THE EFFECT OF TOTAL QUALITY MANAGEMENT PROGRAMMES ON FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN KENYA

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D61/75621/2012

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

NOVEMBER 2015

DECLARATION

This research project is my original work and has not been presented to any other university or college for an award of a certificate, diploma or degree.

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ACKNOWLEDGEMENT

This research project could not have been possible without the valuable input of a number of groups whom I wish to acknowledge. First and foremost, I say thank you to God for His grace and guidance during the period of the study.

I wish to also express my gratitude to my supervisors: Dr. Mirie Mwangi and Mr. Patrick Kiragu for their guidance, professional advice and availability when it came to discussing issues involved with this project.

I am thankful to the Kenya association of Manufacturers and the staff of the listed manufacturing firms for their assistance during the period of data collection.

Last but not least, thank you to my family and friends for their moral support and encouragement when I was undertaking this project.

DEDICATION

This project is dedicated to my family and friends who gave me all the moral support and encouragement I needed when I was pursuing my studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

COMESA	Common Market for Eastern and Southern Africa
IMS	Integrated Management System
ISO	International Standardization Organizations
KAM	Kenya Association of Manufacturers
QMP	Quality Management Programmes
SEZs	Special Economic Zones
TQM	Total Quality Management

ABSTRACT

This study sought to determine the effect of TQM programmes on financial performance of listed manufacturing firms in Kenya. To achieve this goal, the study used a descriptive research design. The study used a census of all listed manufacturing firms. The study used both Primary and secondary data sources. Primary data was collected through a structured questionnaire while secondary data was extracted from financial statement of the listed manufacturing firms. Data analysis was done using descriptive statistics, Pearson's correlation coefficient and regression analysis. The study found that the most popular TQM programmes used by the listed manufacturing firms are: ISO 9000 and continuous improvements. The findings observed that all the manufacturing firms complied with ISO 9000, this implies that most manufacturing firms were ISO certified. The findings also revealed that most manufacturing firms adopted integrated management systems to enhance information sharing; this contributed to cost reduction and thus improved financial performance of the listed manufacturing firms. The correlation results conclude that there was moderate correlation between TQM programs and financial performance of the listed manufacturing firms in Kenya. The findings also revealed that benchmarking practices and continuous improvement were statistically significant in the model. This is because their p-values were less than 5%. On the other hand, six sigma, IMS and firm size were found to be statistically insignificant because their probability values were above 5%. The limitation for this study is that it was limited to listed manufacturing firms in Kenya; the findings cannot be applicable directly or indirectly to other organizations operating outside the context of manufacturing sector. It would be appropriate for any reader to understand that these findings can only be used for comparative purposes only and not direct application of any other sector. The study therefore recommends that the Kenya Association of Manufacturers should ensure that manufacturing firms comply with the safety and regulatory framework on matters of quality management. This can be achieved by conducting regular audits to ensure that firms that provide goods and services comply with quality standards, policies and procedures in order to effectively provide quality services to the customers.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Total quality management (TQM) has received growing attention as a source of competitive advantage. It is viewed as a catalyst or a strategic resource due to its impact on the organization's core processes, competitive strategy choice and overall performance. The success of most organizations highly depends on how well TQM programmes are implemented by the top management. Allen & Kilmann (2001) explain that proper implementation of TQM leads to a better deployment of the TQM tools and techniques to attain a sustainable competitive advantage for the firm (Ghobadian & Gallear, 2001).

To succeed in implementation of total quality management programmes, the top management should ensure that quality management programmes are embedded in the organizational strategy. This is because total quality management tools and techniques are not coherently fitted with organizational strategy. This prompts the organization to integrate TQM programmes with the organizational strategy and operational activities. It is worth noting that total quality management programmes are a source of competitive advantage that is long lasting and inimitable by competitors (Hellsten & Klefsjo, 2000).

Foster & Jonker (2007) explain that customer-focused firms should ensure that the environment is conducive to successfully achieve improved quality services and cost reduction. The fundamental objective of promoting TQM programmes in the organizations is to enable firms to exploit their capabilities and exploration of new capabilities. This provides a solid platform for innovation and improved efficiency

and effectiveness which contributes to financial performance (Sousa & Voss, 2002). Total quality management programs facilitate quality management or quality control, compliance management, risk assessment, document control and any other component of total quality that contributes to the control, quality and validity of a product or service (Samson & Terziovski, 1999).

1.1.1 Total Quality Management Programmes

Hellsten & Klefsjo (2000) posit that total quality management (TQM) program can streamline a company's processes and dramatically increase profits. Total quality management programs facilitate quality management or quality control, compliance management, risk assessment, document control and any other component of total quality that contributes to the control, quality and validity of a product and/or service. A total quality management program under a single platform can dramatically streamline a company's processes and increase profitability.

TQM programmes forms an integral part of a continually improving organization. Quality management programmes provides tools and resources to help improve the consistency of operations, make sound choices concerning quality, measure the progress in meeting quality objectives, identify what is working or what is not working and assist in bringing identified issues to a satisfactory resolution (Allen & Kilmann, 2001). Quality management programs (QMPs) are an umbrella term for a number of quality management and improvement programs such as Quality Assurance (QA), Total Quality Management (TQM), Excellent Model (Ems), Six Sigma, integrated Management System (IMS), benchmarking, continuous improvement, Six Sigma and ISO 9000. Successful implementation of TQM programmes has a positive impact on the economic value of companies, although this

depends more on the management commitment, openness towards the environment, the authority to empower employees, training, and process improvement (Allen & Kilmann, 2001).

TQM programmes seek to integrate all the organizational functions to focus on meeting customer needs and organizational objectives through the improvement of quality, productivity and competitiveness (Allen & Kilmann, 2001). Implementation of TQM programmes puts more emphasis on the role of internal and external customers and suppliers, and the involvement of employees in pursuit of continuous improvement. Oakland &Tanner (2007) argue that in order to effectively manage the change programs; the objective for the change must be aligned to the operations of the firm to enhance their effectiveness. For commercial organizations the practical value can be measured by such criteria as improvement in efficiency and effectiveness of the organization.

1.1.2 Financial Performance

Penman (2007) defines financial performance as the level of performance of a business over a specified period of time, expressed in terms of overall profits and losses during that time. Evaluating the financial performance of a business allows decision-makers to judge the results of business strategies and activities in objective monetary terms. Financial performance is the level of performance of a business over a specified period of time, expressed in terms of overall profits and losses during that time. Evaluating the financial performance of a business allows decision-makers to judge the results of business strategies and activities in objective monetary terms.

Ananth & Lourthuraj (2013) explain that financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and

generate revenues. This in turn guides them in making investment decisions in any particular firm. The popular ratios that measure organizational performance can be summarized as profitability and growth: return on asset, return on investment, return on equity, return on sale, revenue growth, market shares, stock price, sales growth, liquidity and operational efficiency (Petersen & Kumar, 2010).

There are many different ways to measure financial performance, but all measures should be taken in aggregation. Some of the indicators of financial performance are return on equity, liquidity ratios, asset management ratios, profitability ratios, leverage ratios and market value ratios. Petersen & Kumar (2010) note that the other financial indicators of financial performance include: sales growth, return on investment, return on sales and earnings per share.

