

**EFFECT OF TOTAL QUALITY MANAGEMENT PRACTICES ON OPERATIONAL  
PERFORMANCE OF COMMERCIAL BANKS IN MOMBASA COUNTY, KENYA.**

**BY:**

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## **DECLARATION**

The research project report is my original work and has not been submitted for the award of a degree at any other university.

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SIGNATURE.....

The research project has been submitted for the examination with my approval as the University supervisor

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## **DEDICATION**

I hereby dedicate this research project report to; my dad Mr. Benson Nyamari and my mother Mrs Wilter Moraa for their love, care, guidance and unwavering support in my academic journey. I will endeavour to do my best and support you in life.

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## TABLE OF CONTENTS

<b>DECLARATION.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>TABLE OF CONTENTS .....</b>	<b>v</b>
<b>LIST OF TABLES .....</b>	<b>viii</b>
<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b>ix</b>
<b>ABSTRACT.....</b>	<b>x</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the Study.....	1
1.1.1 Total Quality Management.....	2
1.1.2 Operational Performance.....	3
1.1.3 Total Quality Management and Operational Performance.....	5
1.1.4 Commercial Banks in Kenya.....	6
1.2 Research Problem.....	7
1.3 Research Objectives .....	9
1.4 Value of the Study.....	9
<b>CHAPTER TWO: LITERATURE REVIEW.....</b>	<b>11</b>
2.1 Introduction .....	11
2.2 Theoretical Foundation of the Study.....	11
2.2.1 Resource Based View.....	11
2.2.2 Theory of Constraints .....	12
2.3 Total Quality Management Practices .....	12
2.3.1 Top Management Support .....	13
2.3.2 Continuous Improvement .....	13
2.3.3 Training and Education .....	15
2.3.4 Teams (Employee Commitment).....	15
2.3.5 Culture (Focus on Quality).....	16
2.4 Empirical Review .....	17
2.5 Summary and Knowledge Gaps.....	19
2.6 Conceptual Framework .....	20
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>21</b>
3.1 Introduction .....	21
3.2 Research Design.....	21

3.3 Population of Study.....	21
3.4 Data Collection.....	22
3.5 Reliability and Validity .....	22
3.6 Operationalization of Research Variables.....	23
3.7 Data Analysis .....	30
3.7.1 Tests of Significance .....	31
3.7.2 Diagnostic Tests .....	32
<b>CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS.....</b>	<b>33</b>
4.1 Introduction .....	33
4.2 Response Rate .....	33
4.3 Demographic Information .....	33
Table 4.1: Respondents Academic Qualifications.....	33
Table 4.2: Length of Service with Bank.....	34
Table 4.3: Length of time the Bank has been in Existence .....	34
4.3 Diagnostic Tests .....	35
4.3.1 Tests for Normality.....	35
4.3.2 Reliability Tests.....	37
4.3.3 Tests for Multicollinearity .....	38
4.3.4 Test of Autocorrelation.....	38
4.3.5 Heteroscedasticity of the study variables .....	39
4.4 Extent of Adoption of TQM Practices .....	40
4.4.1 Leadership and Top Management Commitment .....	40
Table 4.7: Leadership Top Management Commitment.....	40
4.4.2 Training and Education .....	41
Table 4.8: Training and Education .....	41
4.4.3 Teams (Employee Commitment).....	42
4.4.4 Continuous Process Improvement .....	43
Table 4.10: Continuous process improvement .....	43
4.4.5 Culture (focus on quality).....	44
Table 4.11: Culture (focus on quality).....	44
4.5 Operational Performance.....	45
4.5.1 Cost Measures.....	45
4.5.2 Speed Measures .....	46
4.5.3 Flexibility Measures .....	47

4.5.4 Quality Measures .....	48
4.5.5 Dependability Measures .....	48
4.6 TQM Practices and Operational Performance .....	49
4.6.1 TQM Practices and Cost.....	51
4.6.2 TQM practices and Speed.....	53
4.6.3 TQM practices and Flexibility.....	55
4.6.4 TQM practices and Quality .....	58
4.6.5 TQM practices and Dependability.....	60
4.6.6 TQM Practices and Overall Operational Performance.....	62
<b>CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>66</b>
5.1 Introduction .....	66
5.2 Summary of the Study Findings.....	66
5.2.1 Extent of Adoption of TQM Practices.....	66
5.2.2 TQM practices and Operational performance .....	67
5.2 Conclusions .....	68
5.3 Recommendations of the Study .....	70
5.4 Limitations of Study.....	71
5.5 Suggestion for Further Studies .....	72
<b>REFERENCES.....</b>	<b>73</b>
<b>APPENDICES .....</b>	<b>77</b>
<b>Appendix I: Cover Letter .....</b>	<b>77</b>
<b>Appendix II: Research Questionnaire .....</b>	<b>78</b>
<b>Appendix III: Commercial Banks in Mombasa County .....</b>	<b>81</b>

## LIST OF TABLES

1.1.1 Total Quality Management .....	2
1.1.2 Operational Performance .....	3
1.1.3 Total Quality Management and Operational Performance .....	5
1.1.4 Commercial Banks in Kenya .....	6
2.2.1 Resource Based View .....	11
2.2.2 Theory of Constraints.....	12
2.3.1 Top Management Support.....	13
2.3.2 Continuous Improvement.....	13
2.3.3 Training and Education .....	15
2.3.4 Teams (Employee Commitment) .....	15
2.3.5 Culture (Focus on Quality) .....	16
3.7.1 Tests of Significance.....	31
3.7.2 Diagnostic Tests .....	32
Table 4.1: Respondents Academic Qualifications.....	33
Table 4.2: Length of Service with Bank.....	34
Table 4.3: Length of time the Bank has been in Existence .....	34
4.3.1 Tests for Normality .....	35
4.3.2 Reliability Tests .....	37
4.3.3 Tests for Multicollinearity .....	38
4.3.4 Test of Autocorrelation.....	38
4.3.5 Heteroscedasticity of the study variables.....	39
4.4.1 Leadership and Top Management Commitment.....	40
Table 4.7: Leadership Top Management Commitment.....	40
4.4.2 Training and Education .....	41
Table 4.8: Training and Education .....	41
4.4.3 Teams (Employee Commitment) .....	42
4.4.4 Continuous Process Improvement.....	43
Table 4.10: Continuous process improvement.....	43
4.4.5 Culture (focus on quality) .....	44
Table 4.11: Culture (focus on quality).....	44
4.5.1 Cost Measures.....	45
4.5.2 Speed Measures.....	46
4.5.3 Flexibility Measures .....	47
4.5.4 Quality Measures .....	48
4.5.5 Dependability Measures .....	48
4.6.1 TQM Practices and Cost .....	51
4.6.2 TQM practices and Speed .....	53
4.6.3 TQM practices and Flexibility.....	55
4.6.4 TQM practices and Quality .....	58
4.6.5 TQM practices and Dependability .....	60
4.6.6 TQM Practices and Overall Operational Performance.....	62
5.2.1 Extent of Adoption of TQM Practices .....	66
5.2.2 TQM practices and Operational performance.....	67



## **ABBREVIATIONS AND ACRONYMS**

<b>ANOVA-</b>	Analysis of Variance
<b>CBK-</b>	Central Bank of Kenya
<b>CPI-</b>	Continuous Process improvement
<b>ISO-</b>	International Organization for Standard
<b>OP-</b>	Operational Performance
<b>RBV-</b>	Resource Based View
<b>SPSS-</b>	Statistical Package for Social Sciences
<b>TOC-</b>	Theory of Constraints
<b>TQM-</b>	Total Quality Management

## **ABSTRACT**

Total Quality Management 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 in this research was to find out the effect of Total Quality Management on operational performance. This study employed a cross-sectional descriptive survey design. Cross-sectional study was considered to be most appropriate time horizon due to information gathering done at particular point in time over a short time period. The target population 41 commercial banks in Mombasa County and due to the small size of this population, there was no sampling hence the study was a census survey. Semi-structured questionnaires were the only data collection instruments. In this study, respondents from the 41 banks were issued with the questionnaires. Out of the 41 questionnaires, 31 responded and gave back their questionnaires which were analysed representing 76% response rate which was considered adequate. Data analysis with the help of SPSS produced descriptive statistics and correlation results. The results showed that all the five (5) TQM practices as independent variables had a significant relationship with operational performance. Nevertheless, TQM does not directly enhance the profits of these banks. Focus on quality and continuous process improvement had been adopted to a large extent while training and education, top management commitment and teams (employee commitment) commitment had been adopted to a moderate extent. Additionally, TQM practices were realised to have a positive effect on operational performance such that as TQM practice varies, the latter varies to a large extent. As per the findings, effective TQM produces high operational performance for commercial banks in Mombasa County. Overall, TQM has been adapted to a moderate extent and the effect of TQM on operational performance is also moderate. The study recommends that managers should look at TQM as a management principle that is more than top management, customer focus, focus on quality, team work, and training. It is a combination of all the TQM practices and implementing them successfully implies that determination and endurance are compulsory to find harmony for each firm.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The high level and force of competition in the globe has necessitated highly significant changes in the manner in which organizations carry out their business activities (Ahmad, Nahar & Al-Rfou, 2012). Incorporating quality in all aspects of operational performance has become a strategic tool in the dynamic operating environment (Hassan, Malik, Imran, Abbas & Amran, 2012). As a result of the growing levels of competition, demands of both current and potential customers for products and services of high quality, businesses are continually strategizing to beat competition (Addae-Korankye, 2013). Total Quality Management has been observed to be a set of guiding principles and a philosophy which exhibits an excellent organization's foundation (Besterfield, Besterfield-Michna, Besterfield, & Besterfield-Sacre, 1999). Deming (1995) has emphasized the importance of ensuring that all management subsystems are integrated so as to realize success in quality management.

In this study, the resource based view (RBV) and theory of constraints (TOC) were considered. This is because RBV explains the competitive heterogeneity on the premise that close competitors have a difference in their capabilities and resources in durable and important ways. TOC provides a logical set of tools which gives a framework that is structured to aide managers comprehend the relationships behind their current dilemmas, find an effective leverage position and a direction for changing the existing undesirable state to a desirable future at the same time implementing the specific improvement programs within the organization. For TQM to be effective, there should be quality focus, long-term supplier

relationships, continuous process improvement, top management involvement, training and education and employee involvement (Teece, Pisano & Amy, 1997).

Ogunbiyi and Ihejirika (2014) defined banking as an economic activity that intermediates funds between units with surplus and units with deficit in an economy and invests the resources in profitable ventures. Banks charge borrowers interest as compensation; the funds are raised through deposits which earns interest too. Interest is paid or received for a specific time period and are in a percentage form (Khan & Sattar, 2014). Commercial banks intermediates by mobilizing financial savings from economic units with a surplus to economic units with a deficit (Njure, 2014). The efficiency and effectiveness in intermediation function has a direct linkage with profitability of banks and economic progress of a country (Wainaina, 2013). Jessica Schubert (2015) identified the following as challenges that banks face: Not making enough money, high expectations from consumers, growing competitiveness from financial technology organizations and regulatory pressures. Hence the need to be efficient by adopting total quality management practices aimed at improving operational performance.

### **1.1.1 Total Quality Management**

Kotler (2000) has indicated TQM to be an approach whose aim is to continue improving quality in an organization's processes, products and services. The International Organization for Standards (ISO 2000:9001) exclaims TQM to be an approach by management of an organization aimed on quality where all members are participants with long-term success in mind resulting into customer satisfaction and society where it operates (ISO8402:1994). According to Godfrey (1999), TQM is centered on quality, focused on the customer, based on facts, driven by teamwork, led by senior management all of which are aimed at achieving the organization's strategy imperatively through ongoing process improvements. Wade (2008)

defines TQM as a structured and comprehensive approach by management team of an organization aimed at the improvement of the quality of outputs and services through continuous improvements based on feedback received.

A number of organizations have concluded that effective application of TQM can lead to improved competitive position due to best products and services which gives them an upper hand in the industries they operate in globally (Wade, 2008). As a result, customer loyalty is won, costs of production and service provision are reduced, employees are well informed and motivated shareholders are satisfied and there is a positive recognition (Gilbert, 1992). Integration of TQM throughout the organization helps in reduction of waste and error eradication (Youngless, 2000). Alemna (2001) pointed out that TQM embodies approaches and values that are common with concepts that are established throughout the organization.

Practices of quality management include: continuous improvement and innovation, strategic planning management, human resource management, supply chain management, process management, employee involvement and commitment, customer focus, and leadership (Barros, Sampaio & araiva, 2014).

### **1.1.2 Operational Performance**

Operational Performance refers to the measurement of actual outputs of an organization in relation to the set goals or expectations. It is the output of an organization driven by operations towards goals achievement financially, operations wise and organizational effectiveness (Venkatraman & Ramanujam, 1986, Richard et al, 2009). Operational performance entails those activities directed towards formation of organizational goals where the firm monitors the progress being made towards achievement of the goals and takes remedial action in case of any deviations (McNamara, 2013). Gibson (2010) defined

operational performance to be the end result of an organization that entails measures like set targets to be achieved within a given period of time. Operational performance is the ability of an organization to realize its objectives by offering high quality products aimed at beating the competition (Koontz and Donnell, 2003).

