INTERNAL TQM DRIVERS FOR PERFORMANCE IMPROVEMENT AMONG SMALL-SCALE MANUFACTURING FIRMS IN NAIROBI, KENYA

BY:

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A Management Research Project Submitted in Partial Fulfilment of the Requirements of the Degree of Master of Business Administration (MBA), School of Business, University of Nairobi

November, 2013

DECLARATION

This project is my original work and has not been submitted for a Degree in any other University.

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This project has been submitted for examination with our approval as university supervisors.

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ACKNOWLEDGMENT

I would like to take this opportunity to pass my heartfelt gratitude to all the people who played a big role in assisting me complete my study. First of all, I give thanks to the Lord Almighty for giving me good health to start and complete this project successfully, without Him, I would not have come this far.

I am deeply indebted to my supervisors Akello O. Ernest and Magutu O. Peterson lecturers, department of Business Administration. They have patiently and diligently guided me through this research. Without their advice, comments, criticism and suggestions this project would not have become a reality. They greatly inspired me throughout the research period and always availed themselves for consultation.

I also wish to thank all members of staff of the faculty of Business Administration (UON) for their valuable advice and support.

May God's blessings be upon you all!

DEDICATION

I dedicate this study to my late Mother who taught me the virtues of determination, hard work and persistence. I also dedicate this work to all my family members who instilled in me the importance of education. May this be an inspiration to you all and to generations to come to strive for even much greater heights.

ABSTRACT

Internal TQM drivers as a management approach contribute to long–term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work. Thus, the aim of conducting this study was to determine the relationship between internal TQM drivers and performance improvement in small-scale manufacturing firms in Nairobi, Kenya.

The study adopted a cross sectional survey. The target population comprised of 64 small-scale manufacturing firms in Nairobi County. Systematic random sampling method was used since each and every member of the population had an equal chance of being selected as a sample. Primary data was collected using questionnaires. Data collected was analyzed by use of descriptive statistics using SPSS and presented through the percentages, frequencies, means, standards deviations and regression analysis. The information was then presented by use of tables and prose-form.

The study found that internal TQM drivers greatly affected performance improvement of small-scale manufacturing firms in Nairobi County. Results using SPSS support the hypotheses that there is a positive relationship between internal TQM drivers and performance improvement of Nairobi's small-scale manufacturing firms. Furthermore, it is also found that customer focus is perceived as a dominant TQM practice for enhancing performance improvement. Moreover, this study also provides a valuable knowledge to the top managers. Practical implementations along with the limitations have also been discussed in this study.

TABLE OF CONTENTS

CHAPTER THREE: RESEARCH DESIGN

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

CHAPTER FIVE: SUMMARY, CONCLUSION & RECOMMENDATIONS

Appendices

LISTS OF TABLES

ABBREVIATIONS

TQM : Total Quality Management

OD : Organization Development

BPR : Business Process Re engineering

KAM : Kenya Association of Manufacturers

SME : Small and Medium Enterprises

KIPPRA: Kenya Institute for Public Policy Research and Analysis

NRFT : Not Right First Time

ST : Stock Turns

OEE : Overall Equipment Effectiveness

PP : People Productivity

FSU : Floor Space Utilization

DSA : Delivery Schedule Achievement

VAPP : Value Added Per Person

PPT : Parts Per Million

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

In today's global competition and economic liberalization, quality has become one of the most important factors for achieving competitive advantage. A good quality product or service enables an organization to add and retain customers. Poor quality leads to discontented customers, so the costs of poor quality are not just those of immediate waste or rectification but also the loss of future sales. Technological innovations have diffused geographical boundaries resulting in more informed customers. The business environment has become increasingly complex and the market place has changed from local to global. Constant pressure is applied to management to improve competitiveness by lowering operating cost and improving logistic (Shekhar & Joshi, 2008).

The last two decades have witnessed a major transformation in how business is conducted. Organizations whether large or small, public or private, have been striving for high productivity with an emphasis on quality, innovation and value. Hence those organizations developed and implemented approaches to optimally link the organization's work and employees for improved business results (Ndirangu, 2010).

Customers are becoming increasingly aware of rising standards, having access to wide range of products and services to choose from. There is an ever-increasing demand for quality product and/or services and this global revolution has forced organizations to invest substantial resources in adopting and implementing Total Quality Management (TQM) strategies (Shekhar & Joshi, 2008).To be successful in the marketplace, each part of the organization must work properly together towards the same goals, recognizing that each person and each activity affects and in turn is affected by others. To improve

competitiveness, organizations are looking for a higher level of effectiveness across all functions and processes and are choosing TQM as a strategy to stay in business (Baidoun, 2003).

Continuously improving business processes is of increasing importance for companies looking to stay competitive in today's global markets. For society, there is a strong need to keep jobs by realizing and utilizing the potential in existing businesses. Companies need to compete both by bringing new products to the market and by improving existing products and processes.

Dale (2003) emphasizes that continuous improvement in the total business activities with a focus on the customer throughout the entire organization and an emphasis of flexibility and quality are some of the main means by which companies face up to competitive threats. This is why quality and its management and the associated continual improvement are looked upon by many organizations as the means by which they can survive and maintain a competitive edge over their rivals. Companies that do not manage change will fail. Total quality is a major factor in the business quality revolution that has proven itself to be one of the 20th century's most powerful creators of sales and revenue growth, genuinely good new jobs, and soundly based and sustainable businesses expansion (Dale, 2003).

1.1.1 Internal TQM Drivers

Quality is interpreted when customers' expressed and implied requirements are met fully. This is a core statement from which some eminent definitions of quality have been derived. They include: the totality of features and characteristics of a product or service that bears on its ability to meet a stated or implied need (ISO, 1994), fitness for use (Juran, 1988), and conformance to requirement (Crosby, 1979). It is important to note that satisfying the

customers' needs and expectations is the main factor in all these definitions. Therefore it is an imperative for a company to identify such needs early in the product/service development cycle. The ability to define accurately the needs related to design, performance, price, safety, delivery, and other business activities and processes will place a firm ahead of its competitors in the market (Beaumont, 1997).

Total quality is a strategic integrated system for achieving customer satisfaction that involves all managers and employees and uses quantitative methods to continuously improve an organization's processes (Braxton 2011).Total Quality Management (TQM) is an approach that seeks to improve quality and performance which will meet or exceed customer expectations. This can be achieved by integrating all quality-related functions and processes throughout the company. TQM looks at the overall quality measures used by a company including managing quality design and development, quality control and maintenance, quality improvement, and quality assurance. TQM takes into account all quality measures taken at all levels and involving all company employees (Murray, 2009).

TQM is a philosophy aiming at continuous improvement and involvement of the whole organization starting from the top of the hierarchy and ending at the bottom level of employees (Ndirangu, 2010). Ashari and Zairi (2006) found that TQM practices including quality management, employee empowerment and teamwork, customer satisfaction management, quality goal setting and measurement, supplier's cooperation and quality tools training have positive effects on customer satisfaction and that the adoption of TQM principles is an effective means by which companies can gain competitive advantage. The implementation of the TQM practices also helped companies to improve their image, employee's satisfaction and quality awareness.

TQM drivers can be classified as both external and internal. External TQM drivers are those factors, which will influence the future of TQM from without the TQM discourse. The technology, markets and environmental drivers are all classed as external drivers. Internal TQM drivers are a management approach aimed at incorporating awareness of quality in all organizational processes (Oakland, 1999).These are issues within the TQM movement. Internal TQM drivers are those factors which will influence the future of TQM from within the TQM discourse. They includes; focus on the customer, long term commitment and leadership, top management support and direction, employee empowerment and involvement, effective and renewed communication, commitment to training, importance of rewards and recognition and reliance on standards and measures (McAdam & Henderson, 2002).

According to Rahman, Shokshok & Wahab (2011), TQM offers many benefits when properly implemented, such as reduced scrap and rework, the elimination of defects, reduced levels of cost, increased levels of productivity & efficiency and better employee morale. Chin & Pun (2002), stated that successful TQM implementation will result in improved products and services, more satisfied employees and customers, reduced costs and an improvement in the organizational financial improvement.

There are a number of barriers that face the process of TQM implementation. Ustadh (2012) has identified them as follows; competitive markets, bad attitudes/abdication of responsibility/management infallibility, lack of leadership for quality, deficiency of cultural dynamism, inadequate resources for total quality management, lack of customer focus, lack of effective measurement of quality improvement, poor planning, lack of management commitment, resistance of the workforce and lack of proper training.

1.1.2 Performance Improvement

Performance improvement is the concept of measuring the output of a particular process or procedure, then modifying the process or procedure to increase the output, increase efficiency, or increase the effectiveness of the process or procedure. The concept of performance improvement can be applied to either individual performance such as an athlete or organizational performance such as a racing team or a commercial enterprise (Karen, 2009).

In Organizational development, performance improvement is the concept of organizational change in which the managers and governing body of an organization put into place and manage a programme which measures the current level of performance of the organization and then generates ideas for modifying organizational behavior and infrastructure which are put into place to achieve higher output. The primary goals of organizational improvement are to increase organizational effectiveness and efficiency to improve the ability of the organization to deliver goods and or services. A third area sometimes targeted for improvement is organizational efficacy, which involves the process of setting organizational goals and objectives (Stephenson, 2010).

Stephenson (2010) further states that performance improvement at the operational or individual employee level usually involves processes such as statistical quality control. At the organizational level, performance improvement usually involves softer forms of measurement such as customer satisfaction surveys which are used to obtain qualitative information about performance from the viewpoint of customers.

The manufacturing sector is one in which there is significant scope for performance measurement, as most aspects of the production process can be accurately measured in

quantitative terms. An indication of the way manufacturers can measure their performance is provided by the Quality-Cost-Delivery (QCD) system. This comprises seven key measures which between them capture some of the key drivers of most manufacturing operations. The seven QCD measures are: Not Right First Time, Stock Turns, Overall Equipment Effectiveness, People Productivity, Floor Space Utilization, Delivery Schedule Achievement and Value Added per Person (KCTS, 2009).

1.1.3 Small-Scale Manufacturing Firms in Kenya.

The criteria used to define small and medium enterprises in countries such as U.S.A., Japan, U.K., Korea, Pakistan and China is based on the number of employees, total asset costs, and sales turnover. In Kenya, micro-enterprises are those with 10 or fewer workers, small enterprises have from 11 to 50 workers, and medium enterprises have from 51 to 100 workers. Censuses indicate that micro-enterprises comprise the lion's share of enterprises in Kenya while there are a few medium enterprises. Small enterprises are almost non-existent (Gray, Cooley and Lutabingwa, 1996). Studies show that only approximately 60 percent of small scale manufacturing firms survive for 3 years and of 40 percent survive for 10 years (Philips & Kirchhoff, 1989).

