerk. They understand the whole operation of the firm and make decisions that solve problems at hand with immediate effect. They earn the respect from their fellow peers due to their commitment to the cause and hard work to rise up the chain of command.

From the study, we understand most of the firms have been operating for quite a while and have scoured the market to get the best supply deals available. Maintaining relations with suppliers results to earning discounts, larger credit facilities and in the long run, information about the market. The firms are now trying to embrace technology and present trends through ISO and OHSAS certification, use of M-Pesa facility to pay

allowances to their drivers and also tracking of the vehicles to ensure smooth shipment of the goods to the final consumer. Transport and logistics firms lack internal communication between departments, where the accounts department and operations department are in constant conflict to outperform each other, as well as the logistics and transport department.

In this study whereas TQM practices affects competitive advantage at varying degrees, effort should be geared towards enhancing the ones which have been implemented to a small extent. Learning organization and teamwork and employee commitment have been adopted to a moderate extent. This will create synergy and interconnectedness which will improve competitive advantage further.

5.2.2 TQM practices and Competitive Advantage

The study sought to investigate if TQM concepts have the likelihood to bring about competitive advantage. The overall mean for factors under competitive advantage was 3.56 showing that TQM has impacted competitive advantage to a moderate extent. Some practices such as customer focus and top leadership commitment impacts on competitive advantage to a large extent. Nevertheless, efficient TQM practices does not necessarily mean a rise in sales and profits of the firm. Referencing to this study finding, it can be wrapped up that efficient practice of TQM results in a moderately high competitive advantage for transport and logistics firms.

Thus, TQM is considered as a cause of competitive advantage because it lets firms to operate at a more competitive level and fulfill the needs of its consumers, while minimizing production costs and wastes hence increasing quality of the end product. Hence firms in transport and logistics sector should continuously embrace TQM practices especially the ones which have been neglected in order to further enhance competitive advantage and performance.

5.3 Conclusions

Whereas past studies such as Sadikoglu and Olcay (2014) and Kamal (2012) have pointed out that TQM practices have a positive impact, they were carried out in other sectors other than transport and logistics firms. Others such as Powel (1995), Reed et al. (2000) and Douglas and Judge (2001) have been general in nature. This study has therefore shown that indeed TQM practices have positive impact on competitive advantage in Transport and Logistics firms but at varying degrees. Customer focus has been implemented to a great extent followed by leadership and commitment of top management while learning organization and employee commitment have been implemented to a small extent.

The study found out that TQM results in increased competitive advantage for firms. This supports Reed et al. (2000) observations who investigated the soundness of the assertion that TQM can bring about a feasible amount of competitive advantage. Based on market-based theory, RBV, and systems theory, Reed et al. (2000) concluded that belief that

TQM affects competitive advantage that is sustainable is warranted. TQM brings about cost- or differentiation-based advantage just like what Porter (1985) had stated.

Furthermore, Barney et al. (2011) and Teece (2007) reiterate that RBV of an organization is the ground consequent to which performance and competitive advantage can be forecasted. In this study, achieving competitive advantage through TQM depends on how well resources such as human resource and capital are apportioned to various departments to address market gaps. The focus of RBV is on harnessing intangible resources notably human capital to get that competitive edge in the market. Kamal (2012) found out that TQM practices impacts positively on competitive advantage of Pharmaceutical manufacturing companies in Jordan.

Pearson correlation results also showed that long term supplier relationship and quality focus and leadership and top management commitment have a strong positive correlation with competitive advantage at $r = .252$ and $r = .122$ respectively. Teamwork and employee commitment and Learning Organization had a weak negative relationship with competitive advantage at $r = -.038$ and $r = -.273$ respectively. Nevertheless, the results agree with findings by Kamal (2012) who found out that focusing on the customer has the strongest effect on competitive advantage although the study was done in Jordan on pharmaceutical manufacturing companies. Kamal (2012) also found out that people management followed customer focus in affecting competitive advantage then leadership subsequently. This is contrary to findings of this study done on transport and logistics firms where leadership and top management commitment ranks second to customer focus

in influencing competitive advantage. This could imply that TQM practices affect competitive advantage differently in different sectors although Kamal (2012) has a feeling that TQM has a huge impact on competitive advantage regardless of the sector.