An organization can measure its operational performance based on its objectives including; cost, speed, quality, dependability, flexibility and innovation. Operational performance is the cornerstone that determines the future performance of an organization (Slack, Chambers & Johnston, 2010). Operational performance is the foundation that enables an organization to be competitive through provision of the capability to action customer feedback and step ahead of the competition (Jenkins, Ambrosini & Collier, 2007; Slack et al., 2010).

The actual goals of operational performance includes: processes quality, services and products. This implies that quality of processes, inputs and outputs are reviewed and continuous improvements done where necessary. The relationship between price and quality implies that focus on quality has a direct link on profit maximization (Kaynak, 2003; Slack et al., 2010). Speed improvement can be achieved through elimination of bottlenecks in the processes which results in slack of the entire process of production (Kaynak, 2003; Jenkins et al., 2007; Slack et al., 2010). Dependability as an aspect of quality implies how reliable, certain and consistent the processes and products of an organization are which results to a certain reputation that is seen as an intangible asset for the organization. Flexibility entails speed of product adaptability in meeting the varied customer demands in terms of specifications. Flexibility concerns delivery of a service and production of goods which implies that modes of delivering a service can lead to increased sales and flexible production methods can bring down costs and reduce lead times. Therefore it can be concluded that

flexibility is a cash flow and also an income generation objective (Porter, 1998; Kumar & Suresh, 2009). Customization means the specification and particularization of a product or service for the market aimed at ensuring customers feel valued thus promoting loyalty which assures future sales. Cost means the expenditure incurred in relation to the operations processes. Cost is a factor which organizations have to manage by waste minimization so as to realize profits from the margins of the income over the costs (Porter, 1998). Operational performance implies that customer needs are met and their requirements which revolve around quality, speed, dependability, flexibility and cost are addressed (Jenkins et al., 2007; Slack et al., 2010).

### **1.1.3 Total Quality Management and Operational Performance**

TQM is grounded on a number of principles aimed at increasing stakeholders' satisfaction by putting organizational resources into best use. Mann (1992) indicated that TQM is a quality processes tool, services and products and that quality processes leads to increased productivity that promotes an organization's competitive position. He noted that as quality improves, rework or waste is reduced thus enhancing customer satisfaction. For an organization to remain competitive in its processes and provision of products and services it has to follow Deming's 14 TQM principles that leads into generation of improved processes, services and products, reduced costs, promotes customer and employee satisfaction thus improving financial performance as bottom line (Deming, 1986). Practicing TQM means that employees are trained and empowered therefore committed and take responsibility of their work thus shaping their attitudes and behaviors in a manner that helps an organization avoid rework, wastages, recycling and inspections.

Operational performance should be focused on long term competitive advantage. This helps organizations to realize significant financial performance by reducing sales overheads,

reducing wastes, reworks and recycling. Reduction of operating costs and improvement of customer service has the potential of equal or more benefits as improved volume of sales. When TQM is observed in all levels and aspects of the processes right from design to after sales service, it leads to improved turnaround time thus avoiding delays and waiting time. Costs are also significantly improved when managers of an organization work towards achieving zero defects, nil reworks, recycles and wastages. Flexibility is also achieved when organizations can easily adopt changes as dictated by the operating environment or customer needs and requirements without jeopardizing on quality.

#### **1.1.4 Commercial Banks in Kenya**

As at 31 December 2016, the Kenyan banking sector composed of the regulator, central bank of Kenya, 43 banking institutions of which 1 is mortgage finance company, 42 are involved in commercial banking, 8 represent foreign banks offices, 13 are banks of microfinance in formation, 3 offer credit referencing bureaus, 17 carry out remittance of money and 77 provide bureaus for exchanging foreign monies. In the composition of the 43 banks, private investors own 40 banks, local shareholders own 25, foreigners domiciled outside kenya own 15. The 25 institutions owned locally included 24 banking institutions and 1 mortgage financial institution and out of 15 whose owners are foreign-owned, 11 are subsidize foreign banking institutions and 4 are a network of foreign banking institutions (CBK, 2016).

Commercial banks play the roles of lending money, accepting deposits, issuing bank drafts, processing payments, cheques, debit cards, credit cards and other account operating tools and finally offer safe custody deposit for customers. The four main challenges faced by banks in Mombasa County include not making enough money through profitability, consumer expectations, changing technology, competition from microfinance and financial technology companies and regulator's requirements and pressures that have continued to increase



(Schubert, 2015). As a result, quality of service as a practice under TQM becomes vital in helping banks manage customer expectations. Traditional banks find it a big challenge to adjust as quickly as situations may demand technologically, operations wise, culturally and on other dimensions of the banking industry. These challenges and others have continued to escalate, such that traditional banks in Kenya need to constantly do an evaluation and improvement on their operations so as to meet the fast pace of changes in the banking industry today. Traditionally interest rate (price of money) has been a critical factor for patronage, this has since changed as the rates are now regulated and the quality of the service offered by banks is now key. Poor quality of service leads to depletion of goodwill, which is very costly for any bank (Islam & Haque, 2012).

According to the CBK 2016, commercial banks have created employment of 33,695 staffs where Mombasa County is part of the beneficiary of the jobs created. Commercial banks have also been supportive in provision of finances to the people of Mombasa which has stimulated economic and personal development. A number of banks managed to give unsecured loans to borrowers who were mostly salaried and also small and medium enterprises. As at 31 December 2016, commercial banks had given out loan volume of 7,813,225 accounts which went to all sectors of the economy.

## **1.2 Research Problem**

Global competition is ever strengthening and with the increase in the demand for better quality products and services by buyers, organizations have come to the realization that the only option to survive in the business world is through delivery of high quality products and services that meets consumer expectations. A number of organizations, are therefore, spending considerable amounts of their funds in activities driven towards improvement of processes, products and services. With the growing application of TQM, more organizations

are now appreciating and recognizing TQM as among popular continuous improvement systems for quality. TQM leads to increased satisfaction of customers through participation of all workers (Demirbag et al, 2006). Competitiveness and customer satisfaction are the central themes considered in operational performance. Organizations are formed to create value and operational performance is tasked with the creation of that value. Improvements made on operational performance often result into lower costs and increased customer satisfaction. Therefore, operational performance is central to every organization as it determines its survival in the competitive world (Jack & Scott, 2003).

TQM as a philosophy has a potential of bridging the gap between the service provided by banks and customers' actual needs of the service. Unlike the manufacturing industry, in service sector the customer receives and consumes the service simultaneously and therefore the customer has high sensitivity on the quality of service, its delivery and the environment surrounding delivery and who provides the service (Safakli, 2004). The satisfaction of customers has a big link with the quality of service offered by banks (Joseph & Stone, 2003). In today's operating environment, banks are well aware about the reality of their success and existence in the globalized and very competitive environment they need to provide the best and high quality service for the consumers and potential customers (Wang & Hui, 2003).

Jitpaiboon and Rao (2007) and Teh, Yong, Arumugam and Ooi, (2009) carried out experiential studies on TQM and its effect on operational performance in the manufacturing sector and focused more on overall performance than operational performance. Mwaniki and Okibo (2014) did a study on the effect that TQM has on the performance of banking sector financially, National bank of Kenya being a case study, while this study looks at all banks based in Mombasa County. Ondiek, Kisombe and Magutu (2013) did a study on lean

operation tools and techniques used in the sugar industries in Kenya while this study is on service sector. Internationally, studies such as Al-Ettayem, and Zu'bi, (2015) have been done on TQM and its effect on operational performance, while this study is on local context.

There is still a gap for more studies on the subject to be undertaken in services industry especially the banking sector. Nevertheless some efforts in the area of applicability of TQM practices have been done in various sectors but there exists lack of methodical empirical evidence about the effect of TQM adoption on operational performance in the banking sector. Therefore the study analyzed the effect TQM practices have on operational performance in the banking sector in Mombasa County by answering the question; what is the influence of total quality management practices on operational performance of commercial banks in Mombasa County?

### **1.3 Research Objectives**

The main objective of this study was to investigate the effect of total quality management practices on operational performance. The specific objectives were to;

- i. Determine the extent to which TQM practices have been adopted by commercial banks in Mombasa County.
- ii. Establish the effect of adopting TQM practices on operational performance of commercial banks in Mombasa County.

### **1.4 Value of the Study**

The study proposes to add to the body of knowledge, specifically in regard to TQM practices in light of the fast changing banking environment and hopefully rekindle the demand for further research notably looking into service quality and its effect on performance. The study further aims at clearly bringing out the correlation between TQM and operational

performance in commercial banks and outline the merits of adopting TQM as compared to doing things arbitrary.

The study also supplements the existing literature, and is an invaluable tool for institutions, academicians, students, individuals and corporate managers who intend to extend their knowledge on TQM management practices. Thus, this study is expected to increase body of knowledge to the scholars on the benefits of TQM practices adoption in the banking sector 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 application of TQM in the banking sector.

Policy makers and regulator would infer from the study on company initiatives especially the banking sector in promoting TQM practices to enhance efficiency. The study will enable the policy makers to have awareness of the effects of in-efficiencies on performance of banks. Moreover, this study will benefit the County Government of Mombasa, especially the trade side for making policy choices whose comprehensive objectives are to hasten the rate of growth in the banking sector with the help of the regulator through TQM practices.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

A review of literature on effect of selected total quality management practices on operational performance is done in this chapter. The chapter begins with a theoretical framework, followed by a discussion on total quality management practices, then conceptual framework, review of existing literature and a research gap.

### **2.2 Theoretical Foundation of the Study**

Theory of constraints (TOC) and resource based view are the theories that guided this study.

#### **2.2.1 Resource Based View**

RBV seeks to promote utilization and securing of the internal core organizational resources that provide a basis of competitive advantage and in order to remain competitive, firms must focus on their core competences (Prahalad& Hamel, 1990). Strategic capabilities of durability, transparency, transferability and replicability are the basis of sustainable competitive advantage of an organization and the main aim of developing a resource exploitation strategy is to exploit the revenues created by these resources (Grant, 1991).

Cost leadership, differentiation and focus are the main generic strategies that can make organizations attain competitive advantage (Michael, 1985). Sustainability and appropriability enables an organization to earn fruitful return from the resources it owns (Alberto & Dries, 2013). While RBV views organizations with superior systems or structures being profitable due to lower cost, improved quality and superior products, TQM implementation also improves quality and delivery performance which promotes customer value through cost reduction.

### **2.2.2 Theory of Constraints**

This theory is a philosophy of management advanced by Mr Elyahu Goldratt and Jeff Cox in their 1984 book titled 'The Goal is A Process of Ongoing Improvement.' The aim of TOC is to exploit process efficiency selectively at the most important areas and thus enhance profitability, excellence and other company objectives (Michal & Iveta, 2010). TOC can be seen as three distinct but interconnected areas of logistics, measurement of logistics and thinking logically; logistics include drum buffer rope, performance measurements include throughput accounting and Goldrat's five focusing steps while logical thinking include TOC thinking process (Mabin, Victoria & Steven 1999). The study intends to consider Goldrat five focusing steps and TOC thinking process.

Since constraints are like wastes adding no value, TOC aims at systematically identifying those constraints and eliminate them from the business system and this TOC focus coined to lean. In connection to TOC, TQM is a good concept since it lays emphasis on controlling costs while at the same time delivering value to customers. It is a process that involves continuous improvement on processes in order to deliver goods and services to customers that are of high quality (Womack & Jones, 1996).

### **2.3 Total Quality Management Practices**

Theoretically, there exists a positive correlation between TQM and organization financial performance (Akhtar, Zameer & Saeed, 2014; Gharakhani et al., 2013). Overall, TQM is a critical management system on organizational performance for improvement. TQM has been viewed as a universal remedy for different organizational problems including operational performance. Currently, successful organizations have an understanding that quality drives competitive advantage. Such organizations put customers first and defines quality as meeting and or exceeding the expectations of customer.

Based on past literature, the research will select on the following five (5) practices of TQM implementation for the study: commitment from top leadership and management, learning organization, cooperation and worker commitment and customer focus, continuous process improvement (information and analysis), and focus on quality (culture). These TQM aspects are discussed in the section below.

### **2.3.1 Top Management Support**

Commitment from management at the top levels is considered the most significant factor affecting implementation of TQM. The extent of involvement and commitment from senior management has a bigger bearing on the success of an organization (Singh & Dhalla, 2010). Leadership in the context of TQM implies administering and driving the vision (Mittal, 1999: 200). Subburaj (2005) observes that TQM based leadership positions the organization way in front of their competition in terms of profitability, revenues and employees morale. Effective leadership in TQM encompasses every person in the organization in addition of value to firm's activities.

Leadership is a precondition to practicing TQM and that the senior management should resolutely trust that TQM is the only way to do business 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. Senior management in any firm needs to be very clear about what to expect and in their aptitude to balance between practice and novelty, concentration and decentralization.

### **2.3.2 Continuous Improvement**

Continuous improvement, a quality philosophy that strives for continued improvements and ensures a workable process that should be constantly monitored for further improvements

(Juergensen, 2005). According to Laitinen (2002), all organizations need continuous improvement as it helps in streamlining workflows. Organizations that have efficient workflows are able to save on time and money, in return less time is wasted and effort, besides, it constantly improves operating overhead. Continuous improvement is indeed a motivating force behind most effective and efficient organizations (Bourne, 2001).

