INFLUENCE OF CONTINUOUS IMPROVEMENT STRATEGY ON PERFORMANCE OF MICRO AND SMALL ENTERPRISES IN KISII SOAPSTONE INDUSTRY, KENYA

BY

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DECLARATION

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

 Date 10th Sep 2010

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This research project has been submitted for examination with my approval as university supervisor.

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DEDICATION

I wish to dedicate this project to my parents Patrick Kala and Phyllis Wela, for the foundation they laid in my education and for instilling values of hard work and honesty, my brothers and sisters for their moral support and encouragement. To my dear wife, Sarah Amimo and children Lorena Wela and Ronnel Kala, for their support and love which motivated me throughout the research.

ABSTRACT

Growth of Micro and Small Enterprises (MSEs) had been identified as a key strategy in Kenya's economy through creation of employment, development of new ideas and technology. However, existing studies shows a serious weakness in strategies employed in management of enterprises. This study therefore sought to establish the influence of continuous improvement strategy on performance of MSEs in Kisii Soapstone industry. Like other MSEs in the country, the Soapstone enterprise faced a number of constraints which limited performance and ability of MSEs to exploit their full potential. This raised the issue on how to enhance management capacity so as to achieve growth. Consequently, the study focused on three continuous improvement attributes. The first objective was to establish extent to which continuous improvement strategy in planning influenced performance of Kisii Soapstone MSEs. Secondly, the study explored extent to which continuous improvement strategy in production influenced performance of MSEs in Kisii Soapstone industry. Lastly, the study examined extent to which continuous improvement strategy in measurement and analysis cycles influenced performance of Kisii Soapstone MSEs. While there had been a number of studies on management of MSEs, there was little evidence on influence of continuous improvement strategy in addressing managerial constraints in the sector. The study finding may therefore form a basis for improvement of government policies on enterprise management, managers and owners of enterprises may also enhance capacities and quality of artifact through adoption of effective and efficient processing strategies. These continuous improvement strategies were articulated by the Deming's cycles and Kaizen management models. The main constraints to the study was that most enterprises had no records of income and expenditure; the informal nature of MSEs offered some challenges in establishing the number of enterprises and also records pertaining to performance of enterprises. The findings from review of literature also confirmed and reinforced the place of MSEs in economic development and importance of continuous improvement in production processes. A theoretical framework was developed based on the continuous improvement theories, where planning, production, measurement and analysis were independent variables of the study, on the other hand, performance of Kisii soapstone MSEs was the dependent variable of the study. To address the study objectives, a descriptive survey was carried out on 2192 people involved in the Soapstone industry at Tabaka Township in South Kisii District. Using stratified and quota sampling methods, a sample of 100 retailers, 20 wholesalers, 8 exporters and 30 employees were drawn from the population. Primary data was collected from managers, owners and employees of MSEs through questionnaire and in-depth interview schedule. Data collected was analysed using both descriptive and inferential statistical methods. A Chi-square (χ^2) was used to test the hypotheses. The findings of the study indicated that application of continuous improvement strategy in management of MSEs had significant influence on growth and general wellbeing of the sector. To spur performance, a number of Soapstone MSEs had adopted effective and efficient production strategies. However, most of them still faced challenges in technology application, marketing of artifacts and application of due diligence in financial management. The study therefore advocated for training of MSEs managers, and change of attitude towards management strategies and application of modern technology for growth of enterprises. The government should also take a proactive role by enacting policies which can spur growth in the micro and small enterprises. Lastly, the study contributed to the body of knowledge by linking the performance of MSEs to continuous improvement strategy.

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LIST OF ABBREVIATIONS

CBS: Central Bureau of Statistics

CDF: Constituency Development Funds

GDP: Gross Domestic Product

ISO: International Standards Organisation

MSE: Micro and Small Enterprises

NFIB: National Federation of Independent Business

QMS: Quality Management Systems

SBA: Small Business Administration

TQM: Total Quality Management

CHAPTER ONE

INTRODUCTION

1.1 Background to the Problem

Growth of small firms mainly referred to as Micro and Small Enterprises (MSEs) was of paramount importance in achieving high Gross Domestic Product (GDP) in many countries (Storey, 1983). The informal or *Jua kali* sector played a vital role in Kenya's economy by providing employment opportunities to over 70% of total number of employees and contributed 17% to the GDP (Rep., 2006, Atieno, 2009). Consequently, the government of Kenya developed policies like Sessional Paper Number 2 of 1996 on Small Enterprises and Jua kali Development, Sessional Paper Number 2 of 2005 on Development of MSEs for Employment and Wealth Creation and the Micro and Small Scale Bill of 2006; which provided a framework for recognition of MSEs and setting strategies for industrialisation, employment generation and poverty reduction (Rep., 1996; Rep., 2005; Rep., 2006).