1.1.3 Total Quality Management Programmes and Financial Performance

Kaynak (2003) argue that several behavioral and attitudinal processes are necessary to achieve financial goals: work motivation, work satisfaction and organizational commitment. TQM programmes influences performance because it boosts continuous improvement and results in quality products, services, and processes that can enhance efficiency and effectiveness, timely delivery of projects and objectives fulfillment. Ahire & Rana (1995) argue that TQM requires significant investment in terms of financial, technical and human resources over several years before achieving the desired results or real progress towards these results. Sterman et al. (1997) suggest that in the long run, TQM increases productivity, raises quality, and lowers costs, while in the short run it can disrupt prevailing organizational routines and accounting practices and create operational and financial stresses that may undercut organizational commitment to continuous improvement.

Firms that have effectively implemented TQM outperform non-TQM firms on measures such as profitability, revenues, costs, capital expenditure, total assets and number of employees (Hendricks & Singhal, 2001). Successful implementation of TQM results in improved product and service quality, more effective and efficient process design, reduction in the waste of resources, and thus higher productivity. This is in line with the findings of a survey carried out by the United States Government Accounting Office (1991) on the effects of TQM programmes on the financial performance of 22 highest-scoring applicants of 1988 and 1989 for the Baldrige Award. They found that the majority of the companies achieved greater customer satisfaction, reduced errors and product lead-times, and improved employee relations. The study also found that the selected companies improved profitability, as measured by market share, return on assets, and return on sales.

1.1.4 Listed Manufacturing Firms in Kenya

The manufacturing sector in Kenya has a great potential to promote economic growth in country. The sector has experienced fluctuations over the years under different financial conditions. According to the Vision 2030, the economic pillar is guided by six major sectors targeted to provide nearly half of the country's total formal employment by the year 2030 (Wainaina, 2011). The six sectors are manufacturing, tourism, agriculture, wholesale and retail, financial services and IT enabled services.

Most manufacturing firms adopt TQM programmes to improve on the quality of their functions, systems and processes. Ogada (2012) argue that effective implementation of TQM programmes integrates employee learning of the organization, this impact on the knowledge applied to the tasks and ways of doings things. This affects behavioral

factors of the employees and thus improves on their efficiency and thus contributes to financial performance of manufacturing firms.

Mutua (2014) in his study on quality management of manufacturing firms in Nairobi, Kenya explained that to succeed in implementation of quality management; employee learning and knowledge dissemination on the new practices should be part of the employees' training program to ensure that the quality management practices are inculcated in the input that they make in the organization. This enables the firm to achieve quality products and services and thus increase customer satisfaction. This contributes to increased sales turnover and thus financial performance. Mutua (2014) emphasizes that implementation of quality management programmes is a continuous process that calls for continuous training and development to improve on efficiency and effectiveness through system upgrade and improvement.

Wachira (2013) manufacturing firms view TQM programmes as strategic drivers which instills company-wide culture, innovation, effective communication, knowledge sharing, and employee involvement, and hence a potentially significant impact on the differentiation strategy and the operational performance of the organization. This contributes to improved financial performance since the firm is able to save of operational costs.

1.2 Research Problem

Samson & Terziovski (1999) indicate that the integration of total quality management programmes with strategy and operations facilitates the strategic fit that is nurtured by resources that is human and financial and capacity building, strong supporting culture, and oversight by leadership. During execution of quality management programmes (QMPs), structures and routines emerge and are developed which further embed the

QMPs in the organizational setting. It therefore follows that "the institutionalization of QMPs is actuated by the leadership driving policy and strategy that is delivered through the user-oriented design of QMPs, coherent strategic fit, allocation of human and financial resources, supportive culture, development of QMPs routines, and an explicit intent to adopt QMPs for performance improvement reasons (Foster & Jonker, 2007). This is line with institutional theory which insists that total quality management programmes should be aligned in the formal structures of the organization to enhance compatibility and realization of the firm's strategic goals to boost financial performance.

In Kenya, listed manufacturing firms view TQM programmes as strategic drivers that instills a culture of innovation, effective communication, knowledge sharing, and employee involvement. These have a potentially significant impact on the differentiation strategy and the operational performance of the organization. Bolo & Wainaina (2011) argue that to serve the growing needs of customers, implementation of TQM is an essential component to manufacturing firms in order to minimize costs of production, improve efficiency and thus deliver value adding goods and services to improve customer satisfaction. This also contributes to improved performance.

Moghimi & Anvari (2014) evaluated the relationship between TQM and financial performance of Iranian cement companies. The findings showed a positive relationship between TQM and financial performance of cement manufacturing firms in Iran. Sarangarajan, Ananth & Lourthuraj (2013) assessed the effect of quality management on financial performance of manufacturing firms. The results revealed that there was a positive correlation between quality management and financial performance. Kynak (2003) investigated that the relationship between total quality

management practices and firm performance in the service industry in Europe. The findings revealed that quality management practices contributed to reduced costs and increased efficiency, this led to improved productivity. Mehra (2001) examined the relationship between TQM programmes and performance of manufacturing firms. The findings revealed that TQM programmes were an essential tool for achieving reduced costs.

Wachira (2013) examined quality management practices and performance of Supermarkets in Nairobi. The findings depicted that quality management practices influenced organizational performance due to reduced costs and improved customer satisfaction. Ogada (2012) studied quality management practices adopted by sugar manufacturing companies in Western Kenya. The results found that quality management was a key contributor to improved productivity. Mutua (2014) investigated the impact of TQM and financial performance of cement manufacturing firms in Kenya. The results found that quality management practices were positively related to financial performance of cement firms.

From the above review, not much has been done on the effectiveness of TQM programmes on financial performance of listed manufacturing firms in Kenya. The study therefore sought to bridge this gap by finding an answer to the question: what is the effectiveness of TQM programmes on the financial performance of listed manufacturing firms in Kenya?

1.3 Research Objective

This study sought to determine the effectiveness of TQM programmes on financial performance of listed manufacturing firms in Kenya.

1.4 Value of the Study

The study is important as it will help players in the manufacturing sector appreciate more the importance of TQM programmes to their firms. It also provides an independent platform via which regulators can appraise fundamental tools of supervision in a bid to make reasonable adjustments where necessary thus improving performance and competitiveness. The empirical findings of this study will be used to guide policy makers in setting policies that promote adoption and use of TQM programmes in order to benefit from improved quality of goods and services, flexibility, costs reduction and improved customer satisfaction hence boost their financial performance.

The study will also contribute to the existing body of knowledge. The results of this study will be of help to academicians interested in understanding the relationship between TQM programmes and financial performance of listed manufacturing firms. Researchers who have an interest in this area of research will use the findings of this study as a point of reference for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter consists of the theoretical framework, the determinants of financial performance, empirical review and the summary of the literature.

2.2 Theoretical Framework

This is anchored by three theories namely: resource-based view, contingency theory model and institutional theories. Below is the conceptual discussion;

2.2.1 Resource-Based View

Total quality management is seen as a competitive resource to most organizations; a number of studies have proposed this this argument for example Reed & Lemak (2000). This is consistent with the Resource-Based View (RBV) which suggests that attaining and maintaining a sustained competitive advantage requires the availability of strategic resources that are heterogeneous in nature, not perfectly mobile, not imitable, and non-substitutable without great effort (Barney, 1991). Rare and non-imitable resources are the appropriate use and allocation of core competences (Lopez, 2005) .It also includes the reconfiguration of organizational routines so as to respond better to the dynamic and rapid changes of the market (Eisenhardt & Martin, 2000).