It is strongly believed that organizations that continuously measure how efficient its processes are often strive towards meeting more difficult and challenging objectives to realize customer needs resulting to continuous improvement. Continuous improvement is considered as ongoing efforts aimed at improving processes, services and products. These efforts are aimed at seeking 'incremental' improvement with time or "breakthrough" improvement all at once (Bhuiyan & Baghel, 2005). The drawback in this case is that it implies that there is an overall coordinated change process whereas continuous improvement is not just a top down process; rather all employees are involved in suggesting and implementing improvements.

Successful firms should strive to retain their internal processes and approaches once implemented (Zeithaml & Bitner, 2000). Regular monitoring helps these firms to remain competitive amongst their rivals. The key principle of continuous improvement is the creation of a culture of continuously looking for better ways of doing things. Culture affects the perception of the individuals and how seriously they take up the responsibilities given to them. It revolves around the values of the company, the norms, recognition and reward systems and communication between the management and employees (Guidon performance solutions, 2011).



### **2.3.3 Training and Education**

Training means an organization's planned effort aimed at facilitating its workers learn about competencies related to work, skills, behaviors and knowledge that are critical for the success in performing a job and being able to deliver (Mondy & Mondy, 2013). Training of employees is a crucial factor in quality management. Training helps increase the ability of employees to do a better job and keep up with the changing trends. Organizations that are able to fully utilize the skills of its employees are strategically positioned towards achieving its objectives (Singh & Dhalla, 2010).

Any organization should highly value its employees as they are the most strategic asset regardless of the number. Better performance will be derived from better employees. Employee education will help cultivate better performance. Therefore organizations should embrace continuous training of employees in order to improve their skills and knowledge which eventually will result in efficiency and effectiveness (Cervená, 2011). Due to radical change in technology and globalization, innovative ways are required so as to keep up with the trends and this can only be achieved through employee education and training programs (Vargas & Tian, 2013; Al-Ettayem & Zu'bi, 2015). Training and education promotes employees productivity, creates new skills, knowledge and abilities that results into satisfaction on their roles (Gagnon et al., 2013).

### **2.3.4 Teams (Employee Commitment)**

Doorewaard et al. (2002) observed team work as being a process of fulfilling the employees' needs to take charge of their work environment. Teamwork is seen as a set of behavioral skill set working collectively together with the aim of generating the best outcome (Jones & Hughes, 2011). Teamwork is a crucial aspect in the success of organizations as it results into organizations communicating with the goal and mission as set therein, leads to shared

information, encourages creativity, builds openness and trust and brings about empowerment of employees (Al-Ettayem&Zu'bi, 2015). Salas et al. (2010) holds the view that working as a team supports in maintaining competitive advantage when faced with challenges resulting from various events of the world and international markets.

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 among the key factors that affect the performance of an organization and its output (Abdullah, et al., 2009; Wehnert, 2009 Schroeder, 2008). They are of the view that the influence and participation of workers in the process of implementing TQM increases self-sufficiency, commitment and creativity which leads to organizational innovativeness. Easton and Jarrel (1998) observe that participation of employees in improving quality is based on working collectively in teams. Shenawy et al. (2007) observes that involving employees is supported through teams, which enhance employee gratification leading to higher efficiency and productivity.

### **2.3.5 Culture (Focus on Quality)**

An organization's main objective in designing its products or services is to fulfill and or exceed customer expectations and at the same time make a reasonable profit. It is because of customers that products and services are designed. Any organization that is customer focused and oriented has the advantage of maintaining a competitive advantage (Singh & Dhalla, 2010).

Quality's primary focus is meeting the requirements of customers and striving to exceed their expectations. An organization which is able to attract and retain the confidence of its customer and other stakeholders acquires sustained success (ISO, 2000:9001). The processes

involved in service delivery in organizations which is as a set of interconnected activities that results in products or services to be offered to customers must add value to the customers (Berman & Evans, 2013). This results in one activity (the process) having a direct effect on the other entity (customer). When variations that are not in conformity with quality standards occur, then the quality of the output or service is affected.

It is therefore imperative to maintain a strong check on aspects such as customer complaints then adjust where necessary. Some of the key indicators of a service include safety/risk of service, courteousness/employees' friendliness, procedures of preparing invoices and bills, approachability of service provider, responsiveness to requests and appearance of physical facilities, honesty, the willingness to listen to customer demands and requests and the ability to communicate clearly. Thus, customer focus happens where value is delivered to customers through enquiry of what satisfaction looks like and means in the face of customers (Berman & Evans, 2013; Cravens & Piercy, 2013).

## **2.4 Empirical Review**

Based on the data collected from earlier studies, the following studies were reviewed and compared and major findings outlined plus their conclusions. Kamal (2012) carried out a study to find out how TQM impacts competitive advantage of companies that manufacture pharmaceuticals in Jordan whose results showed existence of a positive effect where customer focus had the greatest impact on competitive advantage, people management next and last leadership. The conclusion is that TQM is tactically and strategically important to firms in gaining a competitive advantage. Olcay and Sadikoglu (2014) studied the impact TQM has on different measures of performance. Also, the study tried to investigate the barriers and reasons of TQM implementation in Turkish. This study showed that different

practices of TQM significantly affect outcome of performance. The obstacles faced by firms in implementing TQM are lacking awareness and commitment from employees, little employee involvement lack of resources and inappropriate firm structure. The conclusion was that firms should strive to improve on firm structure, awareness, involvement and commitment of employees on TQM and making available enough resources to overcome the obstacles which hinder effective implementation of TQM practices.

Rawashdeh (2014) carried out a study on TQM and effect on bank performance in Jordan. The outcome indicated that TQM practices leads to positive and significant impact on bank performance. Mohammed et al. (2014) carried out an analysis of organizational improvement through TQM. The findings reveal that organizational performance in terms of product quality, market share, improved morale of employees, profits, follow market trends and reducing competitive pressure.

Reed et al. (2000) investigated the validity of the claim that a sustainable competitive advantage can be generated by TQM. Basing the study on resource-based theory of an organization, market-based theory of competitive advantage, and systems theory, it was concluded that TQM leads to generation of competitive advantage. The study inferred that TQM is adept of generating a cost minimization or diversity-based superiority, and the complexity and tactness are innate in the process of TQM that have the possibility to create hurdles to coping are essential for sustainability.

Wachuka (2013) carried out a study on sustainability of Kaizen and operational performance of manufacturing firms in Mombasa County. Her findings showed that continuous improvement and organizational culture work together in seeking to achieve excellence through cost reduction, in turn increasing employees' retention and productivity as a result of doing the right thing. First, this study was done in manufacturing firms whereas the current

study is targeted at commercial banks. Second, the study established a connection between continuous improvement and organizational culture while the present study looks at TQM and operational performance. This study did not identify the specific continuous improvement practices that enhances performance and brings a gap the present study sought to fill.

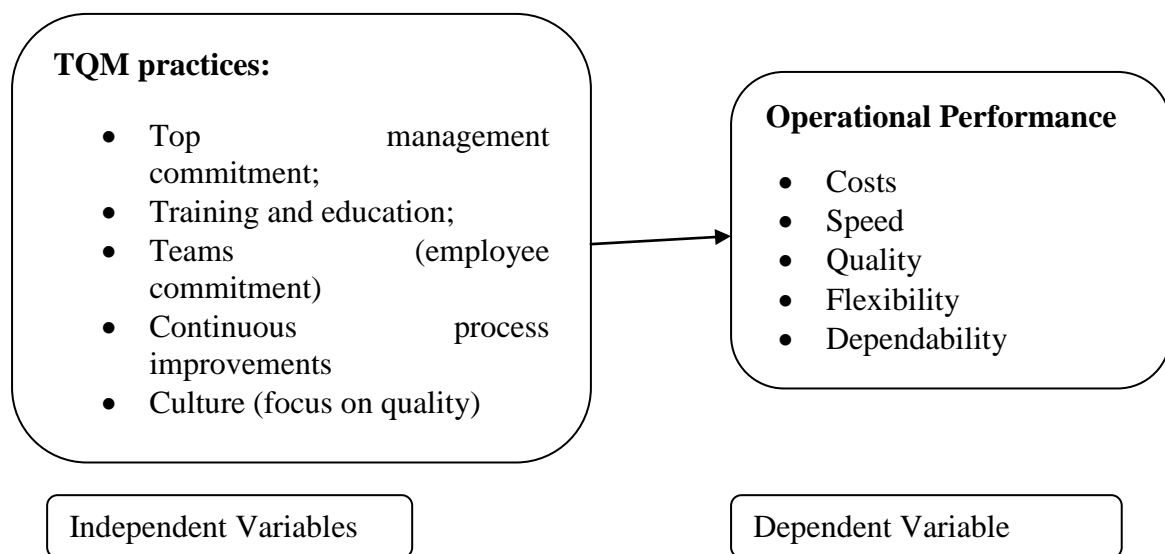
Muriithi (2014) did a study on TQM practices and performance of operations among Kenyan commercial banking institutions. The study made a focus on continuous improvement approaches and established that continuous improvement offers a benchmark for employees to continuously look for better ways of doing things to provide excellent services and products to their customers, hence creating a positive correlation between continuous improvement approaches and operation performance among commercial banks in Kenya. Whereas this study looked at continuous improvement approaches and tools of implementing continuous improvement, it ignored the correlation between other practices of TQM and operational performance which the present study sought to fill.

## **2.5 Summary and Knowledge Gaps**

Various studies did an analysis of TQM and its effect on operational performance with majority of them looking at only narrow aspects of TQM. Based on the theoretical association that exists between quality and performance, it is therefore admissible that TQM can be employed in promotion of operational performance (Tobin, 1990; Reed et al., 2000). The current study therefore is aimed at filling in the gap in Kenyan context by looking at the connection between TQM and operational performance among commercial banks in Mombasa County. The idea in this study is to show that unified events in banks have a great input towards improving efficiency, reduces time and other wastages and saves costs.

The past studies established contradicting results. Some studies found TQM to have positive impact on performance and competitive advantage (for example Mielgo-López, Vázquez-Ordás & Montes-Peón, 2009; Martínez-Lorente & Martínez-Costa, 2008; Hulland & Sarkees, 2009; Moura E Sá & Abrunhosa, 2008; Hong & Prajogo, 2008). While others found it has no influence on competitive advantage and innovation (for example Álvarez-González & Santos-Vijande, 2007; Galia & Pekovic, 2009; Abrunhosa & Moura, 2007). To this extent, no comprehensive studies based on commercial banks in Mombasa County has been done. Therefore, existence of dearth of literature in this management area. This study will therefore add value to the knowledge that is already existing on this area.

## 2.6 Conceptual Framework



The study proposes the following hypothesis: H1 A significant and positive association between TQM and operational performance in banks does not exist.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

An explanation of the method and the research design that was employed in undertaking the study with respect to research questions is outlined in this chapter. The research methodology includes a discussion on the design of the research, the population involved in the study, instruments deployed in data collection, procedures of data collection, pilot test and analysis of data.

### **3.2 Research Design**

This study adopted a descriptive cross-sectional survey research design in collecting data from the respondents. Cooper and Schindler (2007) exclaimed that descriptive survey design discovers and measures causes and effects relationships among variables. It is an enabler that the researcher uses in collection of in-depth information regarding the population under study. This design is most preferred due to its complete description of the situation, ensuring occurrence of minimum bias in the research process (Kothari, 2008). Descriptive research design has the ability of determining and reporting issues as they are (Cooper & Schindler, 2007). Additionally, this research design is considered appropriate in this study as it allows the researcher to make conclusions on the variables of the study without manipulating the interviewee thereby ensuring measurements are fully controlled.

### **3.3 Population of Study**

All commercial banks operating in Mombasa county formed the population of interest. As at 31<sup>st</sup>Dec 2016, there were 41 commercial banks operating in Mombasa County (CBK, 2016). The study adopted a census method.

### **3.4 Data Collection**

This study used primary data. Semi-structured questionnaires were tools employed in collecting data which was then measured on a Likert scale of 1-5. Respondents were management staff either branch managers, operations managers or operations officers where one respondent per organization was targeted. These respondents were most suitable because they handled daily operations of the bank and had privy to the relevant information. The questionnaires were administered by dropping and picking as a methodology. They were then checked for completeness. The contents of the questionnaires were part A demographics and respondents profile, part B Total Quality Management practices and part C Operational performance.

### **3.5 Reliability and Validity**

After creating the questionnaires, a pilot test was done by the researcher to test if the instrument was reliable and valid. The final results from the tools of research were moderated from the data acquired. Pilot test in this context was a phase in which the research instruments were circulated to some subjects in the target population who were not part of the sample size in order to test how reliable and legitimate the instruments would be.

The extent to which the measuring instruments deployed in the research realized the purpose of the study confirmed its validity. Reliability of questionnaires and the internal consistency techniques was measured statistically using Cronbach's alpha. Where alpha value ranges from 0 to 1; reliability was directly proportional to the value. Mugenda and Mugenda (2003) stated coefficient of 0.6-0.7 was acceptable. A coefficient of 0.8 or greater shows higher level of reliability.



### 3.6 Operationalization of Research Variables

Construct	Sub construct	Indicators	Measurement Scale	Informing Literature
Selected TQM Practices (Independent)	Top management support	<ul style="list-style-type: none"> <li>Senior managers actively encourage change</li> <li>Leadership proactively pursue continuous improvement</li> <li>Top management clearly understands the fundamental spirits and principles of quality management</li> <li>Departmental heads accept responsibility for quality of goods</li> <li>Company's plan always incorporates external customers, suppliers and other</li> </ul>	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).