The relationship between the following TQM practices; customer focus, long term supplier relationship and quality focus was expected to be positive with competitive advantage. This implies that as TQM is implemented in transport and logistics firms in Mombasa County, competitive advantage in terms of increased revenues and profitability, costs minimization and operational efficiency goes up. This relationship was captured using a simple regression model. Overall, the results showed that with R^2 of .190 as the model fit, the independent variable TQM principles could offer about 19% explanation of the variation in the dependent variable (competitive advantage).

5.4 Recommendations of the Study

First according to systems theory, activities in an organization cannot be viewed in isolation but as a whole in order to create synergy both internally amidst the organization and externally with the environment (Meadows, 2008). This study recommends improvement in adoption of TQM practices such as learning organization, teamwork and employee commitment which have been implemented to a small extent in the transport and logistics firms compared to customer focus and top management commitment. One or two practices of TQM may not bring out the desired competitive advantage compared to all practices working in synergy.

There's a need for training of internal communication between the various departments in the firm. The members of staff need to understand that they work for the progress of the company as a whole and not for specific departments. Team building exercises should also be considered by the firms to enhance the bonds of the various divisions and create unity and harmony in the work force for the long term.

5.5 Limitations of Study

This study is limited in scope in two ways: first the study focused on the impact of TQM on competitive advantage and second it was done in transport and logistics firms in Mombasa County and this may make this study unrepresentative, compared to when making a conclusion for the whole transport and logistics sector in Kenya.

Lack of information exposed out by the respondents who were not able to give out proper information. This was contributed by lack of experience in the area of study. The respondents had to be given time to consult with their superiors so as they can give proper and honest answers.

It was difficult to administer the questionnaires through mail or sending hard copies to the respondents as some firms rarely check their post office box and some firms have a long procedure of validating documents before they are handed over to the senior

manager for filling in. Use of email was the best method of circulating the questionnaires and follow up done via phone calls to the intended recipients.

5.6 Suggestion for Further Studies

Future research on impact of TQM practices on competitive advantage could move in utilization of a larger sample size, for example transport industry in Kenya as country to increase reliability of the findings. This could also be extended to study transport industry in the public sector and not just the private commercial sector.

Use of quantitative analytics to analyze secondary data could also be conducted in future, although some firms may be reluctant to give such information, this could create an even clearer picture on the concept of TQM in relation to revenues and profits as well as competitive advantage in general.

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Appendix I: Cover Letter

Hilmy Ahmed

P.O. Box 81793 - 80100,

Mombasa.

August, 2016

Dear Respondent,

RE: RESEARCH QUESTIONNAIRE

This questionnaire (attached) is designed to gather information on the impact of total quality management on competitive advantage total quality management and performance of transport firms in Mombasa County. This study is being carried out for a management project paper as a requirement in partial fulfillment of the Master of Business Administration, University of Nairobi

Please note that this is strictly an academic exercise towards the attainment of the above purpose. You are hereby assured that the information will be treated with the strictest confidence. Your co-operation will be highly appreciated.

Thank you for your anticipated kind response.

Yours Sincerely,

Hilmy Ahmed

Appendix II: Research Questionnaire

PART A: Demographic and Respondents Profile

1. Name of the respondent (optional)
2. Name of your organization
(optional).....
3. What is your highest academic qualification? (Tick as applicable).
 - a) Certificate []
 - b) Diploma []
 - c) Bachelor's Degree []
 - d) Master's Degree []
 - e) PhD []
4. Length of continuous service with the company?
 - a) Less than two years []
 - b) 2-5 years []
 - c) 6- 10 years []
 - d) Over 10 years []
5. For how long has your company been in existence?
 - a) Under 5 years []
 - b) 5 to Under 10 years []
 - c) 10 to Under 15 years []
 - d) 15 years and above []

Part B: Total Quality Management practices

6. To what extent has the following total quality management practices been implemented in your company? Use 1) Strongly disagree; 2) Disagree; 3) Neutral 4) Agree; 5) Strongly Agree