The small firms' sub-sector, which includes micro and small enterprises, is a crucial player in government's efforts to reduce poverty and unemployment in Kenya. The sub-sector employs nearly 6.8 million Kenyans, and of the new jobs created in 2006, 89 percent were in the small firms. The development of this sub-sector is in line with the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) and the economic pillar of Kenya Vision 2030.However, the potential for small firms to create more income-generating

opportunities and employment cannot be realized unless challenges that constrain their growth and transformation are addressed (KIPPRA Policy Brief, 2007).

According to MacGregor (2004) small scale firms characteristics are unique and different from large organizations, for example policy making, business structure, utilization of resources and procedures. Small scale organizations have flat structure with few management levels, flexible and informal dynamic strategies (McAdam, 2000), and have, according to Bryttling (1991), also less stability and market overview. In terms of culture they have shared unified culture with high degree of personal authority among staff and management due to lack of formality exists by the company size (Jenning & Beaver, 1997). Generally, senior managers are fully involved in daily operations due to the size of the company, small scale firms are recognized as having shortage of skills among working staff, and has been argued a deficit in management expertise (Huang & Brown, 1999).

However, among other factors related to ownership and strategy, motivation and education of the employees are important elements which have appeared to be significant with success and growth of small scale firms (Storey, 1994). Further, Atkinson and Storey (1994), demonstrates that the probability of small scale manufacturing firms undertaking training for their workforce appears to increase with size of the enterprises. Particularly external training focuses on deepening the skill base, whereas, according to Wiklund (1999), small firms require greater flexibility from their labor rather than deeper specific skills. Growing and successful small scale firms seem to behave differently Wiklund (1999). These small scale firms seem to be more likely to perceive the skill base of their company to be one of its comparative advantages and so might be expected actively to encourage workforce training to greater extent than other firms (Storey, 1994).

1.2 Statement of the Problem

Many organizations are striving for quality products and services that will meet or exceed customer's expectations and as a result of this they are searching for approaches to managing people and production systems that will assure the transformation of inputs into quality output (Ugboro & Obeng, 2000). Over the years experience has shown that no organization can achieve and sustain a good image without strategic vision, effective management or good leadership. Invariably with Total Quality Management, management is able to establish and maintain good image and social acceptance through quality products and services to customers. It is thus on this premise that the research intend to see how internal TQM drivers can be integrated into small scale manufacturing firms in Nairobi to address the falling quality standards currently being deviling the industry.

The small scale manufacturing firms in Kenya need to restructure if they expect to secure economies of scale in their line of businesses. Rather than a specific management tool or process, Total Quality Management (TQM) is an approach that small business owners or managers must hold in running their company (Williams, 2008). They must focus on quality and price to gain and hold customers, striving to view the business through their customers' eyes. Instead of focusing solely on profits, managers must identify their core customer base in order to build and maintain market share through continuous improvement of products and services. Small businesses can benefit from implementing the principles of TQM into their business environment (Williams, 2008).

A number of studies have been done with regards to the implementation of internal total quality management drivers. Pheng and Jasmine (2004), pointed out that with the adoption of TQM there is the benefits of higher customer satisfaction, better quality products and higher

market shares. Ugboro and Obeng (2000) found out that TQM theory is based on; continuous improvement, top management leadership and commitment to the goal of customer satisfaction, employee empowerment and customer focus.

Quazi and Padibjo (1997) concluded that with the full adoption and implementation of TQM, there should be a turnaround in corporate culture and management approaches as compared to the traditional way of management in which the top management giving orders and employees merely obeying them. Njie, Fon and Awomodu (2008), emphasized that if there is lack of commitment from top management then TQM cannot be implemented in its entirety and also stress the fact that the support that management takes in implementing a total quality environment is very critical to the success of the TQM implementation. Sharma and Kodali, (2008) pointed out that the success of TQM demands communication with and among all the organization members, suppliers and customers. As people are recognized, there can be huge changes in self-esteem, productivity, quality and the amount of effort exhorted to the task at hand.

As with many developing countries, there is limited research and scholarly studies conducted on the internal TQM drivers and especially on the small scale manufacturing firms in Nairobi, Kenya. The 1999 National Baseline Survey conducted by Central Bureau of Statistics, ICEG and K-Rep Holdings provides the most recent comprehensive picture of small scale manufacturing firms in Nairobi, Kenya. Mead (1998) observes that the health of the economy as a whole has a strong relationship with the health and nature of micro and small enterprise sector.

Given the importance of small businesses to the Kenyan economy and quality management concerns, there was need to conduct an empirical enquiry to investigate the internal TQM drivers entrenched in Nairobi's small scale manufacturing firms (Mead, 1998). The study

sought to answer the following questions: To what extent are internal TQM drivers entrenched among small scale manufacturing firms in Nairobi, Kenya? How far has internal TQM drivers contributed to performance improvement requirements among small scale manufacturing firms in Nairobi, Kenya?

1.3 Research Objectives

The objectives of this research therefore were:

i. To determine the Internal TQM drivers entrenched by small scale manufacturing firms in Nairobi, Kenya.
ii. To determine the relationship between internal TQM drivers and performance improvement among small scale manufacturing firms in Nairobi, Kenya.

1.4 Importance of the Study

This study provides the management of small scale manufacturing firms with better understanding of its processes and identifies tools for implementing continual improvement programs that can lead to improved profitability thereby increasing shareholder value. The study can assist the management of small scale manufacturing firms to encourage innovation, make the organization adaptable to change, motivate people for better quality, and integrate the business as a result of common purpose. All these provide the organization with a valuable and distinctive competitive edge.

The study maybe used by Kenya Association of Manufactures KAM, to improve the regulation of the small scale enterprises in ensuring that they implement internal TQM drivers so that the benefits can be passed on to the customers. The entire country could

benefit from reduced cost to one of the primary ingredients of production which would accelerate economic growth.

This study adds to existing literature on TQM implementation in academic institutions. While students and lecturers may make references to this document, future researchers may decide to do more research based on the issues raised here.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter gives a review of the literature related to the study. It is specifically concerned with the concept of total quality management, internal TQM drivers, measures of performance improvement and the conceptual framework.

2.2Total Quality Management

Quality first became a concern in the 1960s when Japan began to introduce quality circles (McGraw & Dunford, 1986). Quality circles have been successful in Japan as a way of encouraging innovation from the workforce. The members of quality circles develop ideas that allow the organization to improve products, services and processes. This largely involves the simplification of processes and cycle-time analysis (Sohal, Terziovski & Beaumont, 1997).

However, quality circles have not enjoyed the same success in Western countries, such as Britain, the United States and Australia, as they have in Japan. This may be due to a lack of management support, a lack of training, inadequate resources (Field & Swift, 1996), or a perception of inadequate empowerment. In Western countries, the members of quality circles were usually not empowered to act on their ideas and were required to report to management before making any changes. Naturally, if their ideas were rejected, morale would be reduced and they would be less motivated to generate ideas in the future (Field & Swift, 1996).

TQM is an organizational change intervention that is concerned with quality. TQM can be defined as an approach to doing business that attempts to maximize the competitiveness of an organization through the continual improvement of the quality of its products, services, people, processes and environment (Goetsch & Davis, 1995).An obsession with achieving ever-higher levels of quality distinguishes TQM from OD and BPR (Harvey & Millet, 1999). In Japan such an obsession is known as kaizen (Nasierowski, 1997).

There are three requirements for the achievement of quality: timely delivery; appropriate cost; and quality as required by the customer (Field & Swift, 1992). Cost is important, as there is little use in designing a product of high quality if it is not competitive in the marketplace. TQM is concerned with reducing costs by minimizing defects, rework, scrap, backlogs, late deliveries and surplus items (Bank, 1992). It is based on the belief that defect-free work is possible most of the time and, therefore, the emphasis is on prevention, rather than inspection (Field & Swift, 1992). TQM aims to achieve continuous improvement of products, services and processes through the involvement of people at the workplace (Nasierowski, 1997).

2.3 Internal TQM Drivers

Christos and Evangelos (2010), outlined the main quality management factors as: quality practices of the top management, employee involvement, customer focus, process and data quality management and the use of quality tools and techniques. In other words, the company's top management supported by its employees, places customer at the center of the system and while using quality tools it manages processes and data based on quality. The result of this form of management is the company's quality improvement, customer

satisfaction, its market consolidation and domination and the protection of natural and social environment (Christos & Evangelos, 2010).

2.3.1 Customer Focus

Achieving customer focus involves ensuring that the whole organization, and not just frontline service staff, puts its customers first. All activities, from the planning of a new product to its production, marketing, and after-sales care, should be built around the customer. Every department and every employee should share the same customer-focused vision. This can be aided by practicing good customer relationship management and maintaining a customer relations program (LeBoeuf, 2000).

A study done by the Institute of Customer Service, UK found out that the first and overriding feature of TQM is the company's focus on its customers. Quality is defined as meeting or exceeding customer expectations. The goal is to first identify and then meet customer needs. TQM recognizes that a perfectly produced product has little value if it is not what the customer wants. Therefore, quality is customer driven. However, it is not always easy to determine what the customer wants, because tastes and preferences change. Also, customer expectations often vary from one customer to the next. Companies need to continually gather information by means of focus groups, market surveys, and customer interviews in order to stay in tune with what customers want. They must always remember that they would not be in business if it were not for their customers (Ferris, 2010).

2.3.2 Long -Term Commitment and Leadership

TQM must involve everyone. To be successful, it must start at the top with the leaders of the organization. All senior managers must demonstrate their seriousness and commitment to quality, and middle managers must, as well as demonstrating their commitment, ensure they communicate the principles, strategies and benefits to the people for whom they have responsibility. Only then will the right attitudes spread throughout the organization (Cortanda & Woods, 2004).

A fundamental requirement is a sound quality policy, supported by plans and facilities to implement it. Leaders must take responsibility for preparing, reviewing and monitoring the policy, plus take part in regular improvements of it and ensure it is understood at all levels of the organization. Effective leadership starts with the development of a mission statement, followed by a strategy, which is translated into action plans down through the organization. These, combined with a TQM approach, should result in a quality organization, with satisfied customers and good business results (Maxwell, 2009).

2.3.3 Top Management Support and Direction

Top management must be the driving force behind TQM. Senior managers must exhibit personal support by using quality improvement concepts in their management style, incorporating quality in their strategic planning process, and providing financial and staff support (World Academy Online, 2010).

Emerald (2005) emphasized that, for a successful application of the management theories and to achieve a long term goals, it is of great importance if top management could avoid losing

focus of their managerial role; has role model and active participant in decision implementation. In addition, the success of an organization is when top management are fully involved in work process, with follow-ups and free flow of information or communication.

Andersson (2007) and Stoner et al. (1995), highlighted management concept as planning or organizing processes that will lead to control of all types of resources in an organization, in order to reach a common vision. This will eventually transcend to continuous evolution of modern quality management as organization favourable respond to changes in business demands.