		<p>stakeholders</p> <ul style="list-style-type: none"> <li>• Management create synergy, interdependence and interconnections</li> </ul>		
	Training and Education	<ul style="list-style-type: none"> <li>• Statistical methods to measure and monitor quality training</li> <li>• Management training in quality principles</li> <li>• Learning organization</li> <li>• Employees' learning of job-related competencies,</li> </ul>	<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 &amp; Mustafa, 2013).</p>
	Teams (employee commitment)	<ul style="list-style-type: none"> <li>• Feedback on their quality performance</li> <li>• Employees believe that quality is their responsibility</li> </ul>	<p>5 point Likert Scale where;</p> <p>1 -Strongly Disagree</p>	<p>Powell, 1995; Yildirim, 2012; Reed et al., 2000;Kaynak, 2003; Bon</p>

		<ul style="list-style-type: none"> <li>Employee satisfaction is formally and regularly measured</li> <li>Employee flexibility, multi-skilling and training are actively used</li> <li>Involved in in design and planning</li> </ul>	<p>2 - Disagree</p> <p>3 – Neutral</p> <p>4 - Agree</p> <p>5 - Strongly Agree</p>	& Mustafa, 2013).
	Culture (focus on quality)	<ul style="list-style-type: none"> <li>Seek customer input to identify their needs and expectations</li> <li>Customer involvement in product and service design process</li> <li>Resolving customer complaints quickly</li> <li>Improve on product and service quality</li> </ul>	<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>	Reed et al., 2000;Kaynak , 2003; Bon & Mustafa, 2013); Hendricks & Singhal (2000); Cravens & Piercy, 2013

		<ul style="list-style-type: none"> <li>Meeting the needs and expectations of customers</li> </ul>		
	Continuous Improvement	<ul style="list-style-type: none"> <li>Big data analytics</li> <li>Benchmarking our products, services, technology and human resource policies and practices</li> <li>Managers make accurate decisions using analysed data</li> </ul>	5 point Likert Scale where; 1 -Strongly Disagree 2 - Disagree 3 – Neutral 4 - Agree 5 - Strongly Agree	Kamal, 2012; Hoang, et al., 2010; Ibrahim, et al., 2011; Reed et al., 2000;Kaynak, 2003; Bon & Mustafa, 2013).
Operational Performance (Dependent)	<ul style="list-style-type: none"> <li>Costs</li> </ul>	We are able to offer prices as low or lower than our competitors due to cost minimization  We are able to compete based on quality of services	5 point Likert Scale where; 5 - Greater Extent 4 - Great Extent 3 -Moderate	Porter, 1998; Bon & Mustafa, 2013

		and products	Extent 2 - Low	
		Productive efficiency (utilizing all of its resources efficiently, producing most output	Extent 1 - Very Low Extent	
		Waste elimination, increased revenues and reduced inventory		
	• Speed	Speed of production and delivery of products to the market impacts cash flows  Less reworks and eliminating	5 point Likert Scale where; 5 - Greater Extent 4 - Great Extent 3 -Moderate	Porter, 1998; Bon & Mustafa, 2013

	<p>bottlenecks in production</p> <p>Reduced lead time to fulfil customer orders</p>	<p>Extent</p> <p>2 - Low</p> <p>Extent</p> <p>1 - Very Low</p> <p>Extent</p>	
<ul style="list-style-type: none"> <li>Flexibility</li> </ul>	<p>Product adaptability in meeting the varied customer demands in terms of specifications</p> <p>Flexible modes of service and product delivery increases sales and reduces costs</p>	<p>5 point Likert Scale where;</p> <p>5 - Greater</p> <p>Extent</p> <p>4 - Great</p> <p>Extent</p> <p>3 -Moderate</p> <p>Extent</p> <p>2 - Low</p> <p>Extent</p> <p>1 - Very Low</p> <p>Extent</p>	<p>Porter, 1998;</p> <p>Bon &amp; Mustafa, 2013</p>
<ul style="list-style-type: none"> <li>Quality</li> </ul>	<p>Continuous improvement and innovation</p> <p>Quality Management</p>	<p>5 point Likert Scale where;</p>	<p>Porter, 1998;</p> <p>Bon &amp; Mustafa,</p>

	System  Training and education	5 - Greater Extent  4 - Great Extent  3 -Moderate Extent  2 - Low Extent  1 - Very Low Extent	2013
• Dependability	Enhance economies of scale due to greater efficiency  Customer focus  We deliver customer orders on time	5 point Likert Scale where; 5 - Greater Extent  4 - Great Extent  3 -Moderate Extent  2 - Low Extent	Porter, 1998;  Bon & Mustafa, 2013

			1 - Very Low Extent	
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### 3.7 Data Analysis

Linear regression analysis was used in analyzing the data to establish whether a relationship existed between dependent and independent variable(s). Operational performance was the only dependent variable and top management commitment, training and education, teams (employee commitment), continuous process improvements and cultures (focus on quality) were the independent variables. Received questionnaires were checked for completeness, consistency and accuracy.

Collected data was analyzed using Statistical Package for Social Sciences (SPSS version 21). Descriptive statistics was used to analyze data from various categories. Further, statistical inference was done to ascertain the results of the study. In particular, to achieve the set objectives, the following analysis methods were employed: In objective 1, descriptive analysis included tables, graphs and statistical measures were used. Descriptive statistics were used for the description of what was happening on the data. For objective 2, regression analysis was used in determining the correlation between the variables of study. This was determined by analyzing the variables and getting a Pearson correlation coefficient to measure the linear significance of two-attributes. The correlation coefficient ranged from -1 (perfect negative correlation) to +1 (perfect positive correlation) and 0 (no correlation at all). Inferential statistics was also used to show the model diagnostic test and if the model was overall significant. Inferential statistics was used to try to infer from the sample data what the population might think while R-squared was used to show what variation in dependent variable was explained by independent variables.



From the regression model the following regression equation was derived:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e.$$

Where,

Y=Operational performance (cost, flexibility, dependability, quality, speed)

$\beta_0$ =Constant,

B=Coefficients to be estimated,

$X_1$ =Top management support

$X_2$ =Continuous improvement,

$X_3$ =Training and education,

$X_4$ =Teams (employee commitment),

$X_5$ =Culture (focus on quality),

e=Error term

### **3.7.1 Tests of Significance**

T-tests were used in testing how significant the relationship between the dependent and independent variables exists. A key statistic was  $R^2$  which was a measure of goodness of fit was used to indicate the percentage variance in the dependent variable and independent variables.

### **3.7.2 Diagnostic Tests**

Tests done on the data to establish presence of multicollinearity. Multicollinearity problem testing was done using Variance Inflation Factors (VIFs). Multicollinearity problem existed when some independent variables were highly related. When VIFs was used to detect for multicollinearity, any individual VIF greater than 10 indicated multicollinearity and average of all VIFs considerably greater than 1 also indicated multicollinearity (Black, Hair, Anderson & Babin, 2010). Multicollinearity was used to identify the presence of endogeneity in the explanatory variables.

## **CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS**

### **4.1 Introduction**

This study sought to investigate the effect of total quality management practices on operational performance of commercial banks in Mombasa County. Presentation of the findings from the data analysis in line with the research objectives is done in this chapter. 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**

This study was a census survey of 41 commercial banks in Mombasa County. In order to collect data, 41 questionnaires were issued out to one respondent per bank, branch managers, operations managers or operations officers involved in operational aspects of running the banks. Out of the 41 questionnaires, 31 questionnaires were received and analysed representing 76% response rate which was considered adequate.

### **4.3 Demographic Information**

The respondents were requested to show their highest academic qualification. Results are as per table 4.1.

**Table 4.1: Respondents Academic Qualifications**

	Frequency	Percent
Certificate	3	10
Diploma	9	29
Bachelor's Degree	12	39
Master's Degree	7	22
PhD	0	0
<b>Total</b>	<b>31</b>	<b>100</b>

**Source: Researcher (2017)**

As shown in table 4.1, a high number of the respondents (39%) had attained a Bachelor's then 29% had attained diplomas then 22% with Master's degree and finally 10% with certificates in various fields. This shows that the respondents had the ability to respond to questions relating to TQM and operational performance.

Moreover, the respondents were requested to show the length of time that they had served the bank. Results are as per table 4.2

**Table 4.2: Length of Service with Bank**

	Frequency	Percent
Less than 2 years	5	16
2-5 years	8	26
6-10 years	10	32
More than 10 years	8	26
<b>Total</b>	<b>31</b>	<b>100</b>

**Source: Researcher (2017)**

From table 4.2 above, most of the respondents (32%) had worked with their present companies for 6-10 years, 26% for 2-5 years, 26% for more than 10 years and finally 16% for less than 2 years. This shows that all the respondents had a better understanding of happenings in their firms.

The respondents were also requested to indicate the length of their company existence . outcome is as shown in table 4.3

**Table 4.3: Length of time the Bank has been in Existence**

	Frequency	Percent
Less than 5 years	10	32
5-10 years	8	26
10-15 years	11	36
More than 15 years	2	6

	Frequency	Percent
Less than 5 years	10	32
5-10 years	8	26
10-15 years	11	36
More than 15 years	2	6
<b>Total</b>	<b>31</b>	<b>100</b>

**Source: Researcher (2017)**

As shown in table 4.3, most respondents (36%) stated that their firms had been in existence for 10-15 years at the time of the study followed by those who indicated less than 5 years and more than 15 years at 6%. This shows that majority of the commercial banks under study have existed for more than 5 years a considerable amount of time to implement TQM practices.

### 4.3 Diagnostic Tests

The data was subjected to various diagnostic tests before the analysis so as to enable subsequent analyses.

#### 4.3.1 Tests for Normality

Table 4.4 below shows the Shapiro-Wilk and Kolmogorov-Smirnov tests which were conducted using the independent variables of the study. Since the variables are  $5 < 2000$  the Shapiro Wilk test was used and the data was found to be normally distributed because there were p-values were less than 0.05 at 5% level of significance

**Table 4.4 Shapiro-Wilk Tests of Normality**

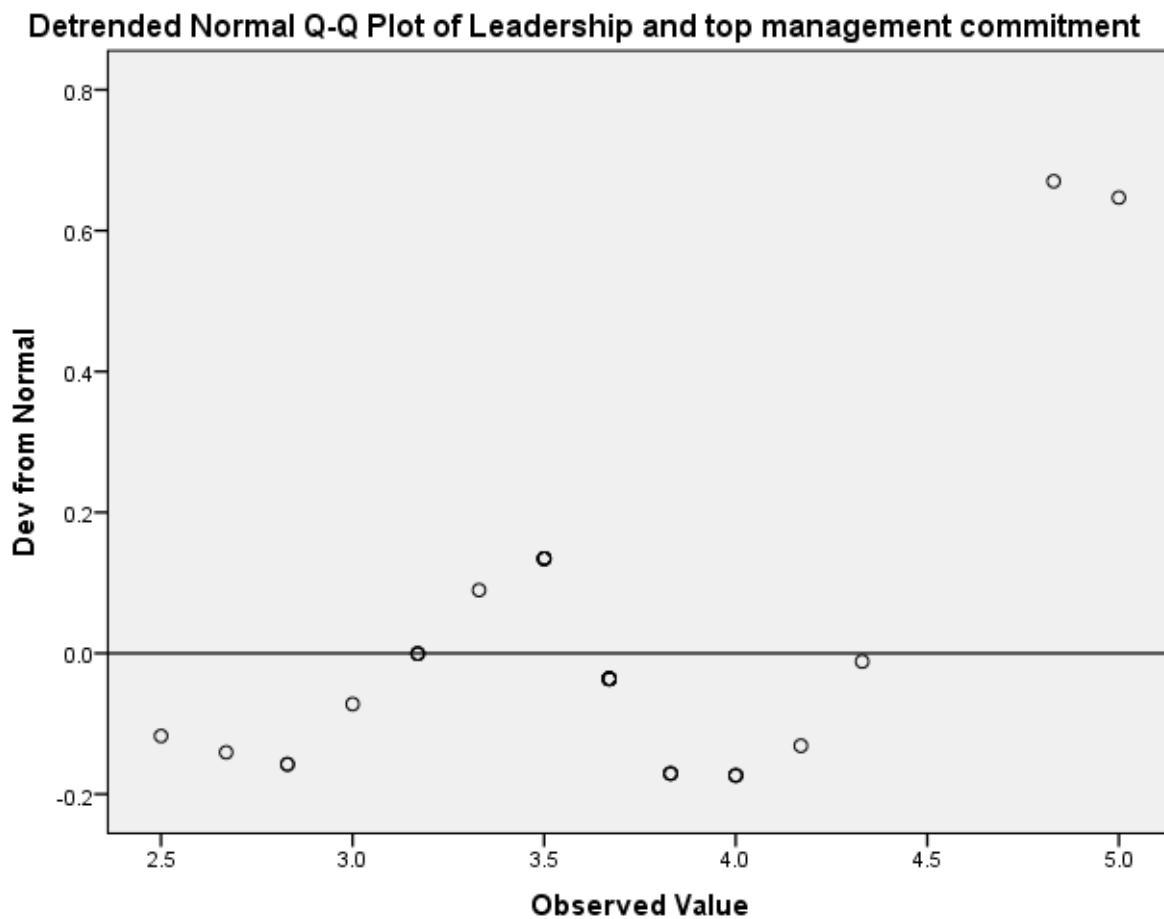
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Leadership and top management commitment	.137	31	.147	.960	31	.291
Training and Education Teams (employee commitment)	.154	31	.059	.935	31	.060
	.256	31	.000	.799	31	.000

Continuous Improvement Culture (focus on quality)	.211	31	.001	.924	31	.030
	.141	31	.120	.938	31	.072

Source: Research Data,2017

From the same Normality test, the Detrended Normal Q-Q plot of leadership and top management commitment (chosen arbitrarily) was generated to confirm normality of data as shown in figure 4.1 below

**Figure 4.1 Detrended Normal Q-Q Plot of Leadership and top management commitment**



Source: Research Data, 2017

The observed values follow an inverted ‘S’ pattern which shows that the values follow a normal distribution. It is therefore concluded that the research data is normal.

### 4.3.2 Reliability Tests

Cronbach’s alpha test was deployed to do reliability test. The test was mainly done with the purpose of measuring internal consistency of the study components, that shows how close a relationship exists in a set of components are as a group. The Cronbach's alpha values for this research are as indicated in table 4.8. Cronbach (1951) states that a reliability coefficient of 0.70 is considered “acceptable” in most social science research situations. Mosadeghrad and Yarmohammadian (2006) also states that an alpha value of 0.70 or more is considered as acceptable reliability for a study. The values of the Cronbach’s Alpha for the variables are as tabulated in Table 4.5 below;

**Table 4.5 Reliability Statistics**

<b>Variable</b>	<b>Cronbach's Alpha</b>
Leadership and top management commitment	.827
Training and Education	.795
Teams (employee commitment)	.754
Continuous Improvement	.795
Culture (focus on quality)	.754
Operational performance	.736
<b>Total</b>	<b>.808</b>

**Source: Research Data, 2017**

All the values of the Cronbach’s Alpha were all greater than 0.70 and hence the research instrument was considered reliable to be used in the study. This is because the findings reveal that most of the elements have relatively high internal consistency.

### 4.3.3 Tests for Multicollinearity

Multicollinearity problem exists when some independent variables are highly related (Pallant, 2007). One of the means of measuring or detecting multicollinearity is the use of variance inflation factor (VIF), which gives an assessment of the extent of the variance of an estimated regression coefficient will increase if your predictors are correlated. Without correlating any factors, the VIFs will all be 1 or less with tolerance values within the threshold of .1 (Hair et al., 2010; Martz, 2013). The results of multicollinearity for the variables under study are documented in Table 4.6 below.

**Table 4.6 Collinearity Statistics**

Variables	Collinearity Statistics	
	Tolerance	VIF
Leadership and top management commitment	.740	1.351
Training and Education	.576	1.735
Teams (employee commitment)	.423	2.366
Continuous Improvement	.674	1.483
Culture (focus on quality)	.560	1.786

**Source: Research Data, 2017**

As per indication in table 4.6, 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.

### 4.3.4 Test of Autocorrelation

Autocorrelation was tested using Durbin-Watson statistic which ranges in values of 0 to 4. Any value closer to 2 indicates non-autocorrelation; any value toward 0 shows positive autocorrelation; any value leaning towards 4 shows negative autocorrelation (Montgomery, Peck & Vining, 2001). Durbin-Watson refers to a test that the residuals from a linear regression or multiple regressions are independent. This study intended to test the null hypothesis of no autocorrelation in the residuals against the alternative that the residuals are

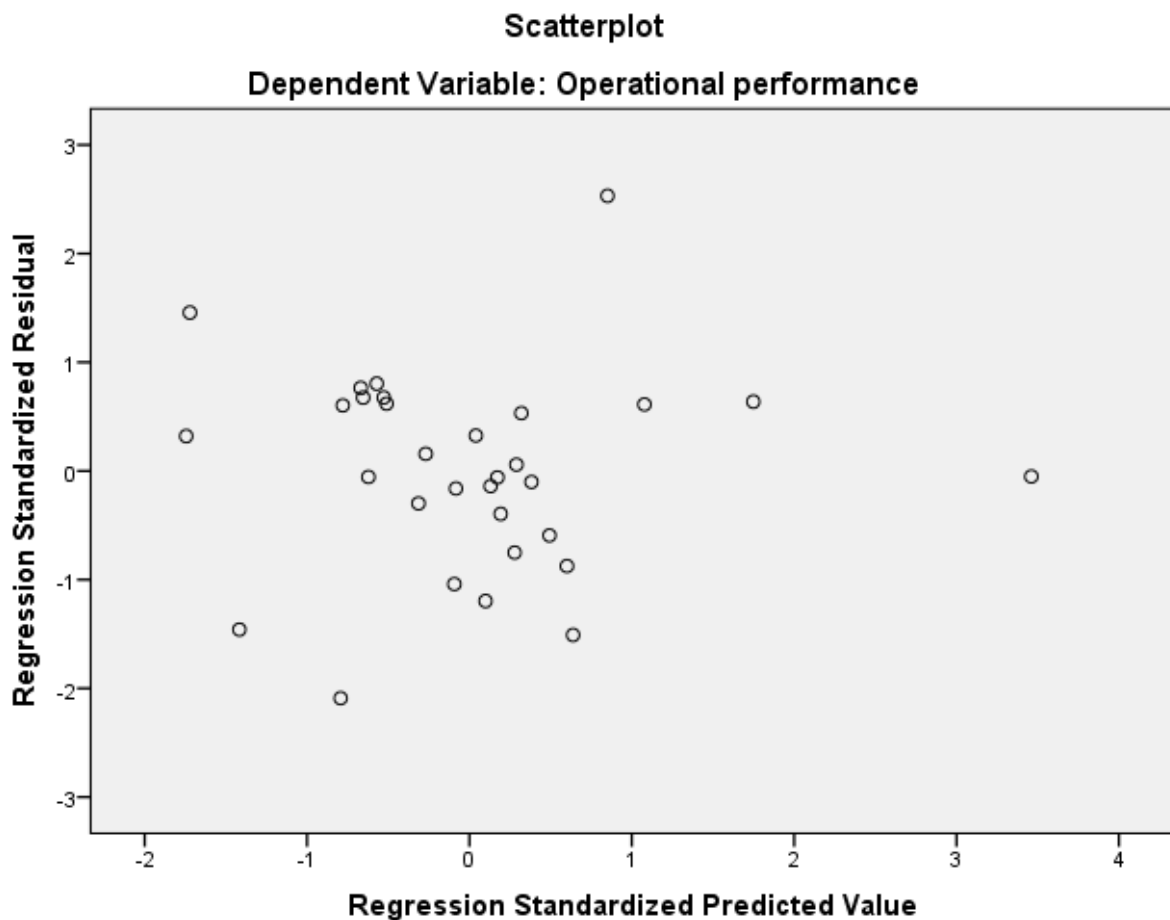


positively auto correlated at the 5% level of significance. Since the Durbin-Watson value in this study was 1.793 as per table 4.18 the null hypothesis will not be rejected. Thus, there was no autocorrelation.

#### 4.3.5 Heteroscedasticity of the study variables

Heteroscedasticity was measured using the scatter plot of the study variables. Heteroscedasticity is defined as the circumstance where the variability of a variable is not equal across a range of values of a second variable which predicts it. This is better shown by the scatter plot of operational performance against the standardized predictor variables as in figure 4.2

Figure 4.2 Scatter-plot of the study variables



Source: Research Data, 2017

This scatter plot reveals a non-linear relationship between  $X$  and  $Y$ . There is presence of Heteroscedasticity since there is a non-constant variation of operational performance against the predictor variables.

#### 4.4 Extent of Adoption of TQM Practices

The respondents were requested to show the extent to which the mentioned TQM practices have been adopted by their companies. This was measured on a scale of 1-5 where 1=Very low extent; 2=Low extent; 3=Moderate extent; 4=Great extent and 5=Very great extent. Results are shown in various tables below which shows the results for implementation of TQM practices in the firms surveyed.

##### 4.4.1 Leadership and Top Management Commitment

The descriptive statistics of the responses under leadership and top management commitment were tabulated as shown in Table 4.7

**Table 4.7: Leadership Top Management Commitment**

	Mean	S.Dev	Rank
Senior managers actively encourage change	3.42	1.148	6
Leadership proactively pursue continuous improvement	3.74	.682	1
Top management clearly understands the fundamental spirits and principles of quality management	3.71	.588	2
The departmental heads accept responsibility for quality of goods	3.55	.810	5
The company's plan always incorporates external customers, suppliers and other stakeholders	3.58	.958	4
Management views activities in our organization as a whole in order to create synergy, interdependence and interconnections	3.61	.715	3
<b>Overall mean</b>	<b>3.60</b>		

**Source: Researcher (2017)**

As shown above the study established that leadership proactively pursue continuous improvement had an overall mean of 3.74 implying that it was the most preferred TQM practice under top leadership and commitment, its standard deviation of .682 is the second

smallest and hence the second nearest to the overall mean. Additionally, when factors under top management commitment were analysed, top management clearly understands the fundamental spirits and principles of quality management high with a mean of 3.71 this had the smallest standard deviation of .588 implying the factor was the nearest to the overall mean while the company’s plans always incorporates external customers, suppliers and other stakeholders a mean of 3.58 had a standard deviation of .958 implying the factor is the second farthest from the overall mean. Generally, the results show that top management of commercial banks in Mombasa County are committed to some extent in improving operational performance through implementing TQM.

#### 4.4.2 Training and Education

The descriptive statistics of the responses under training and education were tabulated as shown in Table 4.8

**Table 4.8: Training and Education**

	<b>Mean</b>	<b>S.Dev</b>	<b>Rank</b>
The company encourages training and education to employees	3.58	.848	3
Statistical methods to measure and monitor quality training	3.90	.539	1
Management training in quality principles	3.65	.755	2
Training is imparted based on training need identification	3.52	.769	4
Training programs are constantly revised or update to fit with changing environment	3.58	.765	3
<b>Overall mean</b>	<b>3.65</b>		

**Source: Researcher (2017)**

As shown in table 4.8, the study found out that statistical methods to measure and monitor quality training had an overall mean of 3.90 and the standard deviation value of .539 is the smallest and thereby closest to the overall mean. This shows that the banks had adopted statistical methods to measure and monitor quality training to a moderate extent. When

factors under this practice were considered individually, the results show that the banks encourage training and education to employees with a mean of 3.65 and its standard deviation is .755 (the second largest) implying that the factor is the second farthest from the overall mean. The results also reveal that training programs are constantly revised or update to fit with changing environment to a small extent with a mean of 3.58 together with the company encouraging training and education to employees. A look at the standard deviations of these factors training programs had .765 the third farthest from the overall mean and encouraging training had .848, the farthest from the mean.

#### 4.4.3 Teams (Employee Commitment)

The descriptive statistics of the responses under teams (employee commitment) were tabulated as shown in Table 4.9

**Table 4.9 Teams (Employee Commitment)**

Statement	Mean	Std. Deviation	Rank
The employees are provided with feedback on their quality performance (effective top-down and bottom-up communication)	3.74	.682	3
All employees believe that quality is their responsibility	3.71	.693	5
Employee satisfaction is formally and regularly measured	3.65	.839	6
Employee flexibility, multi-skilling and training are actively used	3.77	.805	1
Employees are involved in design and planning	3.23	.884	8
Employees believe that quality is their responsibility	3.65	.798	6
Measurement and recognition	3.74	.893	3
Feedback on their quality performance	3.77	.669	1
<b>Overall Mean</b>	<b>3.66</b>		

**Source: Researcher (2017)**

In most banks, there was actively usage of employee flexibility, multi-skilling and training as shown by the highest mean of 3.77; this was jointly highest of feedback on employee quality performance. The twin factors were the most preferred. However, feedback had the least standard deviation of .669 implying it was closest to the overall mean as compared to the other factors. Measurement and recognition together with the employees are given feedback on their quality performance (effective top-down and bottom-up communication) had the joint second highest mean of 3.74. Implying that they were the second most preferred and used practices. The overall mean score for the factors under teams (employee commitment) was 3.66 which show that this TQM practice had been adapted to a moderate extent. There is a requirement for employee to be committed to their organizations in order to enhance operational performance.

#### 4.4.4 Continuous Process Improvement

The descriptive statistics of the responses under continuous process improvement were tabulated as shown in Table 4.10

**Table 4.10: Continuous process improvement**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Big data analytics is employed in my organization	3.71	.824	3
Benchmarking or our products, services, technology and human resource policies and practices	3.77	.669	1
Managers make accurate decisions using analysed data	3.42	.923	5
Training people at all levels on how to apply basic tools and methodology to achieve improvement objectives.	3.74	.631	2
Enabling self-evaluation of performance against personal objective.	3.55	.723	4
<b>Overall Mean</b>	<b>3.64</b>		

**Source: Researcher (2017)**

As per table 4.10, the study found out that Continuous process improvement (mean: 3.64) had been adapted to a moderate extent. Benchmarking of our products, services, technology and human resource policies and Training people at all levels of the organization on how the application of basic tools and methodology to realize improvement objectives had been adopted to a moderate extent at means of 3.77 and 3.74 respectively. Training people had the least standard deviation of .631 hence the nearest to the overall mean and benchmarking had a standard deviation of .669 implying it was the second closest to the overall mean. This means that commercial banks in Mombasa County have high continuous process improvement. The results could also imply that customer focus influences operational of the banks to a moderate extent.

#### 4.4.5 Culture (focus on quality)

The descriptive statistics of the responses under culture (focus on quality) were tabulated as shown in Table 4.11

**Table 4.11: Culture (focus on quality)**

Statement	Mean	Std. Deviation	Rank
Customer requirements are effectively disseminated and understood throughout the workforce	3.68	.653	4
Products and services produced meet the customer demands effectively	3.77	.669	2
Meeting the needs and expectations of customers	3.68	.653	4
Seek customer input to identify their needs and expectations	3.61	.667	6
Customer involvement in product and service design process	3.48	.996	7
Resolving customer complaints quickly	3.74	.855	3
Improve on product and service quality	3.90	.597	1
<b>Overall Mean</b>	<b>3.69</b>		

**Source: Researcher (2017)**

The study also sought to find out the extent to which quality focus had been adopted in the firms under study. In particular, improve on product and service quality had the highest mean of 3.90, implying it was the most preferred and adapted to a moderate extent. Its standard deviation of .597 is the least hence this factor is closest to the overall mean. Products and services produced meet the customer demands effectively had the second highest mean of 3.77 implying it was the second most preferred factor and was adapted moderately. Its standard deviation of .669 is the second smallest and hence this factor is second nearest to the overall mean. The overall mean was 3.69 which imply that focus on quality had been adapted to a moderate extent.

## 4.5 Operational Performance

The respondents were requested to show the extent to which their companies have increased operational performance as a result of practicing TQM. This was measured on a scale of 1-5 where 1=Very low extent; 2=Low extent; 3=Moderate extent; 4=Great extent and 5=Very great extent. Results are shown in the various tables in the subsections below.

### 4.5.1 Cost Measures

The various practices under cost were analysed and the subsequent descriptive statistics were tabulated in table 4.12 below;

**Table 4.12 Cost**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
We are able to offer prices as low or lower than our competitors due to cost minimization	3.42	.807	5
We are able to compete based on quality of services and products and not on costs only	3.87	.619	1
Productive efficiency (utilizing all of its resources efficiently, producing most output	3.74	.631	2

from least input)			
Waste elimination, increased revenues and reduced inventory	3.58	.720	4
Lowest amount of inputs to create the greatest amount of outputs	3.65	.798	3
<b>Overall</b>	<b>3.65</b>		

**Source: Research Data, 2017**

The most adapted practice under cost is we are able to compete based on quality of services and products and not on costs only which had a mean of 3.87, it was adopted moderately and most preferred. Its standard deviation of .619 was the least and hence nearest to the overall mean. The second most adapted practice was Productive efficiency (utilizing all of its resources efficiently, producing most output from least input) which had a mean 3.74 this implies it was adapted moderately and its standard deviation value of .631 was the second smallest and hence it was nearest to the overall mean. Generally, the overall mean of 3.65 shows that the cost practices was adapted moderately in operational performance.

#### **4.5.2 Speed Measures**

The various practices under speed were analysed and the subsequent descriptive statistics were tabulated in table 4.13 below;

**Table 4.13 Speed**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Speed of production and delivery of products to the market impacts cash flows	3.84	.583	1
Less reworks and eliminating bottlenecks in production	3.81	.601	2
Reduced lead time to fulfill customer orders	3.65	.608	3
<b>Overall Mean</b>	<b>3.77</b>		

**Source: Resource Data, 2017**



On the speed in operational performance, the speed of production and delivery of products to the market impacts cash flows had the highest mean and it was the most preferred factor and adapted moderately. Its standard deviation of .583 was the least and hence this factor was nearest to the overall mean. Less reworks and eliminating bottlenecks in production had the second highest mean of 3.81 and hence the second most preferred practice also moderately adapted. Its standard deviation of .601 was the second smallest; hence this factor was second closest to the overall mean. The overall mean of 3.77 implies that speed in operational performance was adapted moderately.

#### 4.5.3 Flexibility Measures

The various practices under flexibility were analysed and the subsequent descriptive statistics were tabulated table 4.14 below;

**Table 4.14 Flexibility**

Statement	Mean	Std. Deviation	Rank
Creating uniquely desirable products and services (minimal standardization)	3.55	.995	1
Adapting to changing demand quickly	3.45	1.091	3
Product adaptability in meeting the varied customer demands in terms of specifications	3.39	1.022	4
Flexible modes of service and product delivery increases sales and reduces costs	3.52	.996	2
<b>Overall Mean</b>	<b>3.48</b>		

**Source: Research Data, 2017**

On flexibility in operational performance, creating uniquely desirable products and services (minimal standardization) had the highest mean of 3.55 implying it was the preferred of the practices and was adapted moderately. Its standard deviation of .995 was the least amongst the values and thereby this factor was the closest to the overall mean. The second highest

mean was from flexible modes of service and product delivery increases sales and reduces costs with a value of 3.52. Its value of the standard deviation .996 was the second smallest and hence second closest to the mean. The overall mean of 3.48 shows that the flexibility in operational performance was adapted moderately.

#### 4.5.4 Quality Measures

The various practices under quality were analysed and the subsequent descriptive statistics were tabulated in table 4.15 below;

**Table 4.15 Quality**

Statement	Mean	Std. Deviation	Rank
Continuous improvement and innovation	3.71	.783	2
Quality Management System	3.81	.654	1
Training and education	3.71	.864	2
<b>Overall Mean</b>	<b>3.74</b>		

**Source: Research Data, 2017**

On quality in operational performance, Quality Management System had the highest mean of 3.81 and it was the most preferred and thus adapted moderately. Its standard deviation of .654 was the least .654 and hence the nearest factor to the overall mean. This was followed jointly by Continuous improvement and innovation and Training and education which had a mean of 3.71, they too were adapted moderately. Although, training and education was farthest from the overall mean with a standard deviation of .864 as compared to continuous improvement with a value of .783 standard deviation. The overall mean of 3.74 implies that quality in operational performance was adapted moderately.

#### 4.5.5 Dependability Measures

The various practices under dependability were analysed and the subsequent descriptive statistics were tabulated as shown in the table 4.16 below;

**Table 4.16 Dependability**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Rank</b>
Enhance economies of scale due to greater efficiency	3.55	.888	3
Customer focus	3.74	.729	1
We deliver customer orders on time	3.71	.783	2
<b>Overall Mean</b>	<b>3.67</b>		

**Source: Research Data, 2017**

On dependability in operational performance, customer focus had the highest mean of 3.74, implying it was the most preferred practice and its standard deviation of .729 shows that it was the nearest to the overall mean. Secondly, delivering of customers' orders on time had the second highest mean of 3.71 implying it was the second most preferred factor and thus adapted moderately. Its standard deviation of .783 is the second smallest and it is second nearest to the mean.

The tables discussed above imply that total quality management had impacted on operational performance to a moderate extent in the commercial banks in Mombasa County. More importantly, speed with a mean of 3.77 ranked high among the effects of TQM practices on operational performance although the other effects or benefits namely dependability, costs, speed and flexibility have also been experienced to a moderate extent after adopting TQM practices. Overall, the results show that TQM has a huge influence on operational performance among commercial banks in Mombasa County.

#### **4.6 TQM Practices and Operational Performance**

Each TQM practice was analysed versus the operational performance. The mean of each bank for the study variable was tabulated; a precursor to fitting the regression model, this is shown in Table 4.17 below;

**Table 4.17 Mean of Each Commercial Bank**

Commercial Bank	X1	X2	X3	X4	X5	Y1	Y2	Y3	Y4	Y5	Y
1	4.33	3.60	3.75	3.40	3.57	3.40	3.67	3.50	3.67	4.33	3.71
2	3.50	2.80	3.25	3.40	3.43	3.40	3.67	3.25	3.67	3.00	3.40
3	3.17	3.40	3.25	3.60	3.57	3.60	4.00	3.75	3.67	3.00	3.60
4	3.67	2.80	3.50	3.00	3.71	3.40	3.33	3.00	3.33	3.67	3.35
5	3.00	3.80	3.63	3.40	4.00	3.60	3.67	3.50	3.33	4.00	3.62
6	3.17	3.80	3.50	3.60	4.14	3.40	4.67	3.50	4.00	3.33	3.78
7	3.67	3.80	4.13	4.40	3.86	3.60	3.33	3.75	3.33	3.33	3.47
8	3.67	3.60	3.75	3.80	4.00	3.60	3.67	3.25	4.33	3.33	3.64
9	4.17	3.80	4.00	3.60	3.71	3.40	4.00	3.00	4.33	3.67	3.68
10	3.33	3.40	3.63	4.60	3.43	3.20	3.67	4.00	4.00	3.33	3.64
11	3.83	4.00	3.50	3.80	3.57	3.40	3.67	3.50	3.67	3.00	3.45
12	3.50	3.20	3.13	3.80	2.86	3.40	3.67	3.00	4.00	3.00	3.41
13	2.83	3.60	3.63	3.40	3.57	3.60	3.67	4.00	4.00	3.00	3.65
14	3.67	3.60	3.25	3.60	3.71	3.60	3.33	3.75	3.67	3.67	3.60
15	3.67	3.40	3.63	3.40	3.86	3.80	3.67	4.25	4.00	4.00	3.94
16	3.67	3.60	3.75	3.40	3.57	3.60	3.33	3.00	3.00	3.67	3.32
17	3.50	3.60	3.25	3.60	4.00	4.00	4.00	3.00	3.33	4.00	3.67
18	3.83	3.40	3.63	4.20	3.57	3.80	3.33	3.75	3.67	3.33	3.58
19	4.00	3.60	3.75	3.60	3.57	3.60	3.67	4.25	3.33	4.00	3.77
20	3.67	3.60	3.63	3.60	3.86	3.60	3.33	3.50	3.67	3.67	3.55
21	4.00	4.00	3.38	3.20	3.29	2.80	3.00	2.25	3.00	2.67	2.74
22	4.83	3.20	3.63	2.80	4.43	4.80	3.33	4.50	5.00	5.00	4.53
23	3.50	3.80	3.50	3.20	4.00	3.80	4.00	3.50	4.00	3.67	3.79
24	3.83	3.20	3.13	3.60	3.43	4.20	3.67	4.25	3.00	3.00	3.62
25	2.67	4.20	5.00	4.00	4.00	3.80	4.00	4.50	4.00	5.00	4.26
26	2.83	4.40	3.75	3.40	2.86	3.00	3.33	2.00	3.67	3.33	3.07
27	2.50	3.40	3.50	3.00	3.14	3.40	4.00	1.00	2.00	3.00	2.68
28	3.17	4.00	3.25	3.40	3.57	3.80	4.00	2.50	3.33	4.00	3.53
29	3.50	3.40	3.75	4.00	3.29	3.20	4.00	3.50	4.00	3.67	3.67
30	4.00	4.00	4.00	4.00	4.00	4.40	5.00	4.25	5.00	5.00	4.73
31	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Key: X<sub>1</sub>= Top management commitment; X<sub>2</sub>= Training and education; X<sub>3</sub>= Teams (employee commitment); X<sub>4</sub>= Continuous Improvement; X<sub>5</sub>= Culture (focus on quality), Y<sub>1</sub>= Costs, Y<sub>2</sub>= Speed, Y<sub>3</sub>= Flexibility, Y<sub>4</sub>= Quality, Y<sub>5</sub>= Dependability, Y=Operational Performance

#### 4.6.1 TQM Practices and Cost

Regression Analysis was conducted for the TQM Practices and Cost and the outcome was tabulated as shown in table 4.18 below;

**Table 4.18 Model Summary of TQM practices and Costs**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.772 <sup>a</sup>	.596	.515	.31970	1.499
a. Predictors: (Constant), Culture (focus on quality), Continuous process improvement, Training and Education, Leadership and top management commitment, Teams (Employee Commitment)					
b. Dependent Variable: Costs					

**Source: Research Data, 2017**

The value of the co-efficient of correlation R-value of .772 implies a near perfect positive association between cost and the TQM practices. The value of R-Square of .596 shows that the level of variation in costs contributed by the TQM practices is at 59.6%. This implies that 40.4% of the variation is contributed by other factors other than TQM practices. Next the ANOVA on costs table was generated as per table 4.19 below.

**Table 4.19 ANOVA of TQM Practices and Costs**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.762	5	.752	7.362	.000 <sup>b</sup>
Residual	2.555	25	.102		
Total	6.317	30			
a. Dependent Variable: Costs					
b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)					

**Source: Research Data, 2017**

The table 4.19 above clearly shows that the ratio of regression to residuals is positive, implying there was a significant correlation between the independent and dependent variables used in this study. It can be observed that the p-value (0.000) is the less than the level of

significance (0.05) confirming that the cost variable is significant. This justifies its inclusion in the regression model. Here the null hypothesis is not accepted and thereby there is a significant effect of cost on the TQM practices at Mombasa County. The coefficients of the regression model was fixed;

**Table 4.20 Coefficients of the Model for Cost**

Model	Unstandardized Coefficients		Beta	t	Sig.
	B	Std. Error			
(Constant)	.550	.664		.828	.416
Leadership and top management commitment (X <sub>1</sub> )	.151	.122	.183	1.241	.226
Training and Education(X <sub>2</sub> )	-.058	.176	-.056	-.332	.743
Teams (employee commitment)(X <sub>3</sub> )	-.035	.206	-.034	-.172	.865
Continuous Improvement(X <sub>4</sub> )	.045	.153	.046	.297	.769
Culture (focus on quality)(X <sub>5</sub> )	.740	.183	.687	4.042	.000

**Source: Research Data, 2017**

As per table 4.20 above, checking at the column for significance, most of the dependent variables are insignificant with values greater than the p-value of 0.05 except culture (focus on quality) which has a value of .000. Fixing the regression equation

$$Y_1 = 0.550 + 0.151X_1 - 0.058X_2 - 0.035X_3 + 0.045X_4 + 0.740X_5$$

It can be seen that when all the TQM practices are zeroes, the value of cost is .550, when the leadership and top management commitment increases by one unit, cost increases by 0.151 units. When training and education increases by one unit, cost decreases by 0.058 units. When teams (employee commitment) increases by one unit cost decreases by 0.035 units.