Total quality management entails practices, such as empowering employees, investing in customer relations, and building effective communication channels**.** This contributes to improved value of goods and services; which is achieved through influencing the strategic choice process, strategic development and deployment of the

firm's inimitable, rare, and un-substitutable resources embodied in effective leadership, employees' capabilities, customer relations, and enhanced operations, among others (Eisenhardt, 2000).Reed et al. (2000) argued that the two components of total quality management process and content interact with each other, and it is this interaction that generates the desired performance level in the organization. The authors contended that the content component contributes to competitive advantage, while the process component generates sustainable advantage. This conforms to the resource based value of the firm, and considers TQM elements as either a source of differentiation, cost leadership advantage, or a generator of barriers to imitation given their inherent complexity and tacitness (Corbett & Claridge, 2002).

2.2.2 Contingency Theory

The need to tie TQM programmes with the organizational strategy is supported by contingency theory. This could be categorized into two schools of thoughts namely quality management programmes (QMPs) as a universal set of practices and QMPs as contingency based practices. The universal approach to QMPs advocates that quality practices are universally applicable to every context. This approach was made popular by the prominence of Japanese management systems, best practice benchmarking and quality awards. It is based on the assumption that adoption of best (world class) practices leads to superior performance and capabilities (Voss, 1995). This paradigm focuses on the continuous development of best practice in all areas of a company and is supported by (Harry & Schroeder, 2000; Samson and Terziovski, 1999) showing the link between best practice and improved performance.

The second school of thought advocates QMPs as contingency based approaches. The proponents of this approach are Dean & Snell (1996), Ketokivi & Schroeder (2004),

Sousa & Voss (2001), and Rungtusanatham et al. (1998). This approach is based on matching the internal and external consistencies. Internal consistency refers to the coherence between different elements of a manufacturing strategy; external consistency refers to the match between this set and the wider organizational context (Sousa & Voss, 2001).

According to this school of thought if market conditions change then so do the required processes. Failure to match with external business, product, and customer factors can lead to a mismatch with the market which could be detrimental to a firm's profits (Dean & Snell, 1996; Ketokivi & Schroeder, 2004). The contingency approach is also supported by Garvin (1986) who noted that attempts made by US firms to mimic Japanese quality practices without first adapting them to local conditions were unlikely to be completely successful, even though practices in both countries were originally derived from the same source.

2.2.3 Institutional Theory

Institutionalization is the process whereby a Quality management programme (QMP) becomes an integral and sustainable part of an organization. Zbaracki (1998) mentioned that institutionalization is to infuse with value beyond the technical requirements of the task at hand. A QMP is institutionalized when it is formally and philosophically embedded into the structure and functioning of an organization. The need for institutionalization can be explained using an entropy analogy Ahire et al., (1996) essentially it means that things left to themselves gradually move towards chaos and disorder unless replenished with effort. It is the same with QMPs. Left to themselves the systems move towards deterioration and degradation with the passage

of time. The underlying philosophy, at least partly, is that people resist change to their status quo and want to return to their old comfort zone.

According to this theory organizations are dependent on external constituencies for example customers for resources. In order to ensure the continued flow of the needed resources for instance orders, organizations conform to the wishes of external constituencies like implementing quality management programmes. This type of conformance leads to increased goodwill and legitimacy with external environment and so ensures the organization's long term survival (DiMaggio & Powell, 1983). However, an organization's internal performance goal like meeting productivity targets and external demands for conformance which is implementing quality practices may initially conflict; for instance, generating statistical process control data may actually slow down the production line (Choi & Eboch, 1998).

Notwithstanding the match between external demands and internal needs, managers give in to these pressures and call for compliance and incorporate QMPs (legitimate elements) into their structures. The adoption of QMPs in response to external pressures without internal needs assessment is likely to result in poor understanding of QMPs, thus resulting in low commitment, poor performance, and early abandonment (Beer, 2003). However, firms may gain performance benefits, although haphazardly, when their implementation fortuitously matches the technical needs of the plant. In other words, because such changes were not driven by the internal needs justified by the technical reasoning but by external needs justified by the institutional reasoning, their impact on plant performance will occur on a "hit-or-miss" basis (Choi and Eboch, 1998).

2.3 Determinants of Financial Performance of Listed Manufacturing Firms

This section provides the determinants of financial performance of listed manufacturing firms. The study has discussed the following determinants: production costs, firm size, supplier relationship management and benchmarking as follows:

2.3.1 Production Costs

Kumar, Rajan & Zingales (2001) argue that production costs are expenses, such as materials and labor that a manufacturing firm incurs in the course of producing the product to sell to consumers. In general, the lower the production cost, the higher the profit, or the amount left over after subtracting expenses from sales revenue. However, low production costs do not necessarily guarantee a high profit. A business may have unsustainably high fixed costs, such as rent, or may cut production costs of producing an inferior product that nobody wants.

Hardwick (1997) posit that a larger manufacturing firm enjoys economics of scale and its average cost of production is lower and operational activities are more efficient. Symeou (2012) argue that large firms face less difficulty in getting access to credit facilities from financial institutions for investment, have broader pools of qualified human capital, and may achieve greater strategic diversification. The credit facility advanced also come at lower interest rates due reduced credit risks of the firms. Lower interest rates leads to reduced production costs and thus higher profits.

2.3.2 Firm Size

Akbas and Karaduman (2012) while citing Hardwick (1997), stated that larger firms have some advantages such as greater possibility of taking advantage of scale of economies which can enable more efficient production, a greater bargaining

power over both suppliers and distributors or clients, exploiting experience curve effects and setting prices above the competitive level. All these combined eventually lead to increased productivity and financial performance. Large firms also use more skilled labor than small firms which help them achieve higher labor productivity and higher earnings.

Karaduman (2012) also argued that larger manufacturing firms are more stable and mature and they can generate greater sales because of the greater production capacity. Those firms have the chance of capital cost savings with the economies of scale. If the size of the firm increases profitability also increases therefore large sized firms tend to be more profitable. This means that a positive relationship is expected between the size of the firm and profitability (Kumar, Rajan and Zingales, 2001).

2.3.3 Integrated Management System

Whetten and Cameron (1994) explain that an integrated management system (IMS) means combined; putting all the internal management practices into one system but not as separate components. For these systems to be an integral part of the company's management system there have to be linkages so that the boundaries between processes are seamless. Therefore, an IMS should integrate all currently formalized systems focusing on quality, health and safety, environment, security among others .What this means is that all the processes and the documents that describe them would be integrated.

The role of an integrated management system is to integrate all of an organization's systems and processes in to one complete framework, enabling an organization to work as a single unit with unified objectives. A quality management system (QMS) is a set of policies, processes and procedures required for planning and execution

production, development and service in the core business area of an organization that is the areas that can impact the organization's ability to meet customer requirements (Whetten and Cameron, 1994).

2.3.4 Supplier Relationship Management

Supplier Relationship Management (SRM) is a determinant of financial performance in the manufacturing firms in Kenya**. (**Zbaracki, 1998) argue that most supply chain professionals view supplier relationship management as an organized approach to defining what they need and want from a supplier. It also involves establishing and managing the company-to-company link to obtain these needs. Formal or not, academic and consulting company research shows that organized approaches to supply and suppliers produce positive sourcing results.

Supplier relationship management acts as a focal point between the organization and the final consumers. Organizations that have problems with their supply chain networks or channels can adopt supplier relationship management practice to enhance their supply chain efficiency. (Hughes, 2010) stated that inefficient supply chains were the major cause of poor organizational performance. He insisted that organizations with integrated supply chains recorded high profits than those who paid little attention to supply chains.

2.4 Empirical Review

This section covers both local and international empirical studies that are related to quality management practices and financial performance of firms. Below is the discussion; Ettlie (1997) examined the quality, technology, and performance relationship of information technology (IT) firms. The study used a cross-sectional survey whereby and primary data was collected from IT managers using a structured

questionnaire. Descriptive statistics was used for data analysis. The findings depicted that quality management was significantly related to performance. This conforms to the hypothesis of this study which suggests that there exists a positive relationship between TQM programmes and financial performance of listed manufacturing firms in Kenya.