2.3.4 Employee Empowerment and Involvement

Brymer (1991) defines empowerment as a process of decentralizing decision making in an organization, whereby managers give more discretion and autonomy to the front line employees. Thomas and Velthouse (1990) perceived empowerment "as intrinsic task motivation that manifests itself in four cognitions reflecting an individual's orientation of his or her work roles. By intrinsic task motivation, they are referring to "positively valued experiences that an individual derives directly from a task that produce motivation and satisfaction (Ugboro & Obeng, 2000).

According to Pearson et al. (1995) employee involvement through teams such as self-manage teams, quality improvement teams, management teams, and executive steering committees allows organizations to benefit from the knowledge and skills the individuals bring to the organizational workplace. They emphasize the fact that employees at all levels should be charged to review and change their work processes in an effort to improve the overall quality of the finished product and services.

Hill (1991) also advised that when organizations are contemplating the implementation of employee empowerment, the management need to develop and communicate definitions very clearly, otherwise employees will not only challenge the inevitable ambiguity but may also develop their own definitions. They also advert that critical empowerment programs should be designed to enable those with little or no power to overcome whatever forms and source of domination that apply. The key factors to overcome the domination are; control over key resources, access to decision making process and the questioning of the fundamental legitimacy or organizational imperatives (Hill & Huq, 2004).If empowerment is being implemented in an organization it will go a long way to flatten up the organizational chart because managers and employees will share some responsibilities with some level of authority being controlled.

2.3.5 Effective and Renewed Communication

Communication is the life blood of an organization. Communication plays a significant role in connection with quality issues. Communication is an important means of realizing quality. There is strong relationship between good communication and successful quality implementation (Burroughs, 2008).

Although communication has always been key requirement of good management, it's even more important in the implementation of total quality management (Schmidt & Finnigan, 2005).

Total quality management depends on communication that flows in all directions up, down and laterally. Internal and external customers have to let know suppliers what they need. Suppliers have to let know their customers what they can realistically provide (Brennan, 2007).

The success of an organization's quality efforts relies largely on focusing on the right objectives and its ability to communicate them to the customers both internal and external. For total quality to work, communication between all levels in the organization is vital. Because total quality is a game that everyone must play. Thus it's important to note that without effective communication, TQM will not work in an organization (American Management Association International, 2010).

2.3.6 Commitment to Training

Training is absolutely vital to the success of TQM. The process usually begins with awareness training for teams of top level managers. This is followed by courses for teams of mid-level managers, and finally by courses for non-managers. Awareness training is followed by an identification of areas of concentration, or of functional areas where TQM will first be introduced. Implementing TQM requires additional skills training, which is also conducted in teams (World Academy Online, 2010).

Kappelman and Prybutok (1995), emphasizes that training is a very important aspect in the implementation of a successful TQM program as it provides an opportunity to inform employees about the goal of TQM and also provide workers with the skills and knowledge needed to achieve those goals. Training also provides an opportunity to empower and motivate employees, reducing employee resistance and increases the chances of TQM success.

2.3.7 Importance of Rewards and Recognition

An appropriate system of recognition and reward is crucial to any company’s TQM programme, particularly as the quality improvement process offers greater involvement

opportunities for ordinary working people. Positive reinforcement through recognition and reward is essential for achievement through participative problem-solving projects. People work for achievement, advancement, increased responsibility, recognition job interest as well as money (Charantimath, 2006).

According to Charantimath (2006), managers should follow the following recognition and reward guidelines: look for positive behavior to recognize and reward rather than negative conduct to criticize, give recognition and reward publicly to maximize their impact and effectiveness, strive to be open and genuine in the process of recognizing and giving rewards, have a wide-range of recognition and reward options to match the ability or good work of individuals or the special group(s) involved, develop a sense of timing about recognition and reward and remain impartial and even-handed in giving out recognition and rewards. They should also be able to communicate exactly why individuals and groups are receiving awards.

2.3.8 Reliance on Standards and Measures

According to World Academy (2010), measurement is the springboard to involvement, allowing the organization to initiate corrective action, set priorities and evaluate progress. Standards and measures should reflect customer requirements and changes that need to be introduced in the internal business of providing those requirements. The emphasis is on doing the right thing right the first time.

2.4 Measures of Performance Improvement

It is crucial to monitor the performance of a business and understand how and what you need to measure before even considering how to improve. The key performance indicators of quality, cost and delivery (QCD) aim to raise standards in 7 key areas (quality of finished

products, on-time delivery, staff productivity, stock levels, efficiency of equipment, added value and floor space). Together the measures of QCD give a coherent and overall analysis of performance and provide the basis for continuous measurement and improvement by focusing your priorities (Manufacturing advisory service, 2009).

2.4.1 Not Right First Time

Not right first time measures a products ability to match a specification and is expressed in 'number of defect parts per million'. Not getting things right first time means wasted effort, wasted resources and wasted production time-all leading to excess costs. To the customer, it means interrupted production flow, poor quality and ultimately higher prices. Reducing NRFT will help improve quality, cost and delivery. NRFT can be measured internally and externally in the production cycle. A defective unit is a unit that does not conform to specifications and may be scrapped or reworked (SSMT Industry Forum, 2010).

Internally, defective units are identified within the production process. Externally, defective units are identified outside the production process, either from the supplier or at the customer's site. Putting customer satisfaction first means putting the external defect rate before other elements of the supply chain. A low defect rate means customers will receive higher quality parts and consequently, there will be fewer interruptions to the flow of production (SSMT Industry Forum, 2010).As 1%=10,000 parts per million and the use of this to record defects magnifies NRFT for continuous improvement (SSMT Industry Forum, 2010).

NRFT= Quantity of defective units/Total quantity of units supplied $x10^6$

2.4.2 Stock Turns

Stock Turns is a measure of how frequently the stock (raw material, work- in- progress and finished goods) are turned over in relation to the sales revenue of a product. Stock turn is an important measure because it reflects the level of control and coordination of materials that flow through the process. Inventory levels (by value or quantity) are key indicators of the leanness of the process and are directly related to the simplicity of production flows. In contrast, excess inventory means unnecessary cost.ST ratios reveal how much control a business has over a process. Tightly controlled processes needs only low levels of raw material and work-in-progress (WIP). A tightly controlled process is also more dependable, as the business knows how much stock it needs and does not have an excess of finished goods (SSMT Industry Forum, 2010).

Ideally the operator aims to eliminate interruptions to the manufacturing process to keep the production stream continuous. With less interruption, the production cycle can be reduced so that less inventory is tied up, releasing cash and valuable production space. Furthermore, improvements in ST could allow the supplier to respond faster to customer demands and work to much tighter schedules. Inventory of incoming parts measure the efficiency of the flow of materials from the supplier. Work-in-progress (WIP) indicates factory flow. The finished goods figure represents the available level of completed product for delivery to the customer.

Faster throughput time and frequent deliveries to the customer will result in lower values for finished goods (SSMT Industry Forum, 2010).

ST = Sales Turnover of a product/Value of raw material + WIP + Finished Goods

2.4.3 Overall Equipment Effectiveness

Overall Equipment Effectiveness measures the availability, performance and quality of a process. The OEE measure shows how well the business is utilizing its resources, including equipment and labor.OEE is calculated by combining three elements: availability, performance and quality. One needs to understand the level of each element, as well as knowing the OEE value. Comparison of the three element figures provides a focus for improvement (SSMT Industry Forum, 2010).

Availability-expressed as a percentage, compares the planned and actual time of the process run. An example of an improvement in availability is the elimination of unplanned downtime, which interrupts the flow of production and customer delivery.

Performance-expressed as a percentage, compares the actual and ideal output achieved during the running of the process. An improvement would be returning the cycle time of the process back to the ideal design specification of the equipment.

Quality-expressed as a percentage, compares the number of good parts made against the total parts made. Quality improvements include reducing rework and scrap generated by the process (SSMT Industry Forum, 2010).

OEE=Availability % x Performance % x Quality %

2.4.4 People Productivity

People Productivity is a measure of ratio between the number of good units made and the number of direct operator hours it takes to make those units. Using this measure can help control the people cost associated with production. This objective is to maximize the PP figure by either reducing the direct operator involvement, or increasing the number of good

units made. Measuring PP helps you focus in on a key element of product cost and reduces processing time, for example by reducing wasteful work and standard sing the process. Best practice means avoiding production (SSMT Industry Forum, 2010).

Work is defined under three divisions: Work which adds value in line with the customer specification, Work which does not add value, but is necessary under current conditions and Work which is wasteful and counter-productive. A high PP can only be obtained when: Most of direct employees' work is adding value to the process, Non-value added work is reduced to minimum and Waste is eliminated (SSMT Industry Forum, 2010).

PP= Number of good units made/ Number of direct operator hours

2.4.5 Floor Space Utilization

Floor Space Utilization is a measure of the sales revenue generated per square meter of factory floor space. This measure relates the value of the factory space to the generation of sales, and demonstrates how effective use of space can reduce the fixed cost element of the unit. The FSU measure can be applied at cell level or across the whole manufacturing site for internal benchmarking. High fixed costs, such as factory space, are not usually desirable and capital decisions that require expanded buildings can be expensive. So there is generally a strong desire to minimize the use of space taken by the manufacturing process (SSMT Industry Forum, 2010).

In order to achieve an increased FSU value the floor space has to be reduced. This often means rethinking a process layout and eliminating inventory to reduce the necessary space to the minimum (SSMT Industry Forum, 2010).

FSU= Sales Turnover of Model Area/Square meters of Model Area

2.4.6 Delivery Schedule Achievement

Delivery Schedule Achievement measures how well a supplier matches the planned delivery requirement of the customer. The ability to deliver products on time is fundamental to customer satisfaction. However, 100% on time delivery must be achieved without unnecessary additional costs such as special deliveries, overtime payments, increases in stocks, scrap or rework costs (SSMT Industry Forum, 2010).

These additional costs are a reflection of a lack of control over the manufacturing process.DSA is a function of good plant performance, which in turn is an indication of good management. Good plant performance is demonstrated when production flows through the plant without interruptions. The DSA measures the actual delivery performance against the planned delivery schedule. Late and early deliveries are regarded as failures and are called 'not on time' in the measure. Incorrect quantity deliveries are deliveries of too many or too few parts and parts that don't conform to the job, even if they can be reworked. If a delivery is both 'not on time' and 'incorrect quantity' then count it only once (SSMT Industry Forum, 2010).

DSA =No. of planned deliveries [No. of not on time+ No. of incorrect quantity deliveries]/ No. of planned Deliveries

2.4.7 Value Added Per Person

Value Added Per Person is a financial measure that relates the number of direct people involved in the conversion process to add value to the product. The VAPP has a direct impact on the costs associated with a process and shows specifically how well people are used to transform materials into the finished product: Output value is the sales value of the unit after

production, Input value is the value of the raw material until before production and Direct employees are those employees without which the production process cannot operate (SSMT Industry Forum, 2010).

The VAPP measure allows the production process to be controlled ensuring the maximum difference between output and input values. The output and input values reflect the difference between the final value of the end product and the value of raw materials and services used. An example of a VAPP improvement is absorbing up or down stream processes into the cell or factory while still maintaining the current number of direct employees (SSMT Industry Forum, 2010).

VAPP =Output Value-Input Value/ Number of Employees

2.5 Conceptual Framework

Total quality management is considered to be an important management philosophy which supports the organizations in their efforts to obtain satisfied customers. The seven internal TQM drivers once evaluated can be implemented by Kenyan small scale manufacturing firms.TQM is best implemented in small continuous steps that ensure that improvements are made at every stage (Harrow, 2005).

The first and immediate goal of most quality management practices is to improve internal quality performance measures (Steeples, 1992). Good quality practices resulting in the improvement of internal quality performance will lead to the improvement of external performance (Deming, 1986). Performance measures can be in terms of internal quality results, external quality results, business objectives, and business results, Any manufacturing unit should have a mechanism or system in place, to translate the plans or objectives into

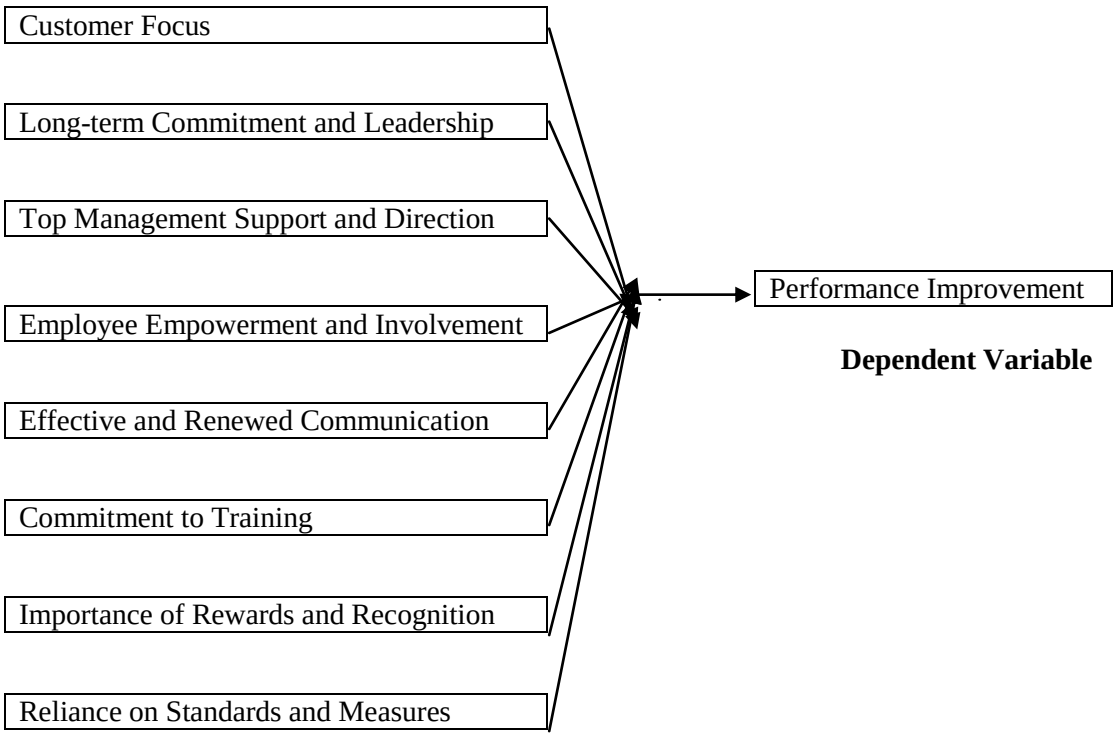
measurable outputs so that every person in the organization knows exactly what output they are expected to produce and how to measure that (Sharma & Kodali, 2008).

A customer-oriented organization is fundamentally different from a traditional organization. Organizations must look to its customers first in determining what it needs to do (Schonberg, 1994). Customer satisfaction is a very important internal driver identified with most small scale manufacturing firms and is considered as a prime factor responsible for TQM implementation and success. Leadership and long term commitment is concerned with the top leader role and behaviour in driving the organization towards total quality. The crucial role top management plays in driving company-wide quality management has been recognized by practitioners and researchers as one of the major factors for achieving successful quality performance (Puffer & McCarthy, 1996).

The success of TQM demands communication with and among all the organization members, suppliers and customers. During times of organizational change, as well as part of day-to-day operation, effective communications plays a large part in maintaining morale and in motivating employees at all levels (Hashmi, 2000).People management can be considered as an important factor. But in place of people management change management can be considered because today's employee relationships and management are based on change initiation and implementation, with all the employees working together to make the change process a success (Capello, 2002).

Recognition should be provided for both suggestions and achievements. As people are recognized, there can be huge changes in self-esteem, productivity, quality and the amount of effort exhorted to the task at hand (Smith, 1993).

These eight internal TQM drivers affect the small scale manufacturing firms' quality management and performance. Customer focus, long-term commitment, top management support, employee empowerment, effective communication, training, rewards and recognition and standards & measures are independent variables which determines the firms performance, hence performance improvement is dependent variable determined within the conceptual framework;



Independent Variables

Figure 2.5: Conceptual Framework

Source: author (2013)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out the research methodology that was adopted so as to meet the objectives stated in chapter one of this study. The research setting, the population of interest, sample, data collection instruments and data analysis techniques is discussed.

3.2 The Research Design

The research adopted a cross sectional survey of existing small scale manufacturing firms in Nairobi County. Surveys allow the collection of large amount of data from a sizable population in a highly economical way. The study was used to provide a comparative analysis of how various internal TQM drivers contributed to the performance improvement in small scale manufacturing firms in Nairobi, Kenya.

3.3 Population

Target population in statistics is the specific population about which information is desired. Population is well defined or set of people, services, elements, events group of things or households that are being investigated (Ngechu, 2004). The target population for this study comprised of the production managers of the small scale manufacturing firms within the County of Nairobi.

3.4 Sample Design

A sample of all the production managers was selected making a total of 64 respondents. The method used was systematic random sampling method because in this method each and every

member of the population had an equal chance of being selected as a sample. They were asked to complete the questionnaires. The selected sample was deemed adequate for general conclusions about the entire population. The sample was also adequate for the statistical tools which were used in the data analysis.

3.5 Data Collection

Relevant data for analysis was primary data, which was obtained through the administration of structured questionnaires. The questionnaire was considered most appropriate because it allowed for collection of data from many respondents within a short time and provided a high degree of data standardization and adoption of generalized information amongst any populations. The questionnaire consisted of both closed and open-ended questions since this led to control over the data collected. Section A of the questionnaire sought to obtain firm data. Section B sought to obtain data on the internal TQM drivers and Section C acquired data on the firm's performance for the last 5 years. The respondents filled in the questionnaire as the research assistants awaited. This helped reduce the instances of non-response. Where necessary, the questionnaires were left and picked up after a week and this ensured a high proportion of usable responses.

3.6 Data Analysis

Completed questionnaires were edited for uniformity, completeness and consistency. The questionnaires were coded to allow for statistical analysis. Social Package for Social Sciences (SPSS) data analysis program was utilized to generate inferential; multiple regression analysis & factor analysis and descriptive statistics; frequencies, percentages, mean and standard deviation from the respondents to establish the relative importance and weight for

each variable. Ms excel spread sheet tools was utilized in presenting the quantitative data. The researcher used Multiple Regression Model, whereby the variables of interest were internal TQM drivers (independent variables) and performance improvement (dependent variable). The model was in form of:

$$Y= \beta 0+ \beta_1 X_1+\beta_2 X_2+\beta_3 X_3 +\beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6+ \beta_7 X_7 + \beta_8 X_8+E$$

Where:

B0 is the model's constant, β_1 to β_8 are the model's coefficients and Y is the firm's performance improvement. X_1=Customer Focus, X_2=Long-Term Commitment & Leadership, X_3=Top Management Support & Direction, X_4=Employee Empowerment & Involvement, X_5 = Effective & Renewed Communication, X_6=Commitment to Training, X_7=Importance of Rewards & Recognition and X_8=Reliance on Standards & Measures. E is the error term.

The researcher also carried out a T-test confidence level to establish the significance of the independent variables in explaining the changes in the dependent variable.

CHAPTER FOUR:

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This section presents the analysis and findings from the primary data that was gathered from the respondents. All completed questionnaires were edited for completeness and consistency. Statistical Package for Social Sciences (SPSS) was used in statistical analysis. This chapter looked at the data to be analyzed, the regression analysis and interpretation.

4.1.1 Response Rate

The study utilized primary data gathered from the questionnaires dropped and picked by the researcher. The questionnaires targeted heads of production in small scale manufacturing firms in Nairobi. A total of 45 out of 64 questionnaires were completed and returned. This represents 70% response rate which can be used to draw conclusions.

Table 4.1 Number of respondents

Target Respondents	Actual Respondents	Response rate (%)
64	45	70%

Source: Research Findings (2013)

From table 4.1 above, the response rate was 45 (70%). The researcher deemed this as adequate and sufficient for the purpose of data analysis.

4.1.2 Size of the Company

The size of the firm can determine its level of investment in TQM initiatives. The respondents were asked to indicate the size of the company in terms of staff composition and the responses are as in table 4.2 below.

Table 4.2: Size of the Company

Size of the Company	Frequency	Percentage (%)
31-50 Employees	29	65%
21-30 Employees	12	27%
11-20 Employees	4	8%

Source: Research Findings (2013)

From the findings in table 4.2 above, it was found that 29 (65%) of the firms had 31-50 employees, 12 (27%) had 21-30 employees while 4 (8%) had 11-20 employees. This is an indication that the firms that participated in this study have enough employees to undertake internal quality management activities.

Company size impedes the implementation of TQM practices. Larger companies tend to gain greater benefits from TQM than smaller firms.

4.1.3 Duration of Existence

The duration of existence can determine its level of investment in TQM initiatives. The respondents were asked to indicate the duration of existence in terms of number of years and the responses are as in table 4.3 below.

Table 4.3 Duration of Existence

Duration of existence	Frequency	Percentage (%)
Above 11Years	23	51%
6-10 Years	16	36%
0-5 Years	6	13%

Source: Research Findings (2013)

From the findings in table 4.3 above, it was found that 23 (51%) of the firms had been in existence for more than 11 years, 16 (36%) had been in existence for 6-10 years while 6 (13%) had operated for a period of 0-5 years. This is an expression that the firms that participated in this study have been in operation for a considerable period of time to undertake internal quality management practices.