When continuous improvement increases by one unit cost increases by 0.045 units and finally when culture (focus on quality) increases by one unit the cost increases by 0.740 units.

#### 4.6.2 TQM practices and Speed

Regression Analysis was conducted for the TQM Practices and speed and the results were tabulated as indicated in table 4.21 below;

**Table 4.21 Model summary for TQM practices and Speed**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606 <sup>a</sup>	.367	.241	.40586

a. Predictors: (Constant), Culture (focus on quality),

Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

**Source: Research Data, 2017**

The value of the co-efficient of correlation R-value of .606 implies a positive association between speed and the TQM practices. The value of R-Square of .367 indicates that the level of variation in speed contributed by the TQM practices is at 36.7%. This implies that 63.3% of the variation is contributed by other factors other than TQM practices. Next the ANOVA on speed table was generated.

**Table 4.22 ANOVA for TQM practices and Speed**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.391	5	.478	2.904	.034 <sup>b</sup>
	Residual	4.118	25	.165		

Total	6.510	30			
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a. Dependent Variable: Speed

b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

The table 4.22 above clearly shows that the ratio of regression to residuals is positive, implying there exists a significant correlation between the independent and dependent variables deployed in this study. It can be observed that the p-value (0.034) is the less than the level of significance (0.05) confirming that the speed variable is significant. This justifies its inclusion in the regression model. Here the null hypothesis is not accepted and thereby there is a significant effect of speed on the TQM practices at Mombasa County. The coefficients of the regression model was fixed;

**Table 4.23 Coefficients of the Model for Speed**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.087	.843		1.290	.209
Leadership and top management commitment	-.189	.155	-.225	-1.219	.234
Training and Education	.241	.223	.226	1.080	.290
Teams (employee commitment)	-.129	.261	-.121	-.493	.626
Continuous Improvement	.277	.194	.277	1.430	.165
Culture (focus on quality)	.525	.232	.480	2.260	.033

a. Dependent Variable: Speed

**Source: Research Data, 2017**



As per table 4.23, checking at the column for significance, most of the dependent variables are insignificant with values greater than the p-value of 0.05 except culture (focus on quality) which has a value of .033. Fixing the regression equation

$$Y_2 = 1.087 - 0.189X_1 + 0.241X_2 - 0.129X_3 + 0.277X_4 + 0.525X_5$$

It can be seen that when all the TQM practices are zeroes, the value of speed is .1.087, when the leadership and top management commitment increases by one unit, speed reduces by 0.189 units. When training and education increases by one unit, speed increases by 0.241 units. When teams (employee commitment) increases by one unit speed decreases by 0.0129 units. When continuous improvement increases by one unit speed increases by 0.277 units and finally when culture (focus on quality) increases by one unit the speed increases by 0.525 units.

### 4.6.3 TQM practices and Flexibility

Regression Analysis was conducted for the TQM Practices and flexibility and the results were tabulated as shown in table 4.24 below;

**Table 4.24 Model summary for TQM practices and flexibility**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.769 <sup>a</sup>	.592	.510	.56673

a. Predictors: (Constant), Culture (focus on quality),

Continuous Improvement, Leadership and top management commitment, Training and Education,

Teams (employee commitment)

**Source: Research Data, 2017**

The value of the co-efficient of correlation R-value of .769 implies a positive association between flexibility and the TQM practices. The value of R-Square of .592 implies that the level of variation in flexibility contributed by the TQM practices is at 59.2%. This implies that 40.8% of the variation is contributed by other factors other than TQM practices. Next the ANOVA on flexibility table was generated

**Table 4.25 ANOVA Table for TQM practices and flexibility**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.640	5	2.328	7.248	.000 <sup>b</sup>
	Residual	8.029	25	.321		
	Total	19.669	30			

a. Dependent Variable: Flexibility

b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

The table 4.25 above clearly shows that the ratio of regression to residuals is positive, implying there was a significant correlation between the independent and dependent variables employed in this study. It can be observed that the p-value (0.000) is the less than the level of significance (0.05) confirming that the flexibility variable is significant. This justifies its inclusion in the regression model. Here the null hypothesis is not accepted and thereby there is a significant effect of flexibility on the TQM practices at Mombasa County. The coefficients of the regression model was fixed;

**Table 4.26 Coefficients of the Model for Flexibility**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.886	1.177		-1.602	.122
Leadership and top management commitment	.221	.216	.152	1.021	.317
Training and Education	-.660	.312	-.356	-2.117	.044
Teams (employee commitment)	.273	.365	.147	.749	.461
Continuous Improvement	.685	.270	.394	2.534	.018
Culture (focus on quality)	.941	.324	.495	2.901	.008

a. Dependent Variable: Flexibility

**Source: Research Data, 2017**

From table 4.26 above, checking at the column for significance, three variables (training and education, continuous improvement, culture (focus on quality)) had values that were less than the p-value of 0.05 hence significant while the rest were insignificant because of their values.

Fixing the regression equation

$$Y_3 = -1.886 + 0.221X_1 - 0.660X_2 + 0.273X_3 + 0.685X_4 + 0.941X_5$$

It can be seen that when all the TQM practices are zeroes, the value of flexibility is -1.886, when the leadership and top management commitment increases by one unit, flexibility increases by 0.221 units. When training and education increases by one unit, flexibility reduces by 0.660 units. When teams (employee commitment) increases by one unit flexibility increases by 0.273 units. When continuous improvement increases by one unit flexibility increases by 0.685 units and finally when culture (focus on quality) increases by one unit the flexibility increases by 0.941 units.

#### 4.6.4 TQM practices and Quality

Regression Analysis was conducted for the TQM Practices and flexibility and the results were tabulated as shown in table 4.27 below;

**Table 4.27 Model summary for TQM practices and Quality**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656 <sup>a</sup>	.430	.316	.51684

a. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

The value of the co-efficient of correlation R-value of .656 implies a positive association between quality and the TQM practices. The value of R-Square of .430 implies that the level of variation in quality contributed by the TQM practices is at 43.0%. This implies that 57.0% of the variation is contributed by other factors other than TQM practices. Next the ANOVA on quality table was generated

**Table 4.28 ANOVA for Quality and TQM Practices**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.040	5	1.008	3.773	.011 <sup>b</sup>
Residual	6.678	25	.267		
Total	11.718	30			

a. Dependent Variable: Quality

b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

**Source: Research Data, 2017**

The table 4.28 above clearly shows that the ratio of regression to residuals is positive, implying there was a significant correlation between the dependent and independent variables deployed in this study. It can be observed that the p-value (0.011) is the less than the level of significance (0.05) confirming that the quality variable is significant. This justifies its inclusion in the regression model. Here the null hypothesis is not accepted and thereby there is a significant effect of quality on the TQM practices at Mombasa County. The coefficients of the regression model was fixed;

**Table 4.29 Coefficients of the Model for Quality**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.492	1.074		-.458	.651
Leadership and top management commitment	.315	.197	.280	1.598	.122
Training and Education	-.051	.284	-.036	-.180	.859
1 Teams (employee commitment)	.196	.333	.137	.588	.562
Continuous Improvement	.232	.247	.173	.942	.355
Culture (focus on quality)	.467	.296	.318	1.578	.127

a. Dependent Variable: Quality

**Source: Research Data, 2017**

As per table 4.29 above, checking at the column for significance, all the variables had values that were greater than the p-value of 0.05 hence insignificant. Fixing the regression equation

$$Y_4 = -0.492 + 0.315X_1 - 0.051X_2 + 0.196X_3 + 0.232X_4 + 0.467X_5$$

It can be seen that when all the TQM practices are zeroes, the value of quality is -0.492, when the leadership and top management commitment increases by one unit, quality increases by 0.315 units. When training and education increases by one unit, quality reduces by 0.051 units. When teams (employee commitment) increases by one unit quality increases by 0.196 units. When continuous improvement increases by one unit quality increases by 0.232 units and finally when culture (focus on quality) increases by one unit the quality increases by 0.467 units.

#### 4.6.5 TQM practices and Dependability

Regression Analysis was conducted for the TQM Practices and flexibility and the results were tabulated as shown below;

**Table 4.30 Model summary for TQM practices and Dependability**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.785 <sup>a</sup>	.617	.540	.44463

a. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

The value of the co-efficient of correlation R-value of .785 implies a positive association between dependability and the TQM practices. The value of R-Square of .617 indicates that the level of variation in dependability contributed by the TQM practices is at 61.7%. This implies that 38.3% of the variation is contributed by other factors other than TQM practices. Next the ANOVA on dependability table was generated

**Table 4.31 ANOVA for Dependability and TQM Practices**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.949	5	1.590	8.042	.000 <sup>b</sup>
Residual	4.942	25	.198		
Total	12.891	30			

a. Dependent Variable: Dependability

b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment)

The table 4.34 above clearly shows that the ratio of regression to residuals is positive, implying existence of a significant correlation between the dependent and independent variables employed in this study. It can be observed that the p-value (0.000) is the less than the level of significance (0.05) confirming that the dependability variable is significant. This justifies its inclusion in the regression model. Here the null hypothesis is not accepted and thereby there is a significant effect of dependability on the TQM practices at Mombasa County. The coefficients of the regression model was fixed;

**Table 4.32 Coefficients of the Model for Quality**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.769	.924		-.833	.413
Leadership and top management commitment	.186	.169	.158	1.097	.283
Training and Education	-.034	.245	-.023	-.141	.889
Teams (employee commitment)	.821	.286	.546	2.868	.008
Continuous Improvement	-.356	.212	-.253	-1.680	.105
Culture (focus on quality)	.591	.255	.384	2.322	.029

a. Dependent Variable: Dependability

From table 4.32 above, checking at the column for significance, all the variables had values that were greater than the p-value of 0.05 all insignificant (with an exception of culture which had a value of .029) hence significant. Fixing the regression equation

$$Y_5 = -0.769 + 0.186X_1 - 0.034X_2 + 0.821X_3 - 0.356X_4 + 0.591X_5$$

It can be seen that when all the TQM practices are zeroes, the value of dependability is -0.769, when the leadership and top management commitment increases by one unit, dependability increases by 0.186 units. When training and education increases by one unit, dependability reduces by 0.034 units. When teams (employee commitment) increases by one unit dependability increases by 0.821 units. When continuous improvement increases by one unit dependability decreases by 0.356 units and finally when culture (focus on quality) increases by one unit the quality increases by 0.591 units.

#### 4.6.6 TQM Practices and Overall Operational Performance

Finally the overall TQM practices were regressed against the operational performance and the results tabulated as per table 4.33 below;



**Table 4.33 Model Summary of Operational performance**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.834 <sup>a</sup>	.696	.635	.28773	1.793
a. Predictors: (Constant), Culture (focus on quality), Continuous process improvement, Training and Education, Top Management Commitment, Teams (Employee Commitment)					
b. Dependent Variable: Operational Performance					

**Source: Research Data, 2017**

Table 4.33 shows the coefficient of determination  $R^2$  which tells us how variation in TQM practices adopted explains the changes or variation in operational performance. With  $R^2$  .696 for the model, this means that the independent variables (predictors) in the model (Culture (focus on quality), Continuous process improvement, Training and Education, Top Management Commitment, Teams (Employee Commitment) could offer about 63.5% explanation of the variation in the dependent variable (operational performance ). This means that as the TQM practices adopted by commercial banks change, operational performance varies 63.5%. This is a moderate relationship since 36.5% remaining is explained by other variables or factors not included in the model and represented by the error term. Hence the results reveal that the independent variables are key determinants of operational performance among commercial banks.

**Table 4.34 ANOVA of the Study on Operational Performance**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.736	5	.947	11.442	.000 <sup>b</sup>
Residual	2.070	25	.083		
Total	6.806	30			
a. Dependent Variable: Operational performance					
b. Predictors: (Constant), Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee					

commitment)

**Source: Research Data, 2017**

The table 4.34 above clearly shows that the ratio of regression to residuals is positive, implying there was a significant correlation between the dependent and independent variables used in this study. From the ANOVA above, it was established Culture (focus on quality), Continuous Improvement, Leadership and top management commitment, Training and Education, Teams (employee commitment) affected the Operational Performance. Since  $0.000 < 0.05$  at 5% level of significance and saddled with the following hypothesis;

H<sub>0</sub>: Total Quality Management Practices does not affect Operational Performance of commercial banks in Mombasa County, Kenya.

H<sub>1</sub>: Total Quality Management Practices affects Operational Performance of commercial banks in Mombasa County, Kenya.