Samson & Terziovski (1999) examined the relationship between TQM practices and organizational performance in Australian and New Zealand manufacturing organizations. The study adopted a cross-sectional study of TQM practices and organizational performance of manufacturing firms. The study used a large database of 1,024 usable responses from the manufacturing organizations. The findings revealed that TQM practices were positively related to organizational performance. These findings are consistent to the hypothesis of this study which predicts that there exists a positive relationship between TQM programmes and financial performance of listed manufacturing firms in Kenya.

Adam, Corbett, Flores & Harrison (2007) examined the impact of quality management practices on financial performance of health facilities in Netherlands. The study used a cross-sectional survey research design in a population of 100 state hospitals. The study used both primary and secondary data for a period of three years. Data analysis was done using a regression model and the results of the analysis found that quality management practices positively impacted on the financial performance of health facilities in Netherlands. This result conforms to the hypothesis of this study which predicts a positive relationship between TQM programmes and financial performance of listed manufacturing firms. This result conforms to the hypothesis of

this study which predicts a positive relationship between TQM programmes and financial performance of manufacturing firms.

Fenghueih & Yao-Tzung (2002) explored the relationship between total quality management practices and operational performance in the Taiwan. A survey questionnaire was mailed to 1,000 large manufacturing firms listed on China credit information service, Ltd., in 1999. Primary data was collected using a questionnaire and the target respondents were managers. Data was analyzed using analyzed using a regression model and the results of the analysis found that implementation of TQM practices led to reduced costs and increased efficiency which resulted to improved performance. The study however, does not address matters in relation to financial performance in the context of manufacturing firms.

Backstrom (2009) investigated on the causes of poor quality management practices by manufacturing firms in Europe. The study used a longitudinal research design. The study population was 100 manufacturing firms. Panel data for 10 years was used in and a survey was carried in different seasons. The study found that the causes of poor quality management practices was as a result of ineffective change management, lack of quality goals, quality policies, and quality plans, lack of commitment by individuals and organizations and the working environment. The study has not addressed the relationship between the two main variables of the study that is TQM programmes and financial performance in the context of manufacturing firms.

Oriare (2011) assessed the application of total quality management in strategic management at Safaricom Limited. The study used a cross-sectional survey research design. Primary data was collected using a semi-structured questionnaire which was collected from operations managers and quality assurance managers. Data analysis

was done using descriptive statistics. The study found that the application of TQM in the Kenyan communication sector leads to increased productivity and ability to compete in the global market. The study fails to address one of the key variables of this study which financial performance. The study has also limited itself to telecommunication firms.

Wachira (2013) examined quality management practices and performance of Supermarkets in Nairobi. The study used a descriptive research design. Primary data was collected through a semi-structured questionnaire. The target respondents for the study were quality assurance managers and operations managers. Data analysis was done using a regression model and the results found that there was statistically significant relationship between quality management practices and performance. Further, the results revealed that implementation of quality management practices led to reduced costs and improved customer satisfaction. The study has limited itself to the retail industry.

Mutua (2014) investigated the quality management practices adopted by cement manufacturing firms in Kenya. A descriptive research design was used for purposes of establishing the relationship between variables. Primary data was collected with the help of a semi-structured questionnaire from the quality assurance managers of cement manufacturing firms in Kenya. Data analysis was done using both regression and descriptive statistics. The results of the regression analysis conducted revealed that quality management practices were positively related to financial performance. The study was too narrow; it limited itself to cement manufacturing firms.

Muli (2014) investigated the quality improvement practices and business performance among commercial state corporations in the Ministry of Health. The study used a

descriptive survey and data was collected using a semi-structured questionnaire that was administered by a drop and pick-later method. Data analysis was done using descriptive statistics and the results found that the degree of commitment and support that management takes in implementing a total quality environment is critical to the success of quality improvement practices implementation. The study also concluded that from quality improvement practices point of view, strategy consists of understanding what customers want and aligning the organization with plans to deliver it to them. The study finally concluded that customer service and satisfaction are at the core of the institution and the main focus of quality improvement practices. The study has limited itself in the healthcare Centres.

Kathaara (2014) studied that total quality management practices and operational performance of commercial banks in Kenya. A census of all the 43 commercial banks was done for this study. The study relied on data collected through a structured questionnaire to meet the objectives of the study using five point Likert scale. The questionnaire questions focused on the total quality management practices implementation and operational performance of the Kenya commercial banks. The questions were both open ended and closed ended. Data analysis was done using a regression model. The results revealed that quality management practices were positively related to operational performance of commercial banks in Kenya. This is consistent with the hypothesis of this study which predicts a positive relationship between TQM programmes and financial performance of manufacturing firms in Kenya.

2.5 Summary of the Literature Review

The empirical review shows that TQM progammes are essential tools for achieving financial performance. Various studies have demonstrated the effects of TQM programmes in enhancing efficiency, cost reduction and financial performance. These studies include: Kathaara (2014), Mutua (2014), Muli (2014) and Samson & Terziovski (1999) among others. These findings are also supported by the theories for example the proponents of Resource-based view Barney (1999) argues TQM programmes is a resources that enables the firm to utilize its core competence and boost its profitability. This is in line with the objective of this study which predicts that the TQM programmes contribute to financial performance of listed manufacturing firms in Kenya.

Even though studies have been on the effects of TQM programmes and financial performance, little focus has been laid on the effects of TQM programmes on financial performance in the context of listed manufacturing firms in Kenya. This therefore triggers the need to investigate the effects of TQM programmes on financial performance of listed manufacturing firms in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the research methodology was used for this study. It consists of the research design, the population, sampling design, data collection instruments and procedures, and the techniques for data analysis.

3.2 Research Design

A descriptive survey design was used in this study. With such a study, information will be obtained to meet the underlying purposes and objectives of the study. Descriptive survey was considered important in investigating the existing relationships among the variables captured in this study. According to Cooper & Emory (1995), a survey is feasible when the population is small and variable hence the researcher will be able to cover all the elements of the population.

3.3 Study Population

The population of the study consisted of all the 19 listed manufacturing firms in Kenya. Kothari (2004) defines a population as a well-defined collection of individuals or objects known to have similar characteristics. All individuals or objects within a certain population usually have a common, binding characteristic or trait. With reference to the Kenya Association of Manufacturers (KAM, 2014) there are 19 manufacturing firms licensed to work and operate in Kenya. A census survey was used since the population was small.

3.4 Data Collection

The study used both primary and secondary data. Primary data was collected using structured questionnaires while the secondary data was gathered from financial statements for a period of five years (January 2010- December 2014) based on availability and accessibility of data of the listed firms. The researcher conducted a cross-sectional study on the specific parameters that were used to measure TQM programmes of manufacturing firms in Kenya. The target respondents for this study were the quality assurance managers and the finance managers of the sampled manufacturing firms. This is because this category of respondents was highly involved in the implementation of TQM programmes in the manufacturing firms. The questionnaires were administered by a "drop and pick" later method at an agreed time with the researcher.

3.5 Data Analysis

The data collected was analyzed using descriptive statistics which includes mean, frequencies and standard deviation. Descriptive statistics was used to determine the most popular TQM programmes in the listed manufacturing firms in Kenya. A regression model was used for data analysis, to establish the relationship between the parameters of the effects TQM programmes and financial performance of listed manufacturing firms in Kenya. The regression model was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

Y_F= Financial performance

X_1=Benchmarking

X_2=ISO 9000

X_3=Six Sigma

X_4= Continuous Improvement

X_5 = Firm Size

X_6 =Integrated Management System

β0 - Constant

β1 - β5 are constants that measure of sensitivity of variable X to changes in financial performance

Ɛ= Error term

Table 3.1 Measurement of Variables

Variables	Description	Measurement
Financial performance	Ability to operate efficiently, profitably, survives, grow and react to environmental opportunities and threats.	Will be measured using Return on Assets (ROA) ROA= Net Income divided by total Assets
Benchmarking	Benchmarking is a continuing process of measuring products, services, and practices against your strongest competitors.	This was measured by determining the market share and company rankings reports.
ISO 9000	ISO 9000 is a series of international standards that set out requirements and recommendations that specify how management operations are to be conducted at a company to ensure that quality is the end result.	This was measured by checking the frequency to submit to periodic standards checks by an authorized external body
Six Sigma	Six Sigma is a quality management tool used by manufacturing firms; it is a defect reduction program that was pioneered by General Electric's Jack Welch	This was measured by checking the records on the number of stock outs and the amount of obsolete stocks.
Continuous Improvement	Continuous improvement is a method of improving every facet of a company's operations and increasing competitiveness by developing a company's resource.	The parameter was measured by the frequency of implementation of quality control measures

Firm Size	Large firms are less susceptible to bankruptcy because they tend to be more diversified than smaller companies.	The parameter was measured using the natural logarithm of total assets.
Integrated Management System	An Integrated Management System (IMS) integrates all of an organization's systems and processes in to one complete framework, enabling an organization to work as a single unit with unified objectives.	The parameter was measured by checking the frequency of training and workshops on how to use IMS

3.5.1 Tests of Significance

The study conducted an F-test to establish the significance of the independent variables namely: benchmarking, ISO 9000, six sigma, and continuous improvement against the dependent variable (Financial Performance). The significance of variables were observed at 95% confidence level whereby, variables with a 'p' value of 0.05 and below were deemed significant while those with probability values above 0.05 shall be deemed insignificant.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This study sought to determine the effect of TQM programmes on financial performance of listed manufacturing firms in Kenya. This chapter consists of the data analysis, results and discussions.

4.2 Response Rate

The researcher managed to collect back all the questionnaires that were filled and distributed in the listed manufacturing firms. The study used 95 data points which was obtained by multiplying the number of manufacturing firms (19) with a period of five years.

4.3 Descriptive Statistics

Descriptive statistics was used to determine the mean values and the standard deviation of demographic information from the respondents to find out whether they were in a position to give accurate and reliable information in relation to TQM programmes and financial performance of listed manufacturing firms in Kenya. The study used both primary data and secondary data. The variables that utilized primary data were: benchmarking, ISO 9000, Six Sigma, Continuous improvement, IMS. Five points likert scale was used to measure the level of agreement and disagreement by the respondents as advanced by Bissonnette (2007).The scale was applicable as follows: 1=very small extent, 2= small extent, 3= moderate extent, 4= Large extent, 5= to a very large extent. Below are the results of the findings presented in the table 4.1.

Table 4.1 Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
ROA	-.19	.29	.0759	.07891	1.115	.495
Firm Size	5.71	8.28	7.0810	.66065	-.962	.490
Benchmarking	3.00	4.00	3.8000	.41039	.699	.992
ISO 9000	5.00	5.00	5.0000	.00000	.	.
Six Sigma	2.00	4.00	2.4500	.75915	.412	.992
Continuos Improvement	3.00	5.00	4.4000	.59824	-.570	.992
IMS	3.00	4.00	3.5500	.51042	-2.183	.992

Source: Research findings

From the above findings in table 4.1 it was revealed that the minimum value of ROA was -2%,(-0.19) while the maximum value was 3 %,(0.29). This means that some of the manufacturing firms made losses; most manufacturing firms recorded a moderate performance in the period of study (2010-2014). The financial performance of all the listed manufacturing firms implies that most of the firms generated income from their assets. The maximum value of firm size (logarithm of assets) is 8% and the minimum value is 6%. Therefore the average firm size for all the listed manufacturing firms is 7%. These results mean that most manufacturing firms grew their assets moderately in the study period.

Benchmarking attained a mean value of 3.8 (76%) which implied that this program was moderately used in listed manufacturing firms in Kenya. ISO 9000 had a mean value of 5.00 (90%) which indicates most listed manufacturing firms complied with ISO certification. Further, continuous improvement had a mean value of 4.4 (88%). This implied that the listed manufacturing firms used continuous improvement practices to a large extent. The study also found that most manufacturing firms implemented information management systems to a large extent. This variable had a mean value of 3.5 (70%).

Of all the TQM programs used by listed manufacturing firms, Six Sigma program was the least implemented. Its mean value was 2.45 (49%). The findings therefore conclude that the most popular TQM programs used by listed manufacturing firms were as follows: IS0 9000, benchmarking and continuous improvement.

4.4 Pearson's Product Moment Correlation Coefficient

The Pearson's correlation is a measure of the strength and direction of association that exits between two variables on at least an interval scale. Below are the results of the findings presented in table 4.2 below:

Table 4.2 Pearson's Correlation Coefficient

	ROA	Benchmarking Practices	ISO 9000	Six Sigma	Continuous Improvement	IMS	Firm Size
ROA	1						
Benchmarking Practices	.100	1					
ISO 9000	.020	.041	1				
Six Sigma	.061	.456	-.145	1			
Continuous Improvement	.433	.301	.101	.459	1		
IMS	.026	.010	.026	.143	.268	1	
Firm Size	.252	.067	.090	-.016	.316	.166	1

Source: Research findings

From the above results in table 4.2, the findings revealed that there was a perfect correlation between benchmarking practices and financial performance of manufacturing firms. The correlation score was as follows: .100. It was also observed that there was a weak correlation between continuous improvements and financial performance of listed manufacturing firms in Kenya. The correlation score was follows: .433. On the other hand, there was no correlation between financial performance and the following variables: ISO 9000, six sigma, IMS and firm size.

Their correlation score were as follows: .020, .061, .026 and .252. The findings therefore conclude that there was a moderate correlation between TQM programs and financial performance of listed manufacturing firms in Kenya.

4.5 Regression Analysis and Hypothesis Testing

This tested the hypothesis for this study which had predicted that there exists a positive relationship between TQM programmes and financial performance of listed manufacturing firms in Kenya.

4.5.1 Model Summary

The model summary provides information about the regression line's ability to account for the total variation in the dependent variable**.** The results are presented in the table 4.3 below as follows:

Table 4.3 Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.452	.239	1.06605

a. Predictors: (Constant), Firm Size, Benchmarking Practices, IMS, Continuous Improvement, Six Sigma

From the above results in table 4.3, R which represents multiple correlation found that the variables were moderately correlated, R=.672. R-squared ($R^{2)}$ which is the coefficient of determination is represented by 45.2%, it shows the extent to which the variance in the dependent variable (financial performance) is explained by the independent variables. This is an indication that the model is a satisfactory predictor.

4.5.2 Analysis of Variance

The study conducted analysis of variance to find out the goodness of fit for the data. The results are provided in the table 4.4 below.