	Top management commitment	1	2	3	4	5
1	Senior managers actively encourage change					
2	Leadership proactively pursue continuous improvement					
3	Top management clearly understands the fundamental spirits and principles of quality management					
4	The departmental heads accept responsibility for quality of goods					
5	The company's plan always incorporates external customers, suppliers and other stakeholders					
6	Management views activities in our organization as a whole in order to create synergy, interdependence and interconnections					
	Learning Organization	1	2	3	4	5
1	The company encourages training and education to employees					
2	Statistical methods to measure and monitor quality training					
3	Management training in quality principles					
	Teamwork and Employee Commitment	1	2	3	4	5

1	The employees are provided with feedback on their quality performance (effective top-down and bottom-up communication)					
2	All employees believe that quality is their responsibility					
3	Employee satisfaction is formally and regularly measured					
4	Employee flexibility, multi-skilling and training are actively used					
5	Employees are involved in design and planning					
	Customer Focus	1	2	3	4	5
1	The company actively and regularly seek customer input to identify their needs and expectations					
2	Customers are involved in product and service design process					
3	The company has effective process for resolving customer complaints					
4	Customer complaints and grievances are used to improve on product and service quality					
	Innovation, information and analysis	1	2	3	4	5
1	We are able to gather information and data from customers and about competitors and analyzing them					
2	We have undertaken benchmarking on our products, services, technology and human resource policies and practices					
3	Data is analyzed using computer for managers to make accurate decisions					

Long Term Supplier Relationship		1	2	3	4	5
1	Suppliers work closely with the company in product development					
2	The company evaluate the performance of suppliers					
Quality Focus		1	2	3	4	5
1	Customer requirements are effectively disseminated and understood throughout the workforce					
2	Products and services produced meet the customer demands effectively					

Part C: Competitive Advantage

To what extent has your company experienced the following outcomes as a result of practicing TQM? Use 1. Very low extent; 2. Low extent; 3. Moderate extent; 4. Great extent; 5. Very great extent

Competitive advantage		1	2	3	4	5
1	We are able to offer prices as low or lower than our competitors due to cost minimization					
2	We are able to compete based on quality of services and products					
3	We deliver customer orders on time					
4	We offer differentiated products and services to our customers					
5	Increased Revenues					
6	Enhance economies of scale due to greater efficiency					
7	Creating uniquely desirable products and services					

Thank you very much for your cooperation.

Appendix III: List of Transport Companies in Mombasa County

	Name of Company
1	A A Transporters Ltd
2	Aatsons
3	Afreen Enterprises
4	Afrofreight Forwarders
5	A K Abdulgani
6	Al Zakwan Transporters Ltd
7	Anwarali & Brothers
8	A O Said Transporters
9	ASG Transport Ltd
10	Awale Transporters
11	Buzeki Group Of Companies
12	Coast Agency
13	Coast Hauliers
14	Crossline Ltd
15	Daham Transporters
16	Eastex Kenya Ltd
17	Easy Transporters Ltd
18	Elmi Transporters
19	Emmess Transport Ltd
20	Fast Movers & Hauliers
21	Gaab Transporters Ltd
22	Geomit Agencies Ltd
23	Habo Agencies
24	Hakika Transport Services
25	Hercules Transport Co Ltd

26	Highway Carriers
27	Hussein Dairy Ltd
28	Issa Transport Company
29	Jekean Enterprises
30	K Logistics
31	Kara Roadways
32	Kyoga Investments Ltd
33	Leon Transporters
34	Mahadhi Transporters Ltd
35	Malde Transporters
36	Mapp Holdings Ltd
37	Milan Freight Services (K) Ltd
38	Mohamed Ahmed Bayusuf & Sons Ltd
39	Mukhi & Sons
40	Pallet Logistics Ltd
41	Panal Freighters Ltd
42	P N Mashru
43	Port Transport Co Ltd
44	Quantum Logistics
45	Rashid Amir Transporters
46	Roadsea Link
47	Roadtainers
48	Roadtainers (Mombasa) Ltd
49	Romark
50	Sasa Logistcs Ltd
51	Shiva Carriers Ltd
52	Shreeji Enterprises

53	Star Transport Co Ltd
54	Taib A Bajaber & Co Ltd
55	Taslim Transport Limited
56	Tornado Carriers
57	Trans Express
58	Transeast Ltd
59	Tranzahi Co Ltd
60	Ufanisi Freighters
61	Umotrans Hauliers