Hence the null hypothesis is not accepted and this implies therefore that Total Quality Management Practices affects Operational Performance of commercial banks in Mombasa County, Kenya.

**Table 4.35: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.306	.598		-.513	.613		
Leadership and top management commitment	.136	.110	.159	1.244	.225	.740	1.351
Training and Education	-.113	.158	-.104	-.713	.482	.576	1.735
Teams (employee commitment)	.226	.185	.207	1.219	.234	.423	2.366

Continuous Improvement Culture (focus on quality)	.176	.137	.173	1.285	.211	.674	1.483
	.654	.165	.585	3.972	.001	.560	1.786

a. Dependent Variable: Operational performance

Overall, the consistency of regression coefficients on the predictors in the model suggest that these variables are important factors influencing operational performance 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 (variance inflation factor) <10.

The regression equation fit with the coefficients becomes;

$$Y = -.306 + 0.136X_1 - 0.113X_2 + 0.226X_3 + 0.176X_4 + 0.654X_5$$

When the independent variables are all zeros, this means that operational performance of the commercial banks is -.306. When leadership and top management commitment increases by one unit, operational performance increases by 0.136. When training and education increases by one unit, the operational performance reduces by 0.113. When teams (employee commitment) increases by one unit, operational performance increases by 0.226 units, when continuous improvement increases by one unit operational performance increases by 0.176 units and finally when culture (focus on quality) increases by one unit operational performance increases by 0.654 units.

## **CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter discusses the findings presented in the fourth chapter of the study in line with literature review. The central aim of this study was to investigate the effect of total quality management on operational performance. This chapter summarizes the findings of the study through the analyzed variables in this study. Thereafter, conclusions are made based on TQM practices and operational performance. 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 Five (5) TQM practices as independent variables had a significant relationship with operational performance ( $P < 0.05$ ).

#### **5.2.1 Extent of Adoption of TQM Practices**

This study sought to find out if TQM practices have been employed by commercial banks in Mombasa County. The findings reveal that TQM practices (Culture (focus on quality), Continuous process improvement, Training and Education, Top Management Commitment, Teams (Employee Commitment) have been adopted in the firms but at varying degrees. The results showed that culture (focus on quality) with a mean of 3.70 has been adopted to a moderate extent although customers are involved in product and service design process to a very low extent. Singh and Dhalla (2010) concur with this finding and states that any organization that is customer focused and oriented has the advantage of maintaining a competitive advantage. This could imply that customer focus influences operational performance of the banks to a moderate extent. This was followed by team (employee

commitment) at 3.66, then training and education with a mean of 3.65, continuous process improvement with a mean of 3.64 and finally top management commitment at 3.60.

The results show that whereas commercial banks focus on quality and continuous improvement, the same is supported by employee commitment and top management to a moderate extent. But when the significance levels were considered, the results showed that all the independent variables affected operational performance significantly at  $P < 0.05$ . Also, at  $R^2$  of 69.60% implies that the independent variables explain variation in operational performance to a large extent. Resource Based View theory corroborates the above findings that when firms focus on their core competences it enhances operational performance (Prahalad & Hamel, 1990).

In this study whereas TQM practices affects operational performance at varying degrees, effort should be directed towards enhancing the ones which have been implemented to a small and moderate extent. All TQM practices (Training and education, top management commitment, teams (employee commitment), Continuous process improvement and Culture (focus on quality) have been adopted to a moderate extent. This will create synergy and interconnectedness which will improve operational performance further.

### **5.2.2 TQM practices and Operational performance**

The study sought to investigate if TQM practices have the potential for generating enhanced operational performance. The overall mean for factors under operational performance was 3.66 showing that total quality management practices have impacted operational performance in commercial banks to a moderate extent. It appears that TQM practices have a huge effect on operational performance of commercial banks in Mombasa County. Nevertheless, effective TQM does not directly increase the revenues and profits of these commercial banks and this was evidenced by factors under cost having a mean of 3.65. In general, according to

this study finding, it can be concluded that effective TQM adoption results in high operational performance for commercial banks in Mombasa County.

The above results are supported by Akhtar et al. (2014) and Gharakhani et al., (2013) who state that theoretically, there exists a positive relationship between TQM and organization financial performance. Additionally, Rawashdeh (2014) who carried out a study on TQM and effect on bank performance found out that TQM practices leads to positive and significant impact on bank performance.

Thus, TQM is considered as a source of operational performance because it enables organizations to fulfil an increased level of its competitiveness and meet customer needs, and it is also a known sign of quality associated with cost and minimizes waste of time and effort. Hence commercial banks should continuously embrace TQM practices especially the ones which have been neglected in order to further enhance operational performance and performance.

## **5.2 Conclusions**

As evidenced in this study, TQM is a critical management system on organizational performance for improvement. TQM has been viewed as a universal remedy for different organizational problems including operational performance. 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 commercial banks. 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 specifically focus on quality, continuous process improvement, training and education, top management commitment and teams (employee commitment) have positive impact on operational

performance in Commercial banks albeit at varying degrees. All the TQM practices to a moderate extent.

The study found out that TQM results in increased operational performance for the commercial banks under study. This supports Reed et al. (2000) observations who investigated the validity of the claim that TQM has the potential of generating a sustainable operational performance. Based on market-based theory of operational performance, RBV theory of the firm, and systems theory. Reed et al. (2000) concluded the belief that TQM affects operational performance that is sustainable is warranted. TQM brings about cost- or differentiation-based advantage just like what Porter (1998) had stated.

Furthermore, Barney et al. (2011) and Teece (2007) reiterate that Resource Based View of an organization forms the basis upon which performance and operational performance can be predicted. In this study, achieving operational performance through TQM depends on how well resources such as human resource and capital allocation to various activities are done to address gaps in the market. The focus of RBV is on harnessing intangible resources especially human capital or human resources to gain operational performance over competitors. Kamal (2012) found out that TQM practices impacts positively on operational performance of Pharmaceutical manufacturing companies in Jordan. Additionally, Rawashdeh (2014) found out that TQM practices have positive and significant impact both on bank performance and operational performance.

Pearson correlation results also showed that all the independent variables had a significant positive correlation with operational performance at  $p < 0.05$ . Training and Education and Continuous Process Improvement had a weak positive relationship with operational performance at  $r = .334$  and  $r = .426$  respectively. Nevertheless, the results agree with findings by Kamal (2012) who found out that focus on quality and customer focus has the highest

impact on operational performance although the study was done in Pharmaceutical manufacturing companies in Jordan. Kamal (2012) also found out that people management followed customer focus in affecting operational performance then leadership subsequently. This stands contrary to the findings of this study done on commercial banks where top management commitment ranks third to focus on quality in influencing operational performance. This could imply that TQM practices affect operational performance differently in different sectors although Kamal (2012) has a feeling that TQM has a huge impact on operational performance regardless of the sector.

The correlation between TQM principles (culture (focus on quality), continuous process improvement, training and education, top management commitment and teams (employee commitment) and operational performance was expected to be positive. This implies that as TQM is implemented in commercial banks in Mombasa County, operational performance in terms of cost minimization, flexibility, dependability, speed and quality goes up. This relationship was captured using a simple regression model. Overall, the results indicates that with  $R^2$  of .696 as the model fit, the independent variable TQM principles could offer about 69.6% explanation of the variation in the dependent variable (operational performance). Therefore, on the basis of the findings of this study, the research question in this study has been answered and can be concluded that TQM generates high operational performance for in the commercial banks in Mombasa County.

### **5.3 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, interdependence and interconnections within the organization and between the organization and the environment (Meadows, 2008). This study recommends improvement in adoption of TQM practices because they have been



implemented to a moderate extent in the commercial banks. One or two practices of TQM may not bring out the desired operational performance compared to all practices working in synergy.

Second implication and recommendation of this study for practice is based on the fact that TQM is no easy work. There need for top management commitment to the TQM as a strategy. The commitment implies leading by example with provision of training and education and inculcating a culture that helps teams to flourish. Since TQM process is a system that has interactive components as intimated in this study, commitment to one part of the system is not likely to give the desired. Therefore, TQM entails more than leadership, culture, customer focus, supplier relationship, training and or teams. It is a combination of the entire practices working together. Success in implementation implies that perseverance and effort are incorporated to fix the right balance for every organization.

#### **5.4 Limitations of Study**

This study has a limitation of scope in two ways: first the study focused on the impact of TQM on operational performance and second it was done in commercial banks in Mombasa County and this may make this study unrepresentative. The small sample in this study decreases the generalizability to the whole banking 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.

Most respondents were afraid that their information will be exposed out to competitors because of confidentiality privacy policies. The researcher guaranteed confidentiality to the

respondents who were concerned of leakage of information given. This enhanced response rates and honesty in responses.

### **5.5 Suggestion for Further Studies**

Future research on the impact of effective TQM practices on operational performance could consider using quantitative data collection methods and in analysing them. To increase generalizability and reliability of findings, academicians could consider adopting bigger samples. Furthermore, future studies could give a focus on organizations with different characteristics from various sectors to examine the impact of effective TQM on operational performance. This will help in explaining how firm characteristics or sector affects success of TQM.

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## APPENDICES

### **Appendix I: Cover Letter**

Paul Nyamari

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**Mombasa.**

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Dear Respondent,

### **RE: RESEARCH QUESTIONNAIRE**

This questionnaire (attached) is designed to gather information on the effects of total quality management practices on operational performance of commercial banks in Mombasa County. This study is being carried out for a management project paper as a requirement in partial fulfilment 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,**

**Paul Nyamari**

**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

Tick(√) once

	<b>Leadership and top management commitment</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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	Departmental heads accept responsibility for quality of goods					
5	Company’s plan always incorporates external customers, suppliers and other stakeholders					
6	Management create synergy, interdependence and interconnections					
	<b>Training and Education</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	The company encourages training and education to employees					
2	Statistical methods to measure and monitor quality training					
3	Management training in quality principles					



4	Statistical methods to measure and monitor quality training					
5	Management training in quality principles					
6	Training is imparted based on training need identification					
7	Training programs are constantly revised or update to fit with changing environment					
	<b>Teams (employee commitment)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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					
6	Employee satisfaction is formally and regularly measured					
7	Employee flexibility, multi-skilling and training are actively used					
8	Employees believe that quality is their responsibility					
9	Measurement and recognition					
10	Feedback on their quality performance					
	<b>Continuous Improvement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Big data analytics is employed in my organization					
2	Benchmarking or our products, services, technology and human resource policies and practices					
3	Managers make accurate decisions using analysed data					
4	Training people at all levels on how to apply basic tools and methodology to achieve improvement objectives.					
5	Enabling self-evaluation of performance against personal objective.					
	<b>Culture (focus on quality)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Customer requirements are effectively disseminated and understood throughout the workforce					
2	Products and services produced meet the customer demands effectively					
3	Meeting the needs and expectations of customers					
	Seek customer input to identify their needs and expectations					
	Customer involvement in product and service design process					
	Resolving customer complaints quickly					
	Improve on product and service quality					
	Meeting the needs and expectations of customers					

### Part C: Operational Performance

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

	<b>Costs</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
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 and not on costs only					
3	Productive efficiency (utilizing all of its resources efficiently, producing most output from least input					
4	Waste elimination, increased revenues and reduced inventory					
5	Lowest amount of inputs to create the greatest amount of outputs					
	<b>Speed</b>					
1	Speed of production and delivery of products to the market impacts cash flows					
2	Less reworks and eliminating bottlenecks in production					
3	Reduced lead time to fulfil customer orders					
	<b>Flexibility</b>					
1	Creating uniquely desirable products and services (minimal standardization)					
2	Adapting to changing demand quickly					
3	Product adaptability in meeting the varied customer demands in terms of specifications					
4	Flexible modes of service and product delivery increases sales and reduces costs					
	<b>Quality</b>					
1	Continuous improvement and innovation					
2	Quality Management System					
3	Training and education					
	<b>Dependability</b>					
1	Enhance economies of scale due to greater efficiency					
2	Customer focus					
3	We deliver customer orders on time					

Thank you very much for your cooperation.

### Appendix III: Commercial Banks in Mombasa County

Barclays Bank of Kenya Ltd	I&M Bank Ltd
Stanbic bank Kenya Ltd	Kenya Commercial Bank Ltd
Diamond Trust Bank Kenya Ltd	National Bank of Kenya Ltd
Equity Bank Ltd	NIC Bank Ltd
Housing Finance Co Ltd	Standard Chartered Bank Ltd
The Co-operative Bank of Kenya Ltd	Citibank N.A. Ltd
Spire Bank Ltd	Chase Bank
Guardian Bank Ltd	Fidelity Commercial bank ltd
Consolidated Bank	Gulf African Bank Ltd
First Community Bank Ltd	Credit Bank Ltd
Bank of India Ltd	African Banking Corporation Ltd
Commercial Bank of Africa Ltd	Victoria Commercial bank Ltd
NIC Bank	Sidian bank ltd
Bank of Baroda Ltd	Family Bank Ltd
HFC ltd	Prime Bank Ltd
Bank of Africa Ltd	Ecobankkenya ltd
Habib bank A.G. Zurich	Development bank of Kenya ltd
Giro Commercial bank Ltd	Jamii Bora bank Ltd
Transnational bank Ltd	M Oriental Commercial bank ltd
Paramount bank Ltd	Middle East bank Ltd
Chase bank Ltd	

**Source: CBK (2016)**