Table 4.4 Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.154	5	.231	14.438	.000[b]
	Residual	1.427	89	0.016		
	Total	2.581	94			

a. Dependent Variable: ROA

b. Predictors: (Constant), Firm Size, Benchmarking Practices, IMS, Continuous Improvement, Six Sigma

From the above results in table 4.4, for a 5% level of significance, the numerator degrees of freedom (df)=5 and denominator df =89 and F value is 2.000. The above results show that the computed F value as 14.438. From these findings, the regression model is significant since the computed f-value exceeds the critical value, that is 2.000>14.438. Hence, the regression model is statistically significant in that, all the independent variables considered together provide a good level of explanation of the relationship between TQM programmes and financial performance of listed manufacturing firms in Kenya. This implies that 95% chance that the relationship among the variables is not due to chance.

4.5.3 Model Coefficients

The study tested the coefficients of the model to establish the direction of the relationship between the variables. Below are the results of the findings in table 4.5 below.

Table 4.5 Model Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.152	.204		-1.183	.001
	Benchmarking Practices	.421	.019	.456	2.031	.000
	Six Sigma	.004	.007	.161	.599	.497
	Continuous Improvement	.035	.018	.243	1.134	.003
	IMS	.044	.034	.044	.361	.713
	Firm Size	-.001	.005	-.095	-.425	.594

a. Dependent Variable: ROA

From the above results, the regression model is as follows;

$ROA= -1.152+.421X_1+.004X_2. + .035X_3+.044X_4+ €$

Firm size was excluded from the regression model because it was found to have a negative relationship with financial performance of listed manufacturing firms in Kenya. These findings contradict with the hypothesis for the study which predicted the existence of a positive relationship between TQM programmes and financial performance of manufacturing firms. Holding all the other factors constant, a unit increase in benchmarking, six sigma, continuous improvement and IMS leads to into a corresponding decrease in ROA by 0.421, 0.004, 0.035 and 0.044 respectively. On the other-hand, a unit increases in firm size results into a corresponding decrease in ROA and by -.001.

The above regression analysis was carried out at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was done by comparing the corresponding probability value obtained; $\alpha=0.05$. If the probability value was less than α, then the predictor variable was significant. Benchmarking practices and continuous improvement were found to be statistically significant in the model. This is because their p-values were less than 5%. The results are as follows: p=.000 and p=.001 respectively. On the other hand, six sigma, IMS and firm size were

found to be statistically insignificant because their probability values were above 5%. The result was as follows p=0.497, p=0.713 and p=0.594 respectively.

4.6 Discussion

Benchmarking attained a mean value of 3.8 (76%), which implied that this program was moderately used in listed manufacturing firms in Kenya. ISO 9000 had a mean value of 5.000,(90%), which was an indication that it was used to a very large extent by most listed manufacturing firms in Kenya. Further, continuous improvement had a mean value of 4.4000,(88%), which implied that it was used to a large extent. IMS had mean value of 3.5500,(70%) which implied that it was moderately used by most listed manufacturing firms in Kenya. The findings therefore conclude that most listed manufacturing firms used TQM programmes to a large extent. The most popular TQM programs in all the listed manufacturing firms were as follows: IS0 9000, benchmarking and continuous improvement. These findings are consistent with the findings of Mutua (2014) who concluded that ISO 9000 and continuous improvement were the most popular quality management practices used by manufacturing firms in Kenya. Benchmarking and six sigma programmes were implemented to a moderate extent. Their average scores are as follows: 3.2667,(65%), and 3.2208,(64%) and their standard deviation are as follows: 1.966 and 2.8677 respectively.

The results concluded that there was a perfect correlation between benchmarking practices and financial performance of manufacturing firms. The correlation score was as follows: .100. It was also observed that there was a weak correlation between continuous improvements and financial performance of listed manufacturing firms in Kenya. These findings are consistent to Kathaara (2014) who found that there was a weak correlation between continuous improvement practices and operational performance of commercial banks in Kenya.

The regression results indicated that R which represents multiple correlation is .456. R-squared ($R^{2)}$ which is the coefficient of determination was represented by 20.8%, this was an indication that the model was a satisfactory predictor. These findings contradict with the findings by Mutua (2014) who found that the coefficient of was 52% which was an indication that the regression model was a satisfactory predictor.

The findings revealed that the regression model was significant since the computed f-value exceeded the critical value, that is 2.000>14.472. These findings are consistent with Fenghueih & Yao-Tzung (2002) who explored the relationship between total quality management practices and operational performance in the Taiwan. The regression results indicated that implementation of TQM practices led to reduced costs and increased efficiency which resulted to improved performance. The findings observed that benchmarking practices and continuous improvement were statistically significant in the model. These findings are consistent to a study by Mutua (2014) who concluded that benchmarking and continuous improvement were statistically insignificant in the model.

CHAPTER FIVE

SUMMARY , CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter consists of the discussions drawn from the data findings analyzed and presented in the chapter four. The chapter is structured into summary of findings, conclusions, recommendations and areas for further research.

5.2 Summary of Findings

The findings indicated that benchmarking attained a mean value of 3.8,(76%) which implied that this program was moderately used in listed manufacturing firms in Kenya. ISO 9000 had a mean value of 5.000,(90%), which was an indication that it was used to a very large extent by most manufacturing firms in Kenya. Further, continuous improvement had a mean value of 4.4000,(88%), which implied that it was used to a large extent. IMS had mean value of 3.5500,(70%), which implied that it was moderately used by most listed manufacturing firms in Kenya. The most popular TQM programmes used by listed manufacturing firms in Kenya were as follows: ISO 9000, continuous improvement and integrated management systems.

The results concluded that there was a perfect correlation between benchmarking practices and financial performance of listed manufacturing firms in Kenya. The correlation score was as follows: .100. It was also observed that there was a weak correlation between continuous improvements and financial performance of manufacturing firms in Kenya. The correlation score was follows: .433. On the contrary, there was no correlation between financial performance and the following variables: ISO 9000, six sigma, IMS and firm size. Their correlation score were as follows: .020, .061, .026 and .252 respectively.

The regression results indicated that R which represents multiple correlations is .672. R-squared ($R^{2)}$ which is the coefficient of determination was represented by 45.2%, this was an indication that the model was a satisfactory predictor. The findings revealed that the regression model was significant since the computed f-value exceeded the critical value, that is 2.000>14.472. Hence, the regression model was statistically significant. This implied that 95% chance that the relationship among the variables was not due to chance. The findings observed that benchmarking practices and continuous improvement were statistically significant in the model. This is because their p-values were less than 5%. The results are as follows: p=.000 and p=.001 respectively. On the other hand, six sigma, IMS and firm size were found to be statistically insignificant because their probability values were above 5%. The results was as follows p=0.527, p=0.730 and p=0.669 respectively.

5.3 Conclusion

The study concludes that the most popular TQM programmes used by most listed manufacturing firms are: ISO 9000 and continuous improvements. The findings observed that all the listed manufacturing firms complied with ISO 9000 this implies that most manufacturing firms were ISO certified. The findings also revealed that most manufacturing firms adopted integrated management systems to enhance information sharing; this contributed to cost reduction and thus improved financial performance of manufacturing firms.

The regression results also conclude that benchmarking practices and continuous improvement were statistically significant in the model. This conclusion is consistent with the findings of Samson & Terziovski (1999) who conclude that benchmarking practices and continuous improvement contributed to improved organizational

performance. The findings further concluded that sigma was statistically insignificant because its probability value was above 5%. These findings contradict the regression results by Mutua (2014) who indicated that six sigma practices were statistically significant.

5.4 Recommendations

The study recommends that listed manufacturing firms that are still reluctant to adopt six sigma and benchmarking programmes should consider adopting and implementing these programmes in order to benefit from improved quality of goods and services. This will enable these manufacturing firms to reduce costs and enhance their financial performance.