Duration of existence obstructs the implementation of TQM activities. Organizations that have been in operation for longer periods of time tend to gain greater benefits from TQM since their operations have been properly established than newer firms.

4.2 TQM System Implementation Benefits

There are many benefits that can accrue from the implementation of TQM initiatives. The respondents were asked to respond appropriately on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.4 Implications of TQM System Implementation Benefits on Operations of Small-Scale Manufacturing Firms in Nairobi

TQM System Implementation Benefits	Mean	Std. Dev
The implementation of TQM has lead to quality improvement of products, services, people, processes and environment.	4.56	0.62
The implementation of TQM has lead to the maximization of organizational competitiveness.	4.41	0.61
The implementation of TQM has lead to increased levels of productivity & efficiency and better employee morale	4.25	0.88
The implementation of TQM has lead to an improvement in the organization's financial performance	4.13	0.66
The implementation of TQM has lead to minimization of backlogs, late deliveries and surplus items	3.84	0.81
The implementation of TQM has reduced scrap and rework	3.12	1.31
The implementation of TQM has lead to the elimination of defects	3.01	0.72
The implementation of TQM has lead to reduced levels of cost	3.00	1.09

Source: Research Findings (2013)

To a great extent (M>4.0), the firms that have implemented TQM initiates have: realised quality improvement of products, services, people, processes and environment. Secondly, they have maximised their organizational competitiveness. Thirdly these firms have increased their levels of productivity, efficiency and employee morale. Moreover, these firms have improved their financial performance. Moderately (M>3.0), the firms that have implemented TQM initiates have: realised minimization of backlogs, late deliveries and surplus items. In addition they have reduced scrap and rework. They have also eliminated defects and reduced their levels of cost.

This implies that TQM implementation can lead to increased profitability hence the firm's level of competitiveness.

This is in line with Goetsch & Davis (1995) who defined TQM as an approach of doing business that attempts to maximize the competitiveness of an organization through the continual improvement of the quality of its products, services, people, processes and environment.

4.2.1 Customer Focus Drivers

There are many gains that can accrue from the implementation of Customer Focus drivers. The respondents were asked to respond appropriately to the following Customer Focus drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.5 Implications of Customer Focus TQM Drivers in Small-Scale Manufacturing Firms in Nairobi

Customer Focus Drivers	Mean	Std. Dev
The whole organization has implemented a philosophy of putting customer first.	4.56	1.92
Good customer relationship management is practiced and a customer relations program maintained.	4.46	1.72
Every department and every employee share the same customer-focused vision.	4.09	0.30
The firm continually gathers information in order to stay in tune with the customer's needs.	4.00	0.98
All activities in product design, production and marketing are built around the customer.	3.97	0.52

Source: Research Findings (2013)

To a great extent (M>4.0), the firms have implemented a philosophy of putting customer first. The firms also practice good customer relationship management and maintain a customer relations program. In addition, every department and every employee share the same customer-focused vision in these firms. Lastly, the firms continually gather information in order to stay in tune with the customer's needs. Moderately (M>3.0), the firms cited that all activities in product design, production and marketing are built around the customer.

This signifies that Customer Focus drivers' implementation can lead to good customer relationship management hence better understanding of customers' needs, tastes and preferences.

This is in agreement with LeBoeuf (2000) who argued that the first and overriding feature of TQM is the company's focus on its customers. Quality is defined as meeting or exceeding customer expectations. The goal is to first identify and then meet customer needs. TQM

recognizes that a perfectly produced product has little value if it is not what the customer wants.

4.2.2 Long-term Commitment and Leadership Drivers

There are many mileages that can accrue from the implementation of Long-term commitment and Leadership drivers. The respondents were asked to respond appropriately to the following Long-term Commitment and Leadership drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.6 Implications of Long-term Commitment and Leadership Drivers in Small-Scale Manufacturing Firms in Nairobi

Long-term Commitment and Leadership Drivers.	**Mean**	**Std. Dev**
All senior and middle level managers demonstrate their seriousness and commitment to quality.	4.46	0.50
TQM initiatives in the firm start at the top with the leaders of the organization.	4.31	0.64
The firm has a sound quality policy that is supported by plans and facilities to implement it.	3.81	1.20
Leaders develop a mission statement and strategies that are translated into action plans down through the organization.	3.41	0.79
Leaders prepare, review and monitor quality policy of the organization.	3.16	0.98
Senior and middle level managers communicate the principles, strategies and benefits of TQM to the employees.	3.09	0.81

Source: Research Findings (2013)

To a great extent (M>4.0), all senior and middle level managers have demonstrated their seriousness and commitment to quality. Secondly, TQM initiatives in these firms start at the top with the leaders of the organization. Moderately (M>3.0), the firms have a sound quality policy that is supported by plans and facilities for implementing it. In addition, leaders

develop a mission statement and strategies which are translated into action plans. In these firms leaders prepare, review and monitor quality policy. The firms' senior and middle level managers communicate the principles, strategies and benefits of TQM to the employees.

This suggests that Long-term commitment and Leadership drivers' implementation can result to effective leadership hence the realization of a sound quality policy.

This is in congruity with Cortanda and Woods, (2004) who argued that TQM must involve everyone. To be successful, it must start at the top with the leaders of the organization. All senior managers must demonstrate their seriousness and commitment to quality, and middle managers must, as well as demonstrating their commitment, ensure they communicate the principles, strategies and benefits to the people for whom they have responsibility.

4.2.3 Top Management Support and Direction Drivers

There are many advantages that can accrue from the implementation of Top management support and direction driver. The respondents were asked to respond appropriately to the following Top Management Support and Direction drivers on a five Likert scale where:
(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.7 Implications of Top Management Support and Direction Drivers in Small-Scale Manufacturing Firms in Nairobi

Top Management Support and Direction Drivers	Mean	Std. Dev
Senior managers exhibit personal support by using quality improvement concepts in their management style.	4.62	0.49
Top management has been the driving force behind TQM	4.18	0.72
Top management focuses on their managerial role and is active participant in decision implementation.	4.03	1.06
Management draws up a common vision that eventually transcend to continuous evolution of modern quality management.	3.96	0.72
Top management is fully involved in work process, with follow-ups and free flow of information.	3.84	0.68

Source: Research Findings (2013)

To a great extent (M>4.0), senior managers of these firms have exhibited personal support by using quality improvement concepts in their management style. Secondly, the firms' top management has been the driving force behind TQM. Thirdly, the top management in these firms have focused on its managerial role and is an active participant in decision implementation. Moderately (M>3.0), management draws up a common vision that eventually transcend to continuous evolution of modern quality management. The firms also felt that top management has been fully involved in work process, with follow-ups and free flow of information.

This connotes that top management support and direction drivers' implementation can lead to personal support from the senior management hence success of long-term quality goals and objectives.

This is in accordance with Andersson (2007) and Stoner et al. (1995) who said that top management must be the driving force behind TQM. Senior managers must exhibit personal support by using quality improvement concepts in their management style, incorporating quality in their strategic planning process, and providing financial and staff support.

4.2.4 Employee Empowerment and Involvement Drivers

There are many rewards that can accrue from the implementation of Employee empowerment and involvement initiatives. The respondents were asked to respond appropriately to the following Employee Empowerment and Involvement drivers on a five Likert scale where:
(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.8 Implications of Employee Empowerment and Involvement Drivers in Small-Scale Manufacturing Firms in Nairobi

Employee Empowerment and Involvement Drivers	Mean	Std. Dev
There exists employee involvement that allows the organization to benefit from knowledge and skills individuals bring to the workplace.	4.25	0.51
Critical empowerment programs are designed to enable those with little or no power to overcome whatever form of domination that applies.	3.94	0.84
The management develops and communicates definitions clearly to the employees which eliminate ambiguity.	3.78	0.91
Managers give more discretion and autonomy to the front line employees.	3.69	0.86
Employees at all levels are charged to review and change their work processes in an effort to improve the overall quality of products.	3.59	0.56
Employees overcome domination by having control over key resources and having access to decision making process.	3.16	0.85

Source: Research Findings (2013)

To a great extent (M>4.0), the firms involves employees and this allows them to benefit from knowledge and skills individuals bring to the workplace. Moderately (M>3.0), design of critical empowerment programs by the firms enable those with little or no power to overcome whatever form of domination that applies. The firms' management develops and communicates definitions clearly to the employees which eliminate ambiguity. Mangers in these firms also give more discretion and autonomy to the front line employees. In addition, employees of these firms are charged to review and change their work processes in an effort to improve the overall quality of products. Moreover, employees overcome domination by having control over key resources and having access to decision making process.

This insinuates that employee empowerment involvement drivers' implementation can result to shared responsibilities hence increased motivation and satisfaction of the employees.

This is in concession with Pearson et al. (1995) who cited that employee involvement through teams such as self- manage teams, quality improvement teams, management teams, and executive steering committees allows organizations to benefit from the knowledge and skills the individuals bring to the organizational workplace.

4.2.5 Communication Drivers

There are many merits that can accrue from the implementation of communication drivers. The respondents were asked to respond appropriately to the following Communication drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.9 Implications of Communication Drivers in Small-Scale Manufacturing Firms in Nairobi

Communication Drivers	Mean	Std. Dev
Communication is the life blood of your firm.	4.40	0.75
Communication between all levels in the organization is vital.	4.18	0.85
Communication has been an important means of realizing quality goals of the firm.	4.03	0.54
There has been a strong relationship between good communication and successful quality implementation.	3.16	1.39
Communication has played a significant role in connection with the firm's quality issues.	3.15	1.36
Total quality management has depended on communication that flows in all directions up, down and laterally.	3.13	1.39

Source: Research Findings (2013)

To a great extent (M>4.0), communication is the blood of these firms. Communication between all levels in the firm is vital. In addition, communication has been an important means of realizing quality goals of these firms. Moderately (M>3.0), the firms have a strong relationship between good communication and successful quality implementation. Secondly, communication has played a significant role in connection with the firms' quality issues. Thirdly, total quality management in these firms depends on communication that flows in all directions up, down and laterally.

This presupposes that communication driver's implementation can result to the reduction of unnecessary competition within departments hence help employees work together harmoniously.

This is in conformity with Burroughs (2008) who stated that communication is the life blood of an organization and that it plays a significant role in connection with quality issues. He

said that communication is an important means of realizing quality and that there is a strong relationship between good communication and successful quality implementation.

4.2.6 Training Drivers

There are many benefits that can accrue from the implementation of training drivers. The respondents were asked to respond appropriately to the following Training drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.10 Implications of Training Drivers in Small-Scale Manufacturing Firms in Nairobi

Training Drivers	Mean	Std. Dev
Training has been absolutely vital to the success of TQM.	4.30	0.47
Training has provided an opportunity to empower and motivate employees	4.15	0.60
Training has provided an opportunity to inform employees about the firm's goal of TQM.	4.00	0.73
The firm conducts awareness training for teams of top level managers, mid-level managers, and non-managers.	3.89	1.01
Training has provided workers with the skills and knowledge needed to achieve firm's TQM goals.	3.59	0.89
The firm has additional skills' training for successful TQM implementation.	2.81	0.79

Source: Research Findings (2013)

To a great extent (M>4.0), training has been absolutely vital to the success of TQM in these firms. Secondly, training has provided an opportunity to empower and motivate employees. Thirdly, training has provided an opportunity to inform employees about the firm's goal of TQM. Moderately (M>3.0), these firms conducts awareness training for teams of top level managers, mid-level managers, and non-managers. In addition, training has provided workers with the skills and knowledge needed to achieve firm's TQM goals. To a small extent (M=>2.0), firms have additional skills' training for successful TQM implementation.

This denotes that training driver's implementation can result to the acquisition of the necessary knowledge and skills hence operational effectiveness and efficiency.

This concurs with Kappelman & Prybutok (1995) who emphasized that training is a very important aspect in the implementation of a successful TQM program as it provides an opportunity to inform employees about the goal of TQM and also provide workers with the skills and knowledge needed to achieve those goals.

4.2.7 Rewards and Recognition Drivers

There are many gains that can accrue from the implementation of rewards and recognition drivers. The respondents were asked to respond appropriately to the following Rewards and Recognition drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.11 Implications of Rewards and Recognition Drivers in Small-Scale Manufacturing Firms in Nairobi

Rewards and Recognition Drivers	Mean	Std. Dev
Positive reinforcement through recognition and reward has helped the firm to achieve its quality goals.	4.07	0.62
People work for achievement, advancement, increased responsibility, recognition, job interest as well as money.	3.91	0.87
An appropriate system of recognition and reward has been crucial to the organization's TQM programme.	3.74	0.94
Managers give recognition and reward publicly to maximize their impact and effectiveness.	3.48	1.01
Managers always look for positive behaviour to recognize and reward, rather than negative conduct to criticize.	3.23	0.95
Managers have a wide-range of recognition and reward options to match the ability of individual(s) involved.	2.93	0.92

Source: Research Findings (2013)

To a great extent (M>4.0), positive reinforcement through recognition has helped these firms achieve their quality goals. Moderately (M>3.0), people work for achievement, advancement, increased responsibility, recognition, job interest as well as money. Secondly, an appropriate system of recognition has been crucial to the firms' TQM programme. Thirdly, managers give recognition publicly to maximize their impact and effectiveness. Lastly, managers always look for positive behaviour to recognize. To a small extent (M=>2.0), managers of these firms have a wide-range of recognition and reward options to match the ability of individual(s) involved.

This implies that rewards and recognition driver's implementation can result to motivated employees hence a positive, productive and innovative organizational climate.

This complies with Charantimath (2006) who said that an appropriate system of recognition and reward is crucial to any company's TQM programme, particularly as the quality improvement process offers greater involvement opportunities for ordinary working people. Positive reinforcement through recognition and reward is essential for achievement through participative problem-solving projects.

4.2.8 Standards and Measures Drivers

There are many benefits that can accrue from the implementation of standards and measures drivers. The respondents were asked to respond appropriately to the following Standards and Measures drivers on a five Likert scale where:

(5= Very Great Extent, 4=Great Extent, 3=Moderately, 2=Small Extent and 1=Very Small Extent).

Table 4.12 Implications of Standards and Measures Drivers in Small-Scale Manufacturing Firms in Nairobi

Standards and Measures Drivers	Mean	Std. Dev
Standards and measures have helped the firm in reflecting customer requirements, preferences and changes.	4.34	1.51
Measurement has allowed the organization in setting priorities.	4.04	0.45
Measurement has allowed the organization to evaluate progress.	4.01	0.47
Measurement has allowed the organization to initiate corrective action.	3.92	0.41

Source: Research Findings (2013)

To a great extent (M>4.0), standards and measures have helped the firm in reflecting customer requirements, preferences and changes. These firms have also been allowed to set priorities. In addition, they have been allowed to evaluate progress. Moderately (M>3.0), measurement has allowed the firms to initiate corrective action.

This hints that standards and measures drivers' implementation can result to doing the right thing right the first time.

This is in compatibility with the World Academy (2010) who argued that measurement is the springboard to involvement, allowing the organization to initiate corrective action, set priorities and evaluate progress.

4.3 Performance Index for the last 5 years

There are seven performance measures that are important in determining how a firm can raise standards in 7 key areas (quality of finished products, on-time delivery, staff productivity, stock levels, efficiency of equipment, added value and floor space). The respondents were asked to respond appropriately to the following key performance indicators of quality, cost and delivery (QCD).

Table 4.13 Mean Performance Improvement for the last five years among Small-Scale Manufacturing Firms in Nairobi

Performance Measure	Unit of Measure	2008	2009	2010	2011	2012
People Productivity	Units per direct operator hour	6.54	7.00	10.45	11.23	8.25
Value Added Per Person	Kshs. per person	3.76	4.91	3.09	5.01	5.08
Floor Space Utilization	Kshs. per m²	4.45	3.75	3.10	5.12	5.61
Stock Turns	Has no units	6.30	5.51	4.9	7.27	7.30
Not Right First Time	Parts per million	5.0	4.81	5.43	5.62	5.91
Overall Equipment Effectiveness	Percentage (%)	3.45	3.17	3.76	3.51	4.34
Delivery Schedule Achievement	Percentage (%)	4.63	3.81	4.53	3.91	5.03

Source: Research Findings (2013)

The study found that small-scale manufacturing firms' People Productivity improved from 6.54 in the year 2008-2009 to 8.25 in the years 2011 and 2012. Value Added per Person improved from 3.76 in the year 2008 to 5.08 in the year 2012. Floor Space Utilization improved from 4.45 in the year 2008 to 5.61 in the year 2012. Stock Turns improved from 6.30 in the year 2008 to 7.30 in the year 2012. Not Right First Time improved from 5.0 in the year 2008 to 5.91 in the year 2012. Overall Equipment Effectiveness improved from 3.45 in the year 2008 to 4.34 in the year 2012. Delivery Schedule Achievement improved from 4.63 in the year 2008 to 5.03 in the year 2012.

This is an indication that internal TQM drivers improve performance of small-scale firms where these firms attain a positive improvement after adoption of internal TQM drivers. This reconciles with KCTS, 2009 who cited that most aspects of the production process can be accurately measured in quantitative terms especially in the manufacturing sector.

4.4 Regression Analysis

The researcher conducted a multivariate regression analysis to establish the extent of the relationship between internal TQM drivers (independent variables) and performance improvement (dependent variable) of small-scale manufacturing firms in Nairobi County. The researcher applied Statistical Package for Social Sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study which was in form of:

$$Y= \beta 0+ \beta_1 X_1+\beta_2 X_2+\beta_3 X_3 +\beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6+ \beta_7 X_7 + \beta_8 X_8+E$$

Where β_0 is the model's constant, β_1 to β_8 are the model's coefficients and Y is the firm's performance improvement. X_1 =Customer Focus, X_2 =Long-Term Commitment & Leadership, X_3=Top Management Support & Direction, X_4= Employee Empowerment & Involvement, X_5 = Effective & Renewed Communication, X_6 = Commitment to Training, X_7 = Importance of Rewards & Recognition and X_8= Reliance on Standards & Measures. E is the error term.

The results of the regression were presented in the table below.

4.14 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	.637	.583	.4778
a. Predictors: (Constant), Internal TQM drivers				

Source: Research Findings (2013)

The independent variables that were studied explain only 63.7% of the performance improvement of small-scale firms as represented by the R^2. This can be taken to mean that the independent variables account for 63.7% of the firms' performance improvement. This is an indication that they play a very significant role in determining the performance improvement of the small-scale manufacturing firms. This therefore means that other TQM drivers not studied in this research contribute 36.3% of the performance of small-scale manufacturing firms. Therefore further research should be conducted to investigate the internal TQM drivers (36.3%) that affect performance improvement of small-scale manufacturing firms.

4.15 ANOVA Results

Model		Sum of squares	df	Mean Square	F	Sig.
1	Regression	10.805	4	2.701	11.833	.001[a]
	Residual	6.164	27	.228		
	Total	16.969	31			

Source: Research Findings (2013)

The significance value is .001[a] which is less than 0.05 thus the model is statistically significant in predicting how internal TQM drivers influence the performance improvement of small-scale manufacturing firms. The F critical at 5% level of significance was 3.23. Since F calculated is greater than the F critical (value=11.833), this shows that the overall model was significant.

4.16 Coefficients of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.481	.946		2.623	0.10
	Employee Empowerment	.503	.076	.287	2.675	.009
	Customer focus	.820	.196	.012	.103	.018
	Communication	.420	.072	.130	1.145	.025
	Rewards & Recognition	.407	.134	.282	.727	.008
	Training	.462	.112	.415	2.389	.034
	Top Management Support	.695	.143	.530	1.972	.007
	Long-Term Commitment	.768	.205	.187	2.675	.009
	Standards & Measures	.496	.072	.260	145	.035

Source: Research Findings (2013)

Multiple regression analysis was conducted to determine the relationship between performance improvement and internal TQM drivers. The SPSS generated table above shows the weights of the various variables that were subjected to regression analysis. It is evident that there is a constant value of 2.46which denotes the performance improvement value when the independent variables are held constant. The independent variables have B values which indicate the weights that each is given. Based on the above results, the study derived a model that can be used to measure the performance improvement among small-scale manufacturing firms in Nairobi. The following is the model:

$$Y= 2.481+.503\ X_1+ .820X_2+ 420\ X_3+ .407X_4 +.462X_5+ .695X_6+.768X_7+ .496X_8$$

4.5 Factor Analysis

The researcher also carried out a factor analysis test which reduced independent variables and at the same time indicated the direction and strength of the relationship for each variable.

TABLE 4.17 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.793
Bartlett's Test of Sphericity	Approx. Chi-square	51.302
	df	28
	Sig (p-value)	.002

Source: Research Findings (2013)

To determine the number of components, only the Eigen values greater than or equal to 1 were considered. In addition, the KMO measure and the Barlett sphericity test were affected. The extraction method was principle axis factoring; the rotation method was Varimax with Kaiser Normalization. With the recommended value of 0.6, in order to perform factor analysis in the KMO measure, it was necessary to perform factor analysis on the data since the KMO measure was 0.793.