Despite the critical importance of MSEs in Kenya's economic realm and its recognition at policy level, a number of factors had hampered the growth of the sector. Focusing on prevalent organisational structures and management practices, a number of management studies demonstrated the tendency of MSEs to adhere to out of mode and inefficient management models as compared to best practice strategies, tools and mechanisms adopted within the private sector (King, 1996; Atieno, 2009).

Continuous improvement is a management strategy that originated in industries in Japan in the 1950s and gained popularity in America and Europe in early 1980s (Mukherjee, 2008). The adaptation and integration of the above strategy was linked to success stories of Japan and East Asian economic 'Tigers' (Beaver, 2002, Ramis, 1991).

Continuous improvement is a principle in the management paradigm of Total Quality Management (TQM). According to Dean and Bowen (1994), TQM is characterised by three main principles, these are; customer focus, team work and the principle of continuous improvement which emphasises review of administrative and technical processes to find better ways of delivering goods and services.

The principle of continuous improvement explored in this study was based on Deming cycle, Kaizen model of management and the ISO 9001-2000 Quality Management System. Deming cycle referred to four repetitive steps for continuous improvement and learning: Plan, Do, Check, and Act (PDCA) (Have, et al, 2003). On the other hand, Kaizen is derived from a Japanese word "kai" change and "zen" good, meaning to become good. Kaizen consists of five founding elements of teamwork, improved morale, personal discipline, quality cycles and suggestions for improvement (Mukherjee, 2008).

Soapstone enterprises in Kisii South District are multi-million handcrafts manufacturing firms which employ thousands of people in processing and marketing of artifacts (Rep., 1994). The District Development Plan (DDP), Kisii District, indicated that MSEs based on Soapstone generated revenue of Ksh. 15.5 million in 1994 with 5,000 people depending on them for income (Rep, 1994). By 2010, Tabaka county council and Kisii South District Development Officer estimated the people involved in Soapstone enterprise at Tabaka to be 2,800. According to the Economic Survey, the sale of handcrafts generated national revenue of Ksh. 449 million, with more than one-half of sales accrued from export of Soapstone artifacts (DDO, South Kisii, Rep, 2002).

Implementation of TQM model of continuous improvement over past decades contributed to rising of productivity levels by at least 15% to 20%, in addition to elimination of resource wastages by 40% to 90% in organisations (Dent, Chandler and Barry, 2004). Proper use of the continuous improvement strategies in management of the

Soapstone sector was geared towards enhancing the quality of artifacts, production processes and marketing strategies. This study therefore sought to establish how continuous improvement strategy influenced performance of Soapstone MSEs.

Performance of MSEs was explored by changes in a number of variables; including changes in employment, volume of sold artifacts, income, and profits. A similar approach was used by Randiki (2000), in her study on capacity utilisation among small garment enterprises in Nairobi City market. However, many such enterprises faced challenges in measuring performance since firms did not keep financial records, while others were unwilling to share financial information. Establishing variables of income and revenue generated was therefore not easy in this study due to aforementioned constraints.

The focus of this study was therefore to establish the influence of continuous improvement strategy with a view to establishing whether its application in planning, production, and measurement and analysis had any influence on performance of Soapstone MSEs. Specifically, continuous improvement was explored in the following realms; first was in establishing the role of artifacts design development, budgeting strategies and budget control in performance of Soapstone MSEs. Secondly, the study focused on the role of continuous improvement in technology and production processes on performance of MSEs. Finally, the study sought to establish the role of auditing, record keeping strategies and correction of flaws in the whole system on performance of Soapstone MSEs.

Establishing proper continuous improvement strategies was therefore critical and appropriate in positive transformation of Soapstone enterprises. This led to reduction of waste and utilisation of appropriate technology in production processes and product quality. Lastly, effective and efficient production processes lowered costs and spurred growth in all aspect of enterprises, which was also the central concern of this study.

1.2 Statement of the Problem

The problem under investigation was influence of continuous improvement strategy on performance of MSEs in Kisii Soapstone industry. Storey (1983), pointed out that lack of managerial competence was prevalent among MSEs in developing countries; many entrepreneurs went into business without basic knowledge of business management or accounting. A number of scholars have attributed the above factors to lack of vertical growth and high rate at which MSEs fail (McCormick, et al., 1997). This study therefore focused on strategy geared towards provision of high-quality products through continuous improvement in design, production processes, and measurement and analysis cycles.

Various studies on MSEs management in Kenya had neither discussed continuous improvement, nor considered the role of the strategy on performance of enterprises. This neglect existed despite obvious successes of continuous improvement strategy in large organisations in many countries. The study was triggered by practical observations and various studies which indicated that Soapstone MSEs growth largely depended on adoption of good management practices as opposed to strategies which focused mainly on micro financing, and infrastructure development (Atieno, 2009; McCormick, 1996; Rep., 2005). