THE ROLE OF QUALITY IN GROWTH OF SMALL AND MEDIUM ENTERPRISES AND ECONOMIC DEVELOPMENT IN KENYA

K. L. Wanjau, R. W. Gakure and J. Kahiri
Department of Entreprenuership and Procurement, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya
E-mail:k_wanjau@yahoo.com

Abstract
The purpose of this paper was to evaluate the contributions of quality initiatives towards growth and industrialization of manufacturing small and medium enterprises (SMEs) in Kenya. Quality has been recognized as a successful management philosophy in the manufacturing industry. The study adopted an exploratory approach using a descriptive survey. The instruments of the study were a questionnaire, interview schedule (structured) and an observation checklist. In this study, 123 manufacturing SMEs were extensively surveyed, to ascertain contributions made by quality initiatives in the manufacturing sector towards realizing growth and industrialization. The correlations between various quality implementation dimensions and growth have been evaluated and validated by employing various statistical tools. The findings revealed that quality has a positive influence on growth and industrialization of an organization and economic development in general. The overall results indicated that entrepreneurial management (EM), marketing orientation (MO) and capacity enhancement of employees had significant linear relationship with quality. Surprisingly, no statistical evidence was found to confirm the effect of investing in technology and adoption of quality. The study recommended that SMEs must create a culture that is conducive to and supportive of quality implementation. They must align quality implementation with their goals and competitive environment. Government and other organizations supporting entrepreneurship development could assist and train manufacturing SMEs to acquire appropriate technology. This will go a long way in assisting SMEs in initiating quality practices supported by technology. Findings of the present study may assist public policy – makers and entrepreneurs to evaluate the importance of quality in enhancing SME growth, which serve as the best potential source of job creation and industrialization of the Kenyan economy.

Key words: Quality, SMEs, manufacturing enterprises, ISO, consultant, enterprise growth, economic growth, plant

1.0 Introduction

Small and medium manufacturing enterprises in Kenya's manufacturing sector are defined as enterprises with full-time employees not exceeding 100 or annual sales turnover not exceeding Ksh 150 million. The development of competitive and resilient small and medium enterprises (SMEs) forms an integral component of Kenya's initiatives to be globally competitive and prosperous nation with a high quality of life by 2030 (GoK, 2007).

The challenges posed by increased liberalization, new entrants to the market, increased standards requirements and technological developments require SMEs to raise efficiency levels, strengthen inter-firm linkages and respond timely to market changes. At the same time, greater integration into the global economy provides opportunities for SMEs to participate in the international value chain and supply chains networks. This will enable SMEs to move up the value chain and adopt new technologies, particularly information and communication technology (ICT). Only SMEs that are capable of harnessing technology and knowledge to develop high value-added products of superior quality will be able to compete globally (GoK, 2007).

It is clear that quality has emerged as a strategic competitive tool for organizational success (Yong and Wilknson, 2002). In today's business environment, organizations cannot afford to ignore the strategic implications of quality for its competitive position (Rohitratana & Boon-Itt, 2001).

Both large and small, production and service, and public and private organizations have made commitments to quality initiatives like total quality management (TQM) by making it fundamental to their growth (Oakland, 2004). Increasing product quality results in higher profits because costs are decreased and productivity and market share are improved (Ryan, Deane & Ellington, 2001; Gupta, 2004).

The relevance of formal quality management initiatives such as Total Quality Management (TQM), quality certification, and Quality Awards to small and medium enterprises (SMEs) has been a highly contentious issue in the quality and SME literatures over the past decade. Besides the ubiquitous criticisms of these initiatives based on the prohibitive costs of implementation, increased bureaucracy and complexity, and managerial confusion over the different methods, there is little evidence to support their pecuniary rewards to SMEs (Husband and Mandal, 1999).

Internationally, empirical research into the rate and success of implementation of these initiatives in SMEs is largely considered to be inadequate Literature in this area is more often conceptual than empirical, and where empirical, it sometimes suffers from methodological limitations (such as unclear or inconsistent definitions of what constitutes an SME) (Ramsey 1998; Kuratko, Goodale and Hornsby, 2001). Of the limited research available, it appears that SMEs have been very slow to implement formal quality models, and where they have, the outcomes are inconclusive (Husband and Mandal, 1999).

1.1 The Problem

Although small companies tend to be creative and innovative, they generally lag behind larger firms when it comes to adoption of quality (McMahon, 2001). Studies by Elmati and Kathawala (1999) indicate that the adoption of quality by small businesses has been minimal. The initial emphasis for a long time has been measuring the success of a business in relation to mass production. Research has confirmed the strategic benefits of quality programs and better quality is proven to contribute to greater market share and return on investment (Cole, 1992; Phillips, Chang and Buzzell, 1983), lower manufacturing costs; improve productivity (Garvin, 1988) and improve the area of strategic performance (Zhang, 2000).

Despite the above cited benefits, SMEs have been somewhat slow in adopting quality initiatives, not only due to excessive managerial involvement in day-to-day entrepreneurial activities that typically focus on sales strategies and market growth but also because they are less comfortable with the formal approaches that have been advocated as part of ISO 9000 series registration, and introduction of quality initiatives like TQM (Yusof and Aspinwall, 1999; McTeer andDale, 1994). Despite its conceptual rigor, the role of quality in affecting organizational growth or performance (whether facilitative or causative) particularly within the context of small businesses requires research attention (Tatoglu and Zaim, 2006).

Research shows that most SMEs loose between 5%-15% of sales revenue as a result of the lack of attention to quality (McMahon, 2001). This suggests that formal quality management systems are important tools contributing to the growth and development of SMEs. This study aimed to address the gap in research on the relationship between quality initiatives and SME growth in Kenya. In order to bridge the gap and provide SMEs with practical assistance in dealing with this issue, this research used a sample of manufacturing SMEs within Kenya to examine whether adoption of quality inevitably contribute towards growth of the firm and the economy.

1.2 General Objective

The study investigated the role of quality in growth of SMEs in Kenya.

1.2.1 Specific Objectives

In order to fulfill general objectives, this study intended:

(i) To investigate whether adoption of quality in SMEs influences entrepreneurial management**.**
(ii) To investigate whether adoption of quality in SMEs influences market- orientation.
(iii) To determine whether Small and Medium Enterprises in the manufacturing sector have the employee capacity to introduce and ensure adoption of quality.
(iv) To investigate whether adoption of quality influences investment in technology (plant).
(v) To determine whether the independent factors (EM, MO, capacity of employees and investment in technology) together influence adoption of quality.

1.3 Research Hypotheses

To examine how each of the criterion variables influences the response variable, the following null hypotheses were tested:

H_1: There is no relationship between entrepreneurial management (EM) and adoption of quality in SMEs.
H_2: There is no relationship between market orientation (MO) and adoption of quality in SMEs.
H_3: The capacity of employees is not related to adoption to quality in SMEs.
H_4: There is no relationship between investment in technology and adoption of quality in SMEs.
H_5**:** There is no relationship between adoption of quality and growth in SMEs.
H_6: The independent factors (EM, MO, capacity of employees and investment in technology) together do not influence adoption of quality.

1.4 Justification

Since Small and Medium Enterprises dominate the industrial scene in most developing countries, a deeper understanding of quality and why adoption of quality is important, may make it possible to pursue industrialization, thereby leading to results that are more equitable and efficient. Quality is a key strategy for maintaining competitive advantage and is a way of managing firms to improve its overall effectiveness and performance towards achieving world- class status (Zhang, Waszink and Wijngaard, 2000, Chapman and Al-Khawaldeh, 2002).

The only way a developing nation can increase its trade activities and develop sustainable basis is to improve the quality of its product and services. Developing countries, particularly the emerging ones, are blessed with a big advantage. They do not have to make the mistakes and omissions that were made by industrialized countries, because they can move into the proper position if they take time to study the trends. In an increasingly competitive world, quality is no longer an optional extra; it is an essential strategy for all firms regardless of size and location (Agus, 2000).

Research pointing to the effectiveness (or otherwise) of quality initiatives in SMEs is important to the continued development and competitiveness of small and medium enterprises. The growing interest in adoption of quality has led to the emergence of a distinct stream of quality research. Although a number of researchers and academicians have extensively examined quality implementation practices in industrialized countries such as the United States of America, Japan, the United Kingdom and other European countries, it is only recent years that a few researchers have begun to examine quality practices in developing countries. Of the few studies in developing countries, the majority has examined quality practices of large firms. Thus, studies on adoption of quality practices by SMEs in developing countries, particularly in Africa, are few (Magd, 2008).

It is relevant to note that, although a significant part of its industrial structure is mainly dominated by SMEs, few studies address the analysis of quality implications within smaller countries (Pinto, 2008). In line with Bayati and Taghavi (2007), there is a need for research on adoption of quality by SMEs in specific geographical regions. Kenya seems to be an interesting case given the significant role that SMEs play in the economic sector and due to the fact that it has a more advanced economy in comparison with other East African countries. To date, research interest in the role of quality in SMEs in general, and manufacturing SMEs in particular, is surprisingly sparse and underdeveloped (Weinzimmer, 2000). There is limited research literature to date on the adoption of quality by SMEs in Kenya.

2.0 Literature Review

The study examined the role of quality in growth of small and medium enterprises in Kenya. In this section, the study explores the role of quality in SMEs as articulated by various scholars and the research gaps they identified .The study focuses on both theoretical and past studies on the topic. A conceptual framework has also been developed.

2.1 Concept of Quality

Deming (1986) considered quality and process improvement activities as the catalyst necessary to start an economic chain reaction. Improving quality leads to decreased costs, fewer mistakes, fewer delays, and better use of resources, which in turn leads to improved productivity, which enables a firm to capture more of the market, which enables the firm to stay in business, which results in providing more jobs (Summers, 2006).

The quality concept has been a popular research topic in marketing and management literature where researchers have attempted to identify key dimensions of quality initiatives and performance. Researchers have defined the concept of quality in different ways ranging from perception of value (Summers, 2006) to conformance to requirements (Deming, 1986), fitness to use (Juran, 1979) and finally to meeting customer's expectations (Oakland, 2004). Quality is a customer determination based on the customer's actual experience with the product or service, measured against his or her requirements stated or unstated, conscious or merely sensed, technically operational or entirely subjective and always representing a moving target in a competitive market (Cole, 2002). Gupta (2004) point out the importance of quality by saying "quality is an important strategic dimension and a key competitive weapon that cannot be ignored by any corporation."

2.2 Overview of the Kenya Manufacturing Sector

The growing competition in the market place, the advance of manufacturing technologies, and shorter product life cycles has exerted strong impacts on the entire manufacturing industry. Under such a dynamic environment, small and medium enterprises (SMEs) have deployed various approaches to reposition their competitive priorities such as cost, quality and delivery so as to achieve the ultimate goal to customer satisfaction (Chen, 1999). The Kenyan economy has remained predominantly agro- based since independence, with the manufacturing sector remaining an integral part of the country's development strategies.

The manufacturing sector is an important source of employment for the country's labour force and currently employs about 2.7 million Kenyans in 2007 with micro, small and medium enterprises (MSMEs) share in employment having expanded rapidly in recent years. Over the last 5 years, employment in manufacturing has grown at a rate faster than in all other activities. The sector's real value added grew by 6.2% in 2007 compared to 6.3% in 2006. Total value output rose to Ksh 603.7 billion in 2007 from Ksh 558.3 billion in 2006 representing an 8.1% growth (GoK, 2008).

Since 2003 the sector has shown improved growth resulting from enhanced power supply, increased market opportunities within the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA), favorable tax reforms and other incentives. Sub-sectors which recorded growth were meat and dairy products, canned vegetables, fruits, fish, oils, fats; beverages and tobacco; petroleum and other chemicals among others. The significant growth recorded in key sub-sectors was mainly due to the opening up of new processing plants, diversification of products, increased capacity utilization and a construction boom leading to increased regional trade especially for firms exporting manufactured goods. Growth in business investment on the other hand led to increased output in manufacturing hence contributing to the overall economy.

2.3 Conceptual Framework

In a conceptual framework, descriptive categories are systematically placed in a broad structure of explicit propositions, statements of relationships between two or more empirical properties to be accepted or rejected (Parsons & Shils, 1962). It comprises of independent variables and dependent variables.

This study adopted a conceptual framework of strategic importance to identify some underlying forces behind different aspects of the key concept of quality. In particular, it investigated the significance of entrepreneurship management (namely risk taking and innovations), market orientation; capacity enhancement and technology (see figure.2.0). According to Wolff and Pett (2006) within SME research, the issue of firm growth/ performance has taken a place of prominence as a dependent variable.

Figure 2.0 below depicts the relationship between different constructs that are of paramount importance for achieving long-term sustainable competitive advantage.

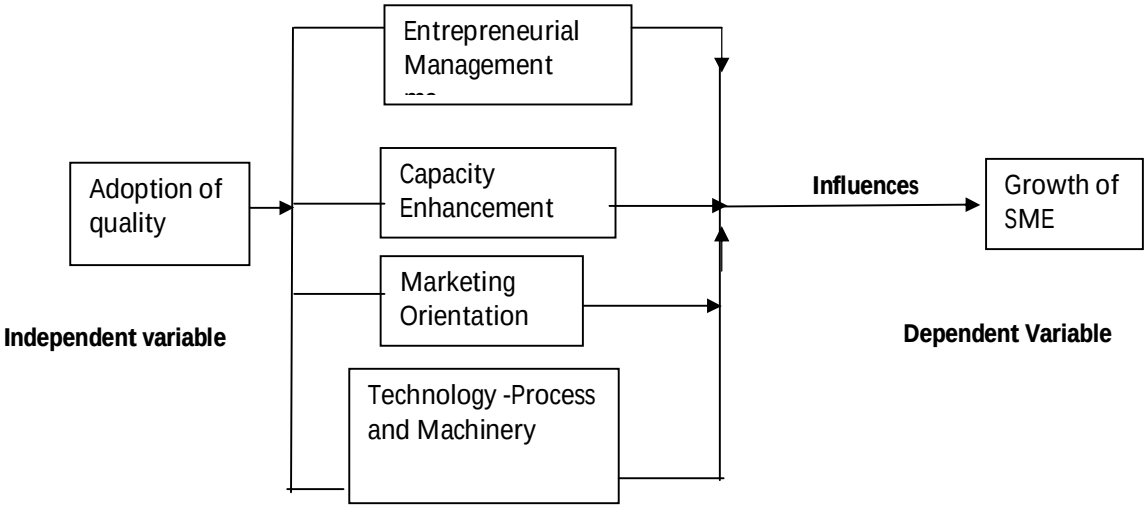

Figure 2: Conceptual Framework

2.3.1 Relationship between Entrepreneurial Management and Adoption of Quality

Entrepreneurship contributes significantly to the economy (Ahire, Walter and Golhar 1995). Schumpeter (1961) simply defines the entrepreneur as the one who brings about innovations which is what creates real development in the economy. Without the entrepreneur the economy would grow (too) slowly. The entrepreneur creates 'revolutionary' expansions in the economy by creating new combinations of existing resources, such as new products, new production methods or new markets, new sources of supply of raw materials and semi manufactured products and development of new organizations (Schumpeter, 1961). The entrepreneurial function or role is thus defined by its disproportional contribution to the economy. Or in other words, an entrepreneur is one who contributes significantly more than others to the economy by virtue of creativity and realizing new combinations.

Entrepreneurial management is a management style that involves a set of organizational processes, methods and styles used by an enterprise to act entrepreneurially (Jarillo & Stevenson, 1990). Entrepreneurial management consists of managerial training, quality objective setting, commitment to quality, systematic business planning and vision, and actively championing communicating quality issues. The implementation of product quality in SMEs revolves around the role and responsibilities of the manager/owner. The success or otherwise of implementing quality initiatives like TQM is often down to the owner/manager of the business who constitutes the driving force behind adoption of quality (van der Weile and Brown, 1998; Warnack, 2003).

The firm's owner/manager can encourage quality in the design process by sheltering the design function from pressures to rush new products to market before they have been thoroughly tested (Hammer, 2001). The entrepreneur influences work attitudes through the development and communication of a clear strategy that identifies the nature and direction of the organization as including quality performance, thus, encouraging goal congruency (Spilling, 2001). The entrepreneur or manager should accept his/her responsibility for adopting quality and provide active quality leadership, thus it is hypothesized:

Hypothesis 1: There is no relationship between entrepreneurial management and adoption of quality by small and medium enterprise.

2.3.2 Relationship between Market Orientation and Adoption of Quality

Market orientation (MO) is perceived as a system of corporate beliefs and values pivoting around; (1) the creation of superior customer value at a profit while not neglecting the interest of other key stakeholders, (2) the shaping of the company's internal environment and climate so that the company can be responsive to market information (Forker, 1997). On these grounds, it can be inferred that market orientation is an organizational culture that places the customer in the centre of the strategies or even at the top of the company's considerations. Ho (1999a) admits this cultural dimension when finding that the company's top management beliefs have a catalytic role as to whether the firm pursues a market orientation or not.

Quality of products has become an important aspect of competitiveness and a key market access concern in the export markets (Burke and Jarhatt, 2004). Consumers are increasingly demanding International Standards Organizations (ISO) Certification since they act as signals for quality, health and safety, and environment best practices (GoK 2007). Value creation for customers calls for close co-ordination between marketing and quality

departments (Slater and Narver, 1995). Both quality implementation and market orientation require an organizational structure to be designed around the flow of value-adding activities and should also empower employees to manage organizational change. Given the information oriented nature of quality practices and market oriented firm, quality implementation may offer a rich array of tools that organizations could be transformed in achieving market orientation. Based on these and other supporting arguments we hypothesize that:

Hypothesis 2: There is no relationship between marketing orientation and adoption of quality in SMEs.

2.3.3 Relationship between Capacity Building and Enhancement of Employees and Adoption of Quality

Capacity building and enhancement consist of training and education, participation in decision-making, suggestion systems, incentive mechanisms and work autonomy (Temtime and Solomon, 2002). Capacity effectively translates into the knowledge of what to do and how to do it, and the capability to transform that knowledge into effective decisions and actions to solve development problems for both the short and long-term (Slack and Lewis, 2002). Employee empowerment is effective in SMEs where most frequently the customer's perception of quality stands or falls based on the action of the employee in one-on-one relationship with customer (Temtime and Solomon, 2002). In recent years, the emphases on human issues and involvement of employees have increased within the field of quality (Cruickshank, 2000).

The goal of the organization is to develop a useful quality system and employees are involved in developing the procedures and work instructions that can prepare the way for further progress down the quality maturity path. When employees are loyal to the firm and have pride in being part of it, they will be more willing to take individual risks in order to better the firm. Small and medium enterprises put only average emphasis on the importance of employee empowerment and involvement in quality implementation (Temtime & Solomon, 2002), thus it's hypothesized:

Hypothesis 3: There is no relationship between adoptions of quality and enhancing employee capacity in SMEs**.**

2.3.4 Relationship between Investment in Technology and Adoption of Quality

Technology is a broad concept that deals with a species' usage and knowledge of tools and crafts, and how it affects a species' ability to control and adapt to its environment. In human society, it is a consequence of science and engineering, although several technological advances predate the two concepts (Stoneman and Diederen, 1994). In order to achieve and maintain competitiveness in the international market, small and medium enterprise manufacturers must embrace modern technologies that enable them develop efficient production (Greenway, 1994). Maintaining consistent quality of products and reducing human content are major factors affecting a firm's decision to upgrade manufacturing technology.

Advanced manufacturing technology can improve quality throughout the entire manufacturing process in areas such as materials handling, inventory control and production planning and scheduling. Advanced systems lead to quality improvements in the design stage because errors are discovered earlier in the process and more quickly. This allows adjustments to be made much faster and more accurately than without advanced manufacturing technology, helping to ensure quality in the manufacturing process (Ariss, Raghunathan and Kunnathar, 2000). Its adoption by small manufacturers gives them advantages over traditional manufacturing systems, such as lower cost quality improvements, higher productivity, and less working capital tied up in inventory (Phillips & Ledgerwood, 1994).

Technology is mainly concerned with production automation, flexible manufacturing and advanced processing equipment. Technology contributes to the competitive advantages of product quality, flexibility and low cost (Chen, 1999). Studies have shown that Kenya's small and medium enterprise manufacturers are applying relatively old technology compared to its neighbors. SMEs in Kenya are finding it difficult to access the local and export market due to poor production techniques (GoK, 2007). Most of the plants and machinery is sourced from Europe and Asia. Increasing value addition in the entire production chain is imperative if Kenya is to achieve industrialization (GoK, 2007).

Hypothesis 4: There is no relationship between investment in technology and adoption of quality in small and medium enterprises.

2.3.5 Relationship between Quality Adoption and Growth in Small and Medium Enterprises

The ever increasing intensity of market competition has made the implementation of quality practices, a prerequisite for a firm's survival. In comparing larger firms with smaller firms, Hendricks and Singhal (2001) argue that smaller firms tend to benefit more from quality initiatives like TQM as compared to larger firms. This argument contradicts with some of the earlier arguments on the role of quality initiatives in SMEs (that quality initiatives are less beneficial to smaller firms).

As quality improves, so does cost, resulting in improved market share and hence profitability and growth. Improving both internal (conformance) quality and external (customer perceived) quality not only lowers cost of poor quality or "non-quality" but also serves as a driver for growth, market share and profitability. In addition to profitability and market share, quality drives growth (Oakland, 1989).

Hypothesis 5: There is no relationship between adoption of quality and growth in small and medium enterprise.

3.0 Methodology

The study adopted an exploratory approach using a descriptive survey design, which ensured ease in understanding the insight and ideas about the problem. It aimed to investigate five objectives and testing of five hypotheses formulated from the review of the literature. In this study, descriptive survey design was used to obtain information from a sample of 123 respondents and for testing hypotheses on adoption of quality by SMEs. Descriptive survey design is flexible enough to provide opportunity for considering different aspects of a problem under study (Kothari, 2004). This design was further appropriate for this study since Borg, Gall & Gall (2003) note that descriptive survey research is intended to produce statistical information about the aspects of the research issue (in this case quality) that may interest policy makers and SME entrepreneurs.

3.1 Target Population of the Study

The study focused on manufacturing SMEs in Nairobi and its selected environs namely Ruiru, Athi River and Limuru. This is because manufacturing SMEs in Nairobi and its environs have formal procedures or processes that are documented and registered with regulatory government bodies (Gok, 2007).According to Ministry of Industrialization 2005 data base, 2,120 manufacturing SMEs are registered as formal enterprises. 1,258 manufacturing SMEs are located in Nairobi and its selected environs. This number (1,258) was further divided into sub-sectors, using International Standard Industrial Classification. The sub-sectors are agro-based, chemical and mining and finally engineering and construction. According to the Ministry of Industrialization, 582 enterprises are in the agro-based sub sector, 300 enterprises are in the chemical and mining sub-sector and 354 enterprises are in the engineering and construction sub-sector all based in Nairobi and its selected environs.

3.2 Sampling Technique

The type of manufacturing industry was used as a parameter for stratification to select the SMEs to be included in each stratum. With ideal stratification, each stratum is homogeneous internally and heterogeneous with other strata (Cooper & Schindler, 2003).This criterion required SMEs only involved in manufacturing products and classified using International Standard Industrial Classification, which was used as a stratification factor together with the number of employees.

3.3 Sample Size

Using proportional allocation, 58 agro-based, 30 chemical and mining and 35 engineering and construction enterprises were visited. Stratification is also called for when different methods of data collection are applied in different parts of the population. The ideal stratification was based on the primary variable under study, that is, adoption of quality (Cooper & Schindler, 2003).

3.4 Research Instruments

A self-administered questionnaire, face-to-face standardized interview schedules, and observation were the three principal research instruments of data collection. Primary data was collected using these three tools. An observation checklist provided a reliable and valid account of what was happening in various SMEs. The questionnaire was structured to according to the specific objectives that are entrepreneurial management, technology, market orientation and capacity enhancement and building.

3.5 Pilot Testing

To ascertain the validity and reliability of questionnaire, interview and observation schedules a pre-test and pilot survey was conducted. The purpose of pilot testing was to establish the accuracy and appropriateness of the research design and instrumentation and to provide proxy data for selection of a probability sample (Saunders, Lewis, & Thornhill, 2007).

3.6 Data Analysis

The data obtained from the three research instruments was analyzed by use of descriptive statistics (frequencies and percentages) and inferential statistics. Descriptive statistics in form of frequencies, means and standard deviations were utilized to analyze data obtained from the SME observations schedule (pre-test and post-test results). Analysis of variance (ANOVA) was used to analyse the degree of relationship between the variables in the study (for example the relationship between entrepreneurial management and adoption of quality). This indicated the strength and direction of association between the variables.

The multiple regression analyses determined whether the group of factors proposed together predicted adoption of quality which would also influence growth. The analysis was done using the SPSS computer program to generate the t- value. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was undertaken (Magd, 2008).

4.0 Research Findings and Discussion

4.1 Response Rate

A total of 123 organizations were surveyed to ascertain contributions made by quality initiatives towards realization of growth and responded. This resulted into 100% responses rate.

4.2 Hypothesis Testing

The purpose of hypothesis testing is to determine the accuracy of the study hypotheses due to the fact that the researcher has collected a sample of data, not a census (Cooper & Schindler, 2003). In hypothesis testing the main question is: whether to accept the null hypothesis or not to accept the null hypothesis (Kothari, 2004).

Hypothesis 1*:* There is no relationship between entrepreneurial management and adoption of quality in small and medium enterprise.

To test this hypothesis, which had the null hypothesis that there is no linear relationship between the two variables a linear regression F-test was carried out. Analysis of Variance (ANOVA) was used to determine whether there is a regression relationship, between entrepreneurial management (EM) and adoption of quality in SMEs. The F-test results were, F= 5.037, and 121 degrees of freedom, and the critical values for F-test (1, 120, at 0.05 alpha is 1.2255) which is less than the computed F-value, then we reject the null hypothesis and conclude that there is a linear relationship between the variable entrepreneurial management and adoption of quality in SMEs.

The findings are in support of other research studies that indicate that entrepreneurial management has positive influence on the adoption of quality initiatives in SMEs. As many firms have discovered that the key to customer satisfaction and competitive success lies in emphasizing and achieving product and service quality as a strategic weapon in performing business (Pulat, 1994; Krasachol and Guh, 2001; Reed, Lemak, and Mero, 1999).

Hypothesis 2: There is no relationship between marketing orientation and adoption of quality in small and medium enterprises.

To test this hypothesis, linear regression F-test which had the null hypothesis that there is no linear relationship between the two variables was carried out. The linear regression F-test results were F = 1.56, and 121 degrees of freedom, and the critical values for F-test (1, 120,at 0.05 alpha is 1.2255) which is less than the computed F-value , then we reject the null hypothesis and conclude that there is a linear relationship between the market orientation and adoption of quality in SMEs.

The results of the hypothesis indicate that there is a relationship between MO and adoption of quality initiatives in SMEs studied. This supports the definition of market orientation as advanced by Mandal (2000), who postulated that definition of market orientation shares some common dimensions of quality initiatives philosophies. Day (1994) in his study confirms this relationship between market orientation and adoption of quality initiative like TQM, but warns that the weakness in adoption of quality to achieve market orientation is that the effectiveness of quality practices is internally contained and a repetitive process which may not go beyond the bounds of the organization.

Hypothesis 3: There is no relationship between adoption of quality and capacity of employees in small and medium enterprises

To test this hypothesis, linear regression F-test which had the null hypothesis that there is no linear relationship between the two variables was carried out. The F-test results were, F= 3.75, and 121 degrees of freedom, and the critical values for F-test (1, 121,at 0.05 alpha is 1.2255) which is less than the computed F-value , then we reject the null hypothesis and conclude that there is a linear relationship between the adoption of quality and capacity of employees in SMEs. These findings confirm other studies that show that employee involvement in implementing quality initiatives is critical for its successful implementation.

Studies show that employees' involvement in quality initiatives like ISO 9000:2000 has increased (Cruickshank, 2000). Research in basic quality initiative implementation argues that for successful quality implementation, soft aspects such as; teamwork, extensive training, high level of communication, employee involvement, empowerment and organizational culture must be observed. Employee empowerment is effective in SMEs where most frequently the customer's perception of quality stands or falls based on the action of the employee in one-on-one relationship with customer (Temtime & Solomon, 2002).

Hypothesis 4: There is no relationship between investment in technology and adoption of quality in small and medium enterprises

To test hypothesis, linear regression F-test which had the null hypothesis that there is no linear relationship between investment in technology and adoption of quality in SMEs was carried out. The linear regression F-test results were, F= 0.68, and 121 degrees of freedom, and the critical values for F-test (1, 121, at 0.05 alpha is 1.2255) is more than the computed F-value, then we accept the null hypothesis and conclude that there is no linear relationship between the investment in technology and adoption of quality in SMEs. The rejection of this hypothesis is a reverse of past studies by Philips and Ledgerwood (1994); Zairi, (1993); Scott-Morton, (1991); Ariss, Raghunathan and Kunnathar (2000) who had stated small firms could adopt technologies to gain significant advantages over their competitors.

The study results may be explained by the fact that manufacturing SMEs may not quickly adopt new technology despite consulting a quality inspection firm, because of largely having "traditional" owners or managers (Schroeder, Gopinath and Congden, 1989), who exhibit a fear of technology, which may cause them to create a barrier to the adoption of advanced manufacturing technology.

Hypothesis 5: There is no relationship between adoption of quality and growth in small and medium enterprises.
To establish the strength and the direction of the relationship between adoption of quality programs and growth in firms studied, rankings were made of the various aspects of growth based on whether a firm had adopted any quality initiatives. The study then utilized the Spearman's rho coefficient to indicate the strength and direction of the relationship between adoption of quality and growth in SMEs. The study established that there exists a moderately positive correlation (r = + 0 .379) between the quality programs and growth of firms studied. Therefore, the null hypothesis was rejected and study confirmed that there is a relationship between growth and adoption of quality initiatives in SMEs.

The findings empirically support the notion that SMEs with a higher quality commitment for example ISO 9000, do obtain increased results. These results confirm studies done by previous researchers in this area such as (Douglas and Judge, 2001). Kaynak (2003) also reports a similar correlation between quality initiatives implementation and the perceptual measures of growth. Also Samson and Terziovski (1999) and Dow, Samson and Ford (1999) conducted research in Australia and New Zealand and found a significant relationship between quality management practices and organizational growth/performance.

5.0 Summary, Conclusions and Recommendations

5.1 Summary

Aspects of entrepreneurial management had been influenced by adoption of quality programs. The entrepreneurial orientation and time spent on quality improvement programs were found to have relatively strong influence on the adoption of quality programs by SMEs studied, while benchmarked against, measures by Kittler, Mernard and Phillips, (2007). The study concludes that the entrepreneur/manager influences work attitudes through the development and communication of a clear strategy that identifies the nature and direction of the organization as including quality performance, thus, encouraging goal congruency (Douglas and Judge, 2001). The active involvement, attention, and direction of the entrepreneur is crucial in assuring firm- wide quality adoption.

The study established that marketing orientation (MO) and adoption of quality programs of the SMEs studied was found to be statistically significant at 5% level, indicating a liner model relationship between MO and adoption of quality. As many firms have discovered that the key to customer satisfaction and competitive success lies in emphasizing and achieving product and service quality as a strategic weapon in performing business (Pulat, 1994; Krasachol and Guh, 2001; Reed, Lemak and Mero, 1999).

The study established that adoption of quality has an influence on the capacity of employees. The study supports the arguments that in order to be fully successful and self sustaining, adoption of quality initiatives like TQM requires an extensive refashioning of 'softer' practices (Schonberger, 1994; Dale *et al.,* 1994) whose elements consist of essentially dimensions of human resources management (Dale *et al.,* 1994).

The study established that there is no linear relationship between the investment in technology and adoption of quality in SMEs studied. Smaller firms may lack sufficient financial and human resources required for the implementation of some technological processes, resulting in lower levels of adoption of more costly technologies (Cagliano & Spina, 2002). Studies have shown that Kenya's small and medium enterprise manufacturers are applying relatively old technology compared to its neighbors. SMEs in Kenya are finding it difficult to access the local and export market due to poor production techniques (GoK, 2007).

The study established the significance of adoption quality programs on growth of the firms studied. The findings support findings by Kaynak (2003) who reports a similar correlation between quality initiative implementation and the perceptual measures of growth.

5.2 Conclusion

While there is no single type of strategy, which was associated with growth, the best performing SMEs in the study were those, which were the most active along a number of dimensions while being particularly active in managing their products and markets. In this respect, the study confirms with other research findings that the success of quality adoption appeared to rely more on executive commitment, open organization and employee empowerment rather than on benchmarks and process improvement. This study confirms the direct relationship between quality practices and organizational growth.

5.3 Recommendations

The study recommends institutional managers for both local and foreign, non-governmental organizations (NGOs), funding agencies and the government should assist and train manufacturing SMEs to acquire appropriate technology. The study also recommends that a decision criteria for selecting quality approaches need to be identified, and a rational decision aid framework needs to be developed to assist entrepreneurs of small and medium enterprises when they want to adopt to various quality initiatives. The study also recommends organizations like Kenya Bureau of Standards (KEBS) that run quality inspection programs for manufacturing firms, should restructure their programs to include quality management practices and its implementation in SMEs. The study finally recommends manufacturing SMEs in Kenya must know themselves and what quality really means for them before they start the quality journey. They must create a culture that is conducive to and supportive of quality implementation.

References

Agus, A. (2000). TQM practices in manufacturing companies in Malaysia: *An Exploratory Total Quality Management*, **11**(8), pp 104-51.

Ahire, S., Waller, M. and Golhar, D. Y. (1995). Quality management in TQM firms: An empirical study. *International Journal of Quality and Reliability Management*, **13**, pp 8-27.

Ariss, S. S., Raghunathan, T. S. and Kunnather, A. (2000). Factors affecting the adoption of advanced manufacturing technology in small firms. *S.A.M. Advanced Management Journal,* **65**(2), 14.

Bayati, A. and Taghavi, A. (2007). The impacts of acquiring ISO 9000 certification on the performance of SMEs in Tehran. *TQM Magazine,* **19**(2).

Borg, W. R., Gall, M. D. and Gall, J. P. (2003). Educational Research: An Introduction. (6th edn). New York: Longman Inc.

Burke, G. I. and Jarhatt, D. G. (2004). The influence of information and advice on competitive strategy definition in small and medium sized enterprises. *Qualitative Market Research: An International Journal*, **7**(2), pp 126-38.

Cagliano, R. and Spina, G. (2002). A comparison of practice-performance models between small manufacturers and sub contractors. *International Journal of Operations & Production Management,* **22**(12), pp 1367-1388.

Chapman, R. and Al-Khawaldeh, K. (2002). Quality management worldwide: TQM and labour productivity in Jordanian industrial companies. *The TQM Magazine*, **14** (4), pp 248-62.

Cole, R.E. (2002*). Personnel and Human Resource Management.* (5th edn.). London: Biddles Ltd.

Cooper, R. D. and Schindler, P. S. (2003). Business Research Methods. (8th edn.) New Delhi: Tata McGraw-Hill Edition.

Cruickshank, M. T. (2000). Developing a Quality Culture within a School of Nursing in Higher Education. Unpublished doctoral dissertation, University of Western Sydney, Hawkesbury, Australia.

Dale, B. G., Boarden, R. J. and Lascelles, D. M. (1994).Total quality management: An overview in Dale, B.G.(Ed) *Managing Quality*. (2nd edn.). London: Prentice-Hall pp. 1-40.

Day, G. S. (1994). The capabilities of market driven organization. *Journal of Marketing*, **58**, pp 37-52.

Deming, W. E. (1986). Out of the Crisis. MA. Massachusetts Institute of Technology, Center for Advanced Engineering.

Douglas, T. J. and Judge, W. Q. Jr. (2001). The quality management implementation and competitive advantage: The role of structural control and exploration. *Academy of Management Journal*, **44**(1), pp 158-69.

Elimuti, D. and Kathawala, Y. (1999). Small services firms face implementing challenges. *Quality Progress*, **32**(4), pp 67.

Forker, L. B. (1997). Factors affecting supplier quality performance. *Journal of Operations Management,* **15**, pp 243-69.

Greenway, D. (1994). The diffusion of new technology. *The Economic Journal,* **104**, pp 916-17.

Gupta, P. (2004). Six Sigma Business Scorecard. New York: McGraw-Hill

Hendricks, K. B. and Singhal, V. R. (2001). The long–run stock price performance of firms with effective TQM programs. *Management Science,* **47**(3), pp 359-368.

Husband, S. and Mandal, P. (1999). Perceptions and realities of quality methods in Australian small to medium sized enterprises. Proceedings of the 12th Annual SEAANZ Conference, 6-8 May 1999 (pp143-157). Melbourne, Victoria, Australia: Victoria University of Technology.

Jarillo, J. C. and Stevenson, H. H. (1990). A paradigm of entrepreneurship: Entrepreneurial management. *Strategic Management Journal,* **11**, pp 17-27.

Juran, J. M. (1979). Quality Control Handbook. London: McGraw-Hill.

Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, **21**, pp 405-435.

Kittler, J. E., Menard, W. and Phillips, K.A. (2007). Weight concerns in individuals with body dysmorphic disorder. *Eating Behaviours*, **8**, pp 115–120.

Kothari, C. R. (2004). Research Methodology; Methods and Techniques. New Delhi: New Age International (P) Ltd. Publishers.

Krasachol, L. and Guh, E. (2001). Quality management in developing countries. Integrated Management: Proceedings of the 6th International Conference on ISO 9000 and TQM, 17-19 April 2001 (pp.299-304). Paisley, United Kingdom: University of Paisley.

Kuratko, D. F., Goodale, J. C. and Hornsby, J. S. (2001). Quality practice for a competitive advantage in smaller firms. *Journal of Small Business Management,* **39**(4), pp 293-311.

Magd, H. A. E. (2008). ISO 9001: 2000 in the Egyptian manufacturing sector: Perceptions and perspectives. *International Journal of Quality and Reliability Management,* **25**(2), pp 173-200.

Mandal, P. (2000). Interfunctional spread of quality in manufacturing. *Industrial Management & Data Systems*, **100**(3), pp 135-140.

McMahon, R. G. P. (2001). Deriving empirical development taxonomy for manufacturing SMEs using data from Australia's Business Longitudinal Survey. *Small Business Economics*, **17**(3), pp 197 – 212.

McTeer, M. M. and Dale, B. G. (1994). Are the ISO 9000 series of quality management systems standards of value to small companies? *European Journal of Purchasing and Supply Management*, **1**(4), pp 227-35.

Oakland, J. S. (1989). Total Quality Management. London: Elsevier Butterworth-Heinemann Publications.

Oakland, J. S. (2004). Quality Management. London: Elsevier Butterworth-Heinemann Publications.

Parsons, T. and Shils, E. A. (1962). Towards a General Theory of Action. New York: Harper and Row, pp 50-51.

Phillips, T. E. and Leedgerwood, J. R. (1994). Running with the pack: JIT and automation for small manufacturers. *National Public Account*, **39**, pp 26-28.

Pinto, J. C. (2008). TQM and performance in small enterprises: The mediating effect of customer orientation and innovation. *International Journal of Quality and Reliability Management,* **25**(3), pp 256-275.

Pulat, B. M. (1994). Total quality management: A framework for application in manufacturing. *The TQM Magazine.* **6**(4), pp 44-49.

Ramsey, J. (1998). The value of ISO 9000 certification to a small business. Proceedings: Second International and Fifth National Research Conference on Quality Management. Pakistan. pp 145-156.

Reed, R., Lemak, J. D., and Mero, P. N. (1999). Total quality management and competitive advantage. *Journal of Quality,* **5**, pp 5-26.

Rohitratana, K. and Boon-Itt, S. (2001). The implementation of ISO 9000 in Thai Seafood Processing Industry: An empirical study. Integrated Management: Proceedings of the 6th International Conference on ISO 9000 and TQM, 17-19 April 2001 (pp. 477-482). Paisley, United Kingdom: University of Paisley.

Ryan, C. C., Deane, R. and Ellington, N. P. (2001). Quality management training in small to midsized manufacturing firms. *Quality Management Journal,* **8**(2), pp 44-52.

Saunders, M., Lewis, P. and Thornhill, A. (2007). Research Methods for Business Students. (4th edn.). Harlow: Financial Times Prentice Hall.

Schroeder, D. M., Gopinath, C., & Congden, S.W. (1989). New technology and small manufacturer: Panecea or plague? *Journal of Small Business Management,* **27**(3), pp 1-10.

Schumpeter, J. (1961). Capitalism, Socialism and Democracy. New York: Harper and Bros.

Scott-Morton M. (1991). The Corporation of the 1990s: Information Technology and Organizational Transformation. Oxford University Press.

Slack, N. and Lewis, M. (2002). Operations Strategy. Harlow: Financial Times Prentice Hall.

Slater, S. F. and Narver, J. C. (1995). Market orientation and the learning organization. *Journal of Marketing*, **59**, pp 63-74.

Stoneman, P. and Diederen, P. (1994). Technology diffusion and public policy. The Economic journal, **104**, pp 918-930.

Summers, D. C. S. (2006). *Quality*. New Jersey: Pearson Education Inc.

Tatoglu, E. and Zaim, S. (2006). TQM and market orientation's on SMEs performance. *Industrial Management and Data Systems,* **106**(8), pp 1206-1228.

Temtime, T. Z. and Solomon, G. H. (2002). Total management and the planning behaviour of SMEs in developing economies. *The TQM Magazine,* **14**(3), pp 181-191.

Weinzimmer, L. (2000). Replication and extension of organizational growth determinants. *Journal of Business Research,* **48**(1), pp 35-41.

Wolff, J. and Pett, T. (2006). Small-firm performance: Modeling the role of product and process improvements. *Journal of Small Business Management*, **44**(2), pp 268-284.

Yong, J. and Wilkinson, A. (2002). The long and winding road: The evolution of quality management. *Total Quality Management,* **13**(1), pp 101-121.

Yusof, S. M. and Aspinwall, E. (1999). Critical success factors for total quality management implementation in small and medium enterprises. *Total Quality Management*, 10, S803-S809.

Zairi, M. (1993). Competitive manufacturing: combining total quality management with advanced technology. *Long Range Planning,* **26**(3), pp123-132.

Zhang Z. H., Waszink A. B. and Wijngaard, J. (2000). An instrument for measuring TQM Implementation for Chinese manufacturing companies. *International Journal of Quality and Reliability Management*, **17**(7), pp 730-