Table 4.18 Total Variance Explained

Component	**Initial Eigen Values**			**Extraction Sums of Squared Loadings**		
	Total	**% of variance**	**% Cumulative**	**Total**	**% of variance**	**% Cumulative**
1	8.354	71.300	71.300	2.993	14.127	14.127
2	1.884	3.208	74.508	2.744	13.863	27.990
3	.803	3.102	77.610	1.934	12.130	40.120
4	.710	2.789	80.399	1.884	12.978	52.098
5	.623	2.546	82.945	1.803	21.478	73.198
6	.598	2.384	85.429			
7	.521	2.268	87.497			
8	.315	1.621	100.00			

Source: Research Findings (2013)

From the total variance explained table Eigen values (a measure of the variance explained by factors), factor extraction was done to determine the factors using Eigen values greater than 1. Factors with Eigen values less than 1.00 were not used because they account for less than the variation explained by a single variable. The result indicates that 8 variables were reduced into 5 factors. The five factors explain 73.11 % (cumulative percentage) of the total variation, the remaining 3 factors together account for 26.89% of the variance. The explained variation 73.11% is greater than 70% and therefore, factor analysis was important for reducing factors by putting similar ones together.

Table 4.19 : Factor Loading of Variables

Component	Factor	Reliability Coefficient	Eigen Value
F1	Customer Focus	0.713	1.934
F2	Long-term commitment & leadership	0.850	1.884
F3	Top management support & direction	0.885	1.803
F4	Employee empowerment	0.785	1.710
F5	Training	0.884	1.623

Source: Research Findings (2013)

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization .The reliability in the factors was achieved through calculation of Cronbach Alpha coefficients it explains to what extent the variable in the study are explained by the factors. Factor one explains variable by 71.3% with the high Eigen value of 1.934 meaning that factor one is the leading factor in explaining internal TQM drivers for performance improvement among small-scale manufacturing firms in Nairobi. The rank of each factor reduces with the reduction the level of Eigen value.

Table 4.20: Factor Correlation Matrix

Factor	F1	F2	F3	F4	F5
F1	1.000	.376	.324	.387	**.402**
F2	.376	1.000	.398	.371	.383
F3	.324	.398	1.000	.345	.312
F4	.387	.371	.345	1.000	.311
F5	**.402**	.383	.328	.311	1.000

Source: Research Findings (2013)

There is a low correlation between different factors, the maximum being 0.402 (between the factors ‘’F1-Customer Focus and F5- Training’’). This means that all the 5 factors are independent, which implies that they are measuring unrelated dimensions.

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the study presents the summary of findings on internal TQM drivers for performance improvement among small-scale manufacturing firms in Nairobi County. It also includes the conclusions and recommendations made based on the findings of the study. The chapter also gives suggestions for further study.

5.2 Summary of Findings

The study found that TQM System Implementation Benefits which included quality improvement of products, services, people, processes & environment, maximization of competitiveness, increased productivity, efficiency & employee morale, improvement in financial performance greatly influenced the firms' performance improvement. Minimization of backlogs, late deliveries & surplus items, reduced scrap & rework, elimination of defects and reduced levels of cost influenced the firms' performance moderately. On Customer Focus Drivers, philosophy of putting customer first, customer relationship management practice & customer relations program maintenance, sharing of the same customer-focused vision and continuous gathering of information on customer's needs influenced performance improvement highly but activities in product design, production and marketing been built around the customer had less influence on performance improvement.

On Long-term Commitment and Leadership Drivers**,** the demonstration of seriousness & commitment by all managers to quality and TQM initiatives starting with the leaders of the organization highly affected the firms' performance improvement while the existence of a sound quality policy, development of a mission statement & strategies, leaders prepare, review & monitor quality policy and managers communicate the principles, strategies & benefits of TQM to the employees moderately affected performance improvement of small-scale firms. The study found out that aspect of Top Management Support and Direction Drivers which included senior manager's exhibition of personal support, top management being the driving force behind TQM and top management focus on managerial role & decision implementation greatly contributed to the firms' performance improvement. Management draws up a common vision and top management being fully involved in work process contributed moderately to firms' performance improvement.

On Employee Empowerment and Involvement Drivers, the study concludes that existence of employee involvement have a major influence on the firm's performance improvement whereas design of critical empowerment programs, clear development and communication of definitions, employee discretion & autonomy, employees review and change work processes and employees overcome domination moderately influenced the firm's performance improvement. The study found that aspects of Communication Drivers which included communication as the life blood of the firm, importance of communication in the organization and communication as a means of realizing quality goals of the firm highly influenced the firm's performance improvement. Firms' performance improvement was also moderately influenced by existence of a strong relationship between communication and quality implementation, connection of communication with the firm's quality issues and TQM dependency on communication.

On Training Drivers, training been vital to the success of TQM, training has empowered and motivated employees and training has informed employees about the firm's goal of TQM influenced the firms' performance improvement greatly while the firm conducts awareness training for all and training has provided workers with the skills and knowledge moderately influenced the firms' performance improvement but existence of additional skills' training had less influence on the firms' performance improvement. The study found that among Rewards and Recognition Drivers, positive reinforcement influenced firms' performance improvement to a great extent. People work for achievement, advancement, increased responsibility, recognition, job interest as well as money, importance of appropriate system of recognition and reward to the organization's TQM programme, managers give recognition and reward publicly and managers always look for positive behaviour to recognize and reward influenced firms' performance improvement moderately. On the other hand, existence of a wide-range of recognition and reward options had a small effect on firms' performance improvement.

The study established that Standards and Measures Drivers which included helping the firm in reflecting customer requirements, preferences and changes, setting priorities and evaluating organizations' progress influenced the firms' performance improvement to a great extent whereas initiating corrective action moderately influenced the firms' performance improvement.

5.3 Conclusions

From the findings, the study concludes that aspects of TQM System Implementation Benefits which includes; quality improvement of products, services, people, processes & environment, maximization of organizational competitiveness, increased productivity & efficiency & better employee morale and improvement in the organization's financial performance have a major effect on organization's performance improvement. Drivers of Customer Focus such as a philosophy of putting customer first, customer relationship management practice & customer relations program, customer-focused vision and continuous gathering of information on customer's needs have a major influence on organization's performance improvement. Long-term Commitment and Leadership Drivers like the demonstration of seriousness & commitment by all managers to quality and TQM initiatives starting at the top with the leaders of the organization also influence the firm's performance improvement very highly.

Top Management Support and Direction Drivers which includes use of quality improvement concepts by senior managers, top management been the driving force behind TQM and top management active participation in decision implementation have a major influence on organization's performance improvement. The only Employee Empowerment and Involvement Driver that highly influences organization's performance improvement is the existence of employee involvement that allows the organization to benefit from knowledge and skills individuals bring to the workplace. Drivers of Communication such as communication been the life blood of the firm, communication been vital between all levels in the organization and communication been an important means of realizing quality goals of the firm have a major effect on organization's performance improvement .

Training Drivers that have a high influence on the firms' performance improvement includes training been absolutely vital to the success of TQM, employees been empowered & motivated and employees been informed about the firm's goal of TQM. The only Rewards and Recognition Driver that highly influences organization's performance improvement is the positive reinforcement which has helped the firm achieve its quality goals. Standards and Measures Drivers like reflecting customer requirements, preferences & changes, setting of priorities and evaluation of progress also influences the firm's performance improvement very highly.

5.4 Recommendations

Since the study confirmed that there was significant relationship between internal TQM drivers and performance improvement, manufacturing firms should be encouraged to embrace internal TQM drivers more in order to benefit from the concept.

TQM system implementation have been associated with benefits like maximization of organizational competitiveness, minimization of backlogs, late deliveries and surplus items, reduced scrap and rework, elimination of defects, reduced levels of cost and quality improvement of products, services, people, processes and environment. It will be important for the manufacturing firms to look for areas in internal TQM drivers where they can optimize on the mentioned benefits so that they can improve on their performance.

It will also be prudent for other organizations to emulate the example of small-scale manufacturing firms in Nairobi in adopting internal TQM drivers as a performance improvement tool.

5.5 Limitations of the Study

The result of this study may have been affected by the following possible limitations;-

The small size of the sample 64 could have limited confidence in the results and this might limit generalizations to other situations.

The study was based on small-scale manufacturing firms within Nairobi County. The small-scale firms in Nairobi may differ from those of other counties especially the rural ones. As such the results may not be generalized.

The study relied on convenient sampling, as far the respondents were concerned. This may have an effect on the results.

The study was a survey. The use of pre-determined questions may have forced respondents to respond to questions without even understanding them.

Some respondents refused to fill in the questionnaires. This reduced the response rate to 70%. This reduced the probability of reaching a more conclusive study. However, conclusions were made with this response rate.

5.6 Suggestions for Further Study

This research was broad. It dealt with many different internal TQM drivers and performance improvement measures. The researcher suggests that a future research could be done which could concentrate on each internal TQM driver individually and independently. This may

give a deeper insight into such drivers and their contribution in determination of organization's performance improvement.

There is need to conduct a study among small-scale manufacturing firms in other regions of the country in order to establish whether there is any uniformity in the internal TQM drivers that exist among all the small-scale manufacturing firms in the country.

A comparative study can also be carried out to establish the similarities and differences in the internal TQM drivers among small-scale manufacturing firms in Kenya and other East African countries.

Since times change and new concepts arise, it will be important to replicate this study in the future so as to establish whether the situation will still be the same.