The study further recommends that manufacturing firms should benchmark themselves with the best performing firms globally in order to find out some of the best TQM programmes that contribute to profitability. This will guide on the best TQM practices to adapt in order to achieve value addition and increase customer satisfaction.

The Kenya Association of Manufacturers should ensure that organizations comply with the safety and regulatory framework on matters of quality management. This can be achieved by conducting regular audits to ensure that firms that provide goods and services comply with quality standards, policies and procedures in order to effectively provide quality services to the customers.

The study further recommends that the public sector should create more awareness of departmental procedures on how TQM programmes should be implemented. They should develop a clear policy on how quality management should be implemented by

creating a platform to ensure that government ministries comply with the quality standards.

The findings revealed that some of the challenges faced by firms during implementation of TQM programmes were lack of adequate finances and lack of sufficient training. The study therefore recommends that the manufacturing firms should invest in modern technologies for example ICT and adequate trainings in order to provide quality goods and services to its customers.

5.5 Limitations

Most manufacturing firms' work under strict confidentiality and therefore most of the respondents agreed to fill the questionnaire on condition that the information provided was treated with a lot of confidentiality and that it was meant for academic purposes only. The respondents completely failed to give information on cost reduction and sales turnover; this limited the scope of information to establish a relationship between TQM programmes and financial performance of listed manufacturing firms in Kenya.

It was also difficult to persuade and convince the participants to actively participate in the research process. Some of the respondents cited busy schedules in the work place to create more time for filling in the questionnaires. The researcher had to do so many follow-ups to have the questionnaires completed.

The findings of this study are limited to manufacturing firms in Kenya; they cannot be applicable directly or indirectly to other organizations operating outside the context of manufacturing sector. It would be appropriate for the reader to understand that these findings can only be used for comparative purposes only and not direct application of any other sector.

The challenge faced by the researcher during data collection was time factor. Primary data collection consumes a lot of time. The researcher had to prepare in order to handle the different demands of the processes and at the same time, manage time effectively and beat the deadline and ensure that the whole process was a success.

5.6 Suggestions for Further Study

Future researchers and academicians should research on the effect of quality management practices, recent practices, trends in another sector other than manufacturing firms in Kenya. An example could be the banking industry or the insurance industry then findings can be compared and conclusions drawn upon which plausible conclusions can be made.

To obtain more conclusive results, further studies should be conducted on the implementation of TQM programmes in the banking sector to find out the most implemented TQM programme, the benefits of TQM programme and the challenges faced by commercial banks during implementation of TQM programmes.

To have some comparative findings, the study recommends that further studies should be conducted on government bodies like parastatals to find out the extent of implementation of TQM programmes, benefits and the challenges faced during implementation of TQM programmes. Then, findings and conclusions can be made based on concrete facts.

Future researchers and academicians should investigate the effectiveness of quality management progammes in the public sector laying more focus on the ministries whereby most complaints have been launched before on poor quality services. These will assist the ministries and the entire civil service to improve on their weak areas and offer quality services to the public.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

This questionnaire is designed to collect data on the effects of TQM programmes on financial performance of manufacturing firms in Kenya. The data shall be used for academic purpose only and it will be treated with confidentiality it deserves. The respondents are highly encouraged and persuaded to respond to the statements in this questionnaire in the most truthful and objected way possible. Your participation in facilitating this study will be highly appreciated. Kindly tick in the space provided with the correct answer. Where required, please specify and elaborate.

Section B: Total Quality Management Programmes used by Manufacturing Firms in Kenya

Please indicate the extent to which you agree with the following statements on the TQM programmes used by manufacturing Firms in Kenya. The scale below will be applicable: 1=very small extent, 2= small extent, 3= moderate extent, 4= Large extent, 5= to a very large extent.

	1	**2**	**3**	**4**	**5**
Benchmarking					
The organization conducts a continuous process of measuring products services and practices against competitors.					
The management compares themselves against the best performing companies in the world.					
The organization identifies and improve weakness					
The organization practices competitive benchmarking.					
ISO 9000					
The organization is ISO certified					
The firm conducts regular audits					
Six Sigma					
The organization minimizes waste					
manufacturing firm reduce stock out costs					

The organization has maintained a positive image with its customers and other stakeholders					
The organization ensures that it produces quality goods and services					
Continuous Improvement					
The organization work towards improving every facet of the firm.					
The organization produces goods at zero defects.					
The organization is able to achieve 100% customer satisfaction.					
The organization observes quality improvement at all levels.					
The organization has create a quality team					
Integrated Management System (IMS)					
The firm collaborates with its suppliers in system upgrade					
ERP system is used to integrate the organizational functions					
The firm has an integrated information sharing system					
the firm has an improved connectivity with a wide range of suppliers					

Section C: The Effects of Total Quality Management Programmes on Financial Performance of listed Manufacturing Firms in Kenya.

Please provide requested data or tick appropriately as required below

1. **Please provide your organization net assets for the year:**

Year	**2014**	**2013**	**2012**	**2011**	**2010**
Net Assets in KES(million)					

THANK YOU FOR YOUR TIME

APPENDIX II: DATA COLLECTION SCHEDULE

Companies				Benchmarking	Average		ISO 900	Average			Six Sigma		Average			Continuous Improvement			Average		IMS			Average
Athi-River Mining Limited	3	3	3	4	**3.3**	5	4	**5**	2	2	3	2	**2.3**	4	4	4	5	5	**4.4**	4	3	4	3	**3.5**
Bamburi Cement Company Limited	3	3	3	4	**3.3**	5	4	**5**	2	2	3	2	**2.3**	4	4	4	5	5	**4.4**	4	3	4	4	**3.8**
British American Tobacco Kenya Limited	3	3	3	4	**3.3**	5	4	**5**	2	3	3	2	**2.5**	4	5	5	5	5	**4.8**	4	4	3	3	**3.5**
Crown-Berger Kenya Limited	3	3	3	4	**3.3**	5	4	**5**	2	3	2	2	**2.3**	4	5	4	4	5	**4.4**	4	3	3	4	**3.5**
East African Cables Limited	4	3	3	4	**3.5**	5	4	**5**	2	3	2	2	**2.3**	5	4	4	4	5	**4.4**	4	4	4	3	**3.8**
East African Portland Cement Company	4	3	3	4	**3.5**	5	4	**5**	2	3	1	2	**2**	4	5	4	5	4	**4.4**	4	3	4	3	**3.5**
East African Breweries Limited	4	4	4	4	**4**	5	4	**5**	4	5	3	2	**3.5**	5	4	4	5	4	**4.4**	4	4	3	4	**3.8**
Car and General	4	4	5	4	**4.3**	5	4	**5**	2	3	2	2	**2.3**	5	5	4	4	4	**4.4**	3	3	4	3	**3.3**
Kenya Oil Company Limited	4	4	4	4	**4**	5	5	**5**	3	3	3	2	**2.8**	5	4	5	4	4	**4.4**	4	3	3	3	**3.3**
BOC Kenya Limited	4	5	4	4	**4.3**	5	4	**5**	3	3	3	2	**2.8**	5	4	4	4	4	**4.2**	3	4	3	3	**3.3**
The Kenya Power & Lighting Co. Limited	4	5	4	4	**4.3**	5	4	**5**	2	3	2	2	**2.3**	4	5	5	4	4	**4.4**	3	4	3	3	**3.3**
Kenya Electricity Generating Company (Kengen)	4	4	5	3	**4**	5	4	**5**	2	3	4	2	**2.8**	4	4	4	5	5	**4.4**	3	4	3	4	**3.5**
Total Kenya Limited	4	4	3	3	**3.5**	5	4	**5**	2	3	3	2	**2.5**	5	4	4	5	5	**4.6**	3	4	4	3	**3.5**
Mumias Sugar Company Limited	4	4	4	3	**3.8**	5	4	**5**	2	3	3	2	**2.5**	5	5	3	5	3	**4.2**	4	4	3	3	**3.5**
Marshalls. E.A	4	4	5	3	**4**	5	5	**5**	2	2	3	2	**2.3**	5	4	3	4	5	**4.2**	3	4	3	3	**3.3**
Unga Group Limited	4	4	5	3	**4**	5	5	**5**	2	2	3	2	**2.3**	5	4	3	5	4	**4.2**	4	4	4	4	**4**
Carbacid Investment Limited	4	4	3	3	**3.5**	5	5	**5**	2	2	3	2	**2.3**	4	5	4	4	4	**4.2**	4	4	4	4	**4**
Kenya Orchards Limited	4	4	4	3	**3.8**	5	5	**5**	4	2	3	1	**2.5**	4	5	5	4	5	**4.6**	4	4	3	4	**3.8**
A Baumann Company Limited	4	4	5	3	**4**	5	5	**5**	4	2	3	1	**2.5**	4	4	5	4	5	**4.4**	4	4	3	4	**3.8**
				Total	**71**			**89**					**47**						**83.4**					**68**
				Mean	**3.8**			**5**					**2.4**						**4.39**					**3.6**