Source: businesslist.co.ke

Appendix IV: Mean of Each Correspondent

Transport and logistics firms	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇
1	3	3.43	2	3.24	3.67	3.13	3.37	3.1
2	3.67	3.65	2.13	4.13	3.86	3.57	2.46	3.48
3	4.1	4	2.56	2.56	4.86	3.16	3.67	3.67
4	4.1	3.44	2.9	3.19	3.76	3.54	2.56	2.56
5	3.88	2.45	2.12	4.67	3.67	3.17	3.16	3.16
6	3.59	3.46	2.76	2.76	4.15	2.99	4.67	4.67
7	3.78	3.47	2.45	2.45	2.86	3.81	2.86	2.86
8	3.56	3.71	2.34	2.34	4.16	3.37	3.16	3.16
9	4.17	3.83	2.53	2.53	3.77	3.27	2.76	2.76
10	3	3.43	2.16	3.16	4.34	4.56	3.34	3.34
11	3.34	3.65	2.78	2.78	3.87	2.77	3.87	3.87
12	2.75	3.44	2.55	2.55	3.06	3.96	4.06	4.06
13	3.87	3.43	1.67	2.67	3.88	2.68	3.86	3.16
14	3.15	3.74	2.35	2.35	3.25	3.21	3.26	3.26
15	2.37	3.43	2.83	2.83	4.53	4.21	2.56	2.56
16	4	4.43	2.88	3.28	3.96	3.23	2.96	2.96
17	2.45	3.73	2.71	2.71	3.87	3.26	4.4	4.4
18	3.12	4.23	2.01	2.01	3.23	3.67	3.23	3.23
19	3.55	3.99	2.17	2.17	4.13	3.19	3.14	3.14
20	4.34	3.45	2.04	2.04	4.56	3.67	2.56	2.56
21	3.1	4.75	3.28	3.28	4.43	3.53	3.43	3.43
22	3.98	2.93	3.08	3.08	2.89	3.52	2.89	2.89
23	3.23	3.53	3.04	3.04	4.85	4.67	2.84	2.84
24	3.12	4.63	2.67	2.67	4.34	3.3	3.34	3.34
25	3.95	3.51	2	3.88	3.86	3.77	3.75	3.75
26	4.67	3.81	2.46	2.46	4.11	3.72	4.11	4.11
27	2.89	3.81	2.89	2.89	3.47	3.11	3.08	3.08
28	3.44	3.87	2.15	2.15	3.87	3.25	2.87	2.87
29	3.66	3.56	2.37	2.37	3.88	3.78	2.88	2.88

30	3.67	3.83	1.75	2.75	3.56	3.36	3.56	3.56
31	3.19	4.56	2.13	2.13	4.36	3.84	3.36	3.36
32	3.51	4.14	2.03	4.03	4.16	3.17	4.16	4.16
33	3	3.1	2.1	3.23	4.78	2.71	3.78	3.78
34	3.15	3.54	2.11	3.11	4.44	2.79	3.42	3.42
35	2.88	3.47	2.12	3.12	3.85	3.12	3.85	3.34
36	4.32	3.89	2.38	3.38	4.79	3.77	3.43	3.17
37	4.2	3.87	2.34	3.45	4.45	3.1	3.45	3.45
38	5	3.93	2	2.98	4.23	3.13	3.99	3.76
39	4	3.66	2.38	2.38	4.17	3.83	5	4
40	3.32	3.87	1.58	3.68	3.89	2	3.45	3.45
41	5	3.93	2.18	2.89	4.55	2.99	3.77	3.77
42	3.11	3.67	2.43	3.43	4.5	3.37	3.5	2.3
43	3.21	3.66	2.14	4.43	3.89	2.84	4.5	3.55
Overall Mean	3.56	3.72	2.36	2.96	4.02	3.37	3.45	3.35

Key: Y= Competitive Advantage; X₁= Leadership and Top Management Commitment; X₂= Learning Organization; X₃= Teamwork and Employee Commitment; X₄= Customer Focus; X₅= Innovation, Information and Analysis; X₆= Long-Term Supplier Relationship and X₇= Quality Focus