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Appendix II: List of Small-Scale Manufacturing Firms in Nairobi

No.	Name of the firm	Category	Location
1	Jaydee Knitting Factory Ltd	Textile	Nairobi
2	Hercules Mills Ltd	Textile	Nairobi
3	Fine Spinners Ltd	Textile	Nairobi
4	Bhupco Textile Mills Ltd	Textile	Nairobi
5	Alpha knits Ltd	Textile	Nairobi
6	United Aryan EPZ Ltd.	Textile	Nairobi
7	Royal Garments EPZ Ltd	Textile	Nairobi
8	Garment Labels EPZ Ltd.	Textile	Nairobi
9	Future Garments EPZ Ltd.	Textile	Nairobi
10	Balaji EPZ Ltd	Textile	Nairobi
11	Alltex EPZ Ltd	Textile	Nairobi
12	Africa Apparel EPZ Ltd	Textile	Nairobi
13	A Baumann (K) Ltd	Woodwork	Nairobi
14	All Africa Timber Industries	Woodwork	Nairobi
15	Crown Cork Co (EA) Ltd	Woodwork	Nairobi
16	Pinewood Industries	Woodwork	Nairobi
17	Awasi General Works	Woodwork	Nairobi
18	Fine Wood Works Ltd	Woodwork	Nairobi
19	Furncon Ltd	Woodwork	Nairobi
20	Ramboo Colourcane Ltd	Woodwork	Nairobi
21	Victoria Timber Ltd	Woodwork	Nairobi
22	Wood manufacturers Ltd	Woodwork	Nairobi
23	Allpack industries Limited	Woodwork	Nairobi
24	Carton	Woodwork	Nairobi
25	Chandaria industries Limited	Woodwork	Nairobi

26	Dodhia Packaging Limited (DPL)	Woodwork	Nairobi
27	East African packaging industries Ltd	Woodwork	Nairobi
28	Interiabels Africa	Woodwork	Nairobi
29	WP Wood products	Woodwork	Nairobi
30	PG Bison (Kenya) Ltd	Woodwork	Nairobi
31	Timsales Ltd	Woodwork	Nairobi
32	Victoria Office	Woodwork	Nairobi
33	Odds & Ends	Woodwork	Nairobi
34	Dinku Furniture Limited	Woodwork	Nairobi
35	Furmart Furnishers	Woodwork	Nairobi
36	Mc craes East Africa	Woodwork	Nairobi
37	Wedgewood Kenya Ltd	Woodwork	Nairobi
38	Kenya Wood Products Ltd	Woodwork	Nairobi
39	Neema Furnitures	Woodwork	Nairobi
40	Newline Ltd	Woodwork	Nairobi
41	Mimosa Furniture Ltd	Woodwork	Nairobi
42	Furniture palace international (K) Ltd	Woodwork	Nairobi
43	Accacia Court Ltd	Woodwork	Nairobi
44	Antarc Enterprises	Woodwork	Nairobi
45	Arapan wood & equipment suppliers Ltd	Woodwork	Nairobi
46	Bony Manufacturers (K) Ltd	Woodwork	Nairobi
47	Maisha Mabati Mills Ltd	Metalwork	Nairobi
48	Devki Steel Mills Ltd	Metalwork	Nairobi
49	Azania engineering works Ltd	Metalwork	Nairobi
50	Bhambra Steel	Metalwork	Nairobi
51	Chuma Fabricators Ltd	Metalwork	Nairobi
52	Cuma Refrigeration	Metalwork	Nairobi
53	David Engineering Ltd	Metalwork	Nairobi

54	Foundry Works (K) Ltd	Metalwork	Nairobi
55	Elit Trailers Limited	Metalwork	Nairobi
56	Emco steel works Kenya Ltd	Metalwork	Nairobi
57	Adorn metal works	Metalwork	Nairobi
58	Geta Tinsmith	Metalwork	Nairobi
59	AH Mawani &co. Ltd	Metalwork	Nairobi
60	Allied metals services Ltd	Metalwork	Nairobi
61	Doshi iron mongers Ltd	Metalwork	Nairobi
62	Chloride metals (K) Ltd	Metalwork	Nairobi
63	East African metal works Ltd	Metalwork	Nairobi
64	Emco metals Ltd	Metalwork	Nairobi

Source:

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APPENDIX III: The Research Questionnaire

Number……Date……

Section A: Firm Data

1. Name of Company:_____
2. Please indicate the size of the Company (No. of persons).

   11-20 employees [ ] 21-30 employees [ ] 31-50 employees [ ]
3. Please indicate how long the firm has been in existence.

   0-5years [ ] 6-10years [ ] above 11 years [ ]

Section B: Internal TQM Drivers

1. Do you have quality management systems in your firm?

   Yes [ ] No [ ]
2. To what extent has your firm benefited from the implementation of TQM systems within its operations? (Please tick appropriately)

TQM System Implementation Benefits	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
The implementation of TQM has lead to the maximization of organizational competitiveness	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has lead to quality improvement of products, services people, processes and environment.	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has reduced scrap and rework	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has lead to the elimination of defects	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has lead to reduced levels of cost	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has lead to increased levels of productivity &	[5]	[4]	[3]	[2]	[1]

efficiency and better employee morale					
The implementation of TQM has lead to an improvement in the organization's financial performance	[5]	[4]	[3]	[2]	[1]
The implementation of TQM has lead to minimization of backlogs, late deliveries and surplus items	[5]	[4]	[3]	[2]	[1]

3. To what extent has your firm implemented the following Customer Focus TQM drivers? (Please tick appropriately)

Customer Focus Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
The whole organization has implemented a philosophy of putting customer first	[5]	[4]	[3]	[2]	[1]
All activities in product design, production and marketing are built around the customer	[5]	[4]	[3]	[2]	[1]
Every department and every employee share the same customer-focused vision	[5]	[4]	[3]	[2]	[1]
Good customer relationship management is practiced and a customer relations program maintained	[5]	[4]	[3]	[2]	[1]
The firm continually gathers information in order to stay in tune with the customer's needs.	[5]	[4]	[3]	[2]	[1]

4. To what extent has your firm implemented the following Long-term Commitment and Leadership TQM drivers? (Please tick appropriately)

Long-term Commitment and Leadership Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
TQM initiatives in the firm start at the top with the leaders of the organization.	[5]	[4]	[3]	[2]	[1]
All senior and middle level managers demonstrate their seriousness and commitment to quality.	[5]	[4]	[3]	[2]	[1]
Senior and middle level managers	[5]	[4]	[3]	[2]	[1]

communicate the principles, strategies and benefits of TQM to the employees.					
The firm has a sound quality policy that is supported by plans and facilities to implement it.	[5]	[4]	[3]	[2]	[1]
Leaders prepare, review and monitor quality policy of the organization.	[5]	[4]	[3]	[2]	[1]
Leaders develop a mission statement and strategies that are translated into action plans down through the organization.	[5]	[4]	[3]	[2]	[1]

5. To what extent has your firm implemented the following Top Management Support and Direction TQM drivers? (Please tick appropriately)

Top Management Support and Direction Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
Top management has been the driving force behind TQM	[5]	[4]	[3]	[2]	[1]
Senior managers exhibit personal support by using quality improvement concepts in their management style.	[5]	[4]	[3]	[2]	[1]
Top management focuses on their managerial role and is active participant in decision implementation.	[5]	[4]	[3]	[2]	[1]
Top management is fully involved in work process, with follow-ups and free flow of information.	[5]	[4]	[3]	[2]	[1]
Management draws up a common vision that eventually transcend to continuous evolution of modern quality management.	[5]	[4]	[3]	[2]	[1]

6. To what extent has your firm implemented the following Employee Empowerment and Involvement TQM drivers? (Please tick appropriately)

Employee Empowerment and Involvement Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
Managers give more discretion and autonomy to the front line employees.	[5]	[4]	[3]	[2]	[1]
There exists employee involvement that allows the organization to benefit from knowledge and skills individuals bring to the workplace.	[5]	[4]	[3]	[2]	[1]
Employees at all levels are charged to review and change their work processes in an effort to improve the overall quality of products.	[5]	[4]	[3]	[2]	[1]
The management develops and communicates definitions clearly to the employees which eliminate ambiguity.	[5]	[4]	[3]	[2]	[1]
Critical empowerment programs are designed to enable those with little or no power to overcome whatever form of domination that applies.	[5]	[4]	[3]	[2]	[1]
Employees overcome domination by having control over key resources and having access to decision making process.	[5]	[4]	[3]	[2]	[1]

7. To what extent has your firm implemented the following Communication TQM drivers? (Please tick appropriately)

Communication Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
Communication is the life blood of your firm.	[5]	[4]	[3]	[2]	[1]
Communication has played a significant role in connection with the firm's quality issues.	[5]	[4]	[3]	[2]	[1]
Communication has been an important means of realizing quality goals of the firm.	[5]	[4]	[3]	[2]	[1]

There has been a strong relationship between good communication and successful quality implementation.	[5]	[4]	[3]	[2]	[1]
Total quality management has depended on communication that flows in all directions up, down and laterally.	[5]	[4]	[3]	[2]	[1]
Communication between all levels in the organization is vital.	[5]	[4]	[3]	[2]	[1]

8. To what extent has your firm implemented the following Training TQM drivers? (Please tick appropriately)

Training Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
Training has been absolutely vital to the success of TQM.	[5]	[4]	[3]	[2]	[1]
The firm conducts awareness training for teams of top level managers, mid-level managers, and non-managers.	[5]	[4]	[3]	[2]	[1]
Training has provided an opportunity to inform employees about the firm's goal of TQM.	[5]	[4]	[3]	[2]	[1]
Training has provided workers with the skills and knowledge needed to achieve firm's TQM goals.	[5]	[4]	[3]	[2]	[1]
The firm has additional skills' training for successful TQM implementation.	[5]	[4]	[3]	[2]	[1]
Training has provided an opportunity to empower and motivate employees.	[5]	[4]	[3]	[2]	[1]

9. To what extent has your firm implemented the following Rewards and Recognition TQM drivers? (Please tick appropriately)

Rewards and Recognition Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
An appropriate system of recognition and reward has been crucial to the organization's TQM programme.	[5]	[4]	[3]	[2]	[1]
Positive reinforcement through recognition and reward has helped the firm to achieve its quality goals.	[5]	[4]	[3]	[2]	[1]
People work for achievement, advancement, increased responsibility, recognition, job interest as well as money	[5]	[4]	[3]	[2]	[1]
Managers always look for positive behavior to recognize and reward, rather than negative conduct to criticize.	[5]	[4]	[3]	[2]	[1]
Managers give recognition and reward publicly to maximize their impact and effectiveness.	[5]	[4]	[3]	[2]	[1]
Managers have a wide-range of recognition and reward options to match the ability of individual(s) involved.	[5]	[4]	[3]	[2]	[1]

10. To what extent has your firm implemented the following Standards and Measures TQM drivers? (Please tick appropriately)

Standards and Measures Drivers	Very Great Extent	Great Extent	Moderately	Small Extent	Very Small Extent
Measurement has allowed the organization to initiate corrective action.	[5]	[4]	[3]	[2]	[1]
Measurement has allowed the organization in setting priorities.	[5]	[4]	[3]	[2]	[1]
Measurement has allowed the organization to evaluate progress.	[5]	[4]	[3]	[2]	[1]

Standards and measures have helped the firm in reflecting customer requirements, preferences and changes.	[5]	[4]	[3]	[2]	[1]

Section C: Performance Improvement: Data for the last five years

Performance Indicator	Unit of Measure	2008	2009	2010	2011	2012
Quantity of defective units	Parts Per Million					
Total quantity of units supplied	Parts Per Million					
Value of raw material	Kenya Shillings					
Work-in-progress(WIP)	Numbers					
Equipment Availability	Percentage					
Equipment Performance	Percentage					
Equipment Quality	Percentage					
Number of good units made	Numbers					
Number of direct operator hours	Hours					
Sales Turnover of Model Area	Kenya Shillings					
Square meters of Model Area	Square Meters					
Number of planned deliveries	Percentage					
Number of not-on-time deliveries	Percentage					
Number of incorrect quantity deliveries	Percentage					
Employee Output Value	Kenya Shillings					
Employee Input Value	Kenya Shillings					
Number of employees	Numbers					

Thank you for taking your time to complete the questionnaire.