APPENDIX III: SECONDARY DATA FROM FINANCIAL STATEMENTS OF LISTED MANUFACTURING FIRMS

Athi River	Net Assets (Total Assets -Total Liabilities)	ROA (net income/total assets)	Firm Size (Total Assets)
2010	6102252	0.151011	12035963
2011	5701201	-0.02104	12037565
2012	5613180	0.067544	13441193
2013	4601423	-0.07154	13976795
2014	7090257	0.157611	16133703
MEAN	5821662.90	0.056717	13525043.80
Bamburi			
2010	14010000	0.153222	25690000
2011	17038000	0.222218	26366000
2012	30861000	0.113435	43038000
2013	31510000	0.085387	43016000
2014	29119000	0.095216	40991000
MEAN	24507600	0.13	35820200
British American Tobacco			
2010	4672076	0.140093	10553206
2011	5114312	0.158902	11121561
2012	6412067	0.225282	13750545
2013	7097917	0.24616	15176495
2014	7571608	0.219222	16985923
MEAN	6173596	0.20	13517546
Crown Berger Kenya Limited			
2010	1858452	0.046441	1858452
2011	1972337	0.04635	1972337
2012	2215352	0.058231	2215352
2013	2258263	0.059135	2258263
2014	2945434	0.072602	2945434
MEAN	2249968	0.056552	2249968
E.A Cables			
2010	1660780	0.083545	3543383
2011	2246309	0.040689	4518445
2012	2273832	0.063034	4993032
2013	2925029	0.083548	6248642
2014	3066538	0	6809265
MEAN	2434498	0.054163	5222553
East Africa Portland Cement Company			
2010	6102252	0.152381	12035963
2011	5701201	0.032655	12037565

2012	5613180	0.017843	13441133
2013	4601423	0	13976795
2014	7090257	0.065922	16133703
MEAN	5821662.6	0.05	13525032
East African Breweries Limited			
2010	22289281	0	34387751
2011	-248985	0.294608	37969455
2012	49174420	0.183503	49174420
2013	-1E+07	0.247916	35647381
2014	6761847	0.145252	56883709
MEAN	13595312.6	0.174256	42812543
Car and General			
2010	1307802	0.061668	3210498
2011	1555906	0.061539	3871293
2012	1920322	0.051905	5562239
2013	2143154	0.04672	5705400
2014	2504178	0.045757	6901430
MEAN	1886272.4	0.05	5050172
KenolKobil			
2010	9818411	0.043978	29435336
2011	11209204	0.063051	30372909
2012	11650461	0.07121	45974304
2013	6463725	-0.19228	32684166
2014	6666294	0.019857	28121673
MEAN	9161619	0.001163	33317678
BOC Kenya Limited			
2010	1533794	0.077402	1988401
2011	1521385	0.039279	2019810
2012	1328551	0.082895	1816803
2013	1454811	0.099206	1989541
2014	2076060	0.076957	2633093
	1582920.2	0.08	2089529.6
The Kenya Power And Lighting Co			
2010	66980112	0.018336	85025890
2011	70530841	0.021827	121171515
2012	69418520	0.012921	134131983
2013	70179555	0.017301	145337395
2014	74128740	0.027827	171261624
MEAN	70247553.6	0.019642	131385681
Kengen			
2010	66980112	0.018336	150566886
2011	70530841	0.021827	160993290
2012	69418520	0.012921	163144873
2013	70179555	0.017301	188613282

2014	74128740	0.027827	250205524
MEAN	70247554	0.02	182704771
Total Kenya Limited			
2010	8962191	0.015306	31528196
2011	9437540	0.030304	30233364
2012	9143398	-0.00203	35146746
2013	14151097	-0.00614	32939025
2014	15346392	0.032847	39951497
MEAN	11408123.6	0.014057	33959766
Mumias Sugar Company Limited			
2010	10039469	0.092126	17475715
2011	10747529	0.086959	18081787
2012	14226620	0.084319	22927399
2013	15783686	0.073455	27400113
2014	13288970	-0.0615	27148393
MEAN	12817255	0.06	22606681
Marshalls E.A.			
2010	735638	0.011735	1433570
2011	841525	0.219632	1125601
2012	893241	0.137741	1076155
2013	369280	0.118784	566382
2014	367187	0.194059	514406
MEAN	641374.2	0.13639	943222.8
Unga Group Limited			
2010	3146387	0.033275	5565541
2011	3364703	0.046634	5064420
2012	3744951	0.077255	5708897
2013	3989218	0.054318	6410259
2014	4503915	0.061083	8316927
MEAN	3749834.8	0.05	6213208.8
Carbacid Investment Limited			
2010	1309831	0.186269	1376380
2011	1445608	0.203279	1512166
2012	1694287	0.173677	1739985
2013	1862650	0.193404	2012816
2014	2115982	0.215724	2204399
MEAN	1685671.6	0.194471	1769149.20
Kenya Orchards Limited			
2010	-1232910	-0.03654	78703987
2011	-726112	0.007542	74491123
2012	-68846	0.010121	70372491
2013	121111	0.003553	68936272
2014	2481451	0.034213	70597300
MEAN	114938.8	0.003778	72620235

A Baumann Company Limited			
2010	836943	0.046441	1858452
2011	902345	0.04635	1972337
2012	1052420	0.058231	2215352
2013	1176202	0.059135	2258263
2014	1361714	0.072602	2945434
	1065924.8	0.056552	2249967.6

APPENDIX IV: LISTED MANUFACTURING FIRMS: INDUSTRIAL AND ALLIED SECTOR

1. Athi-River Mining Limited
2. Bamburi Cement Company Limited
3. British American Tobacco Kenya Limited
4. Crown-Berger Kenya Limited
5. East African Cables Limited
6. East African Portland Cement Company
7. East African Breweries Limited
8. Car and General
9. Kenya Oil Company Limited
10. BOC Kenya Limited
11. The Kenya Power & Lighting Co. Limited
12. Kenya Electricity Generating Company (Kengen)
13. Total Kenya Limited
14. Mumias Sugar Company Limited
15. Marshalls. E.A
16. Unga Group Limited
17. Carbacid Investment Limited
18. Kenya Orchards Limited
19. A Baumann Company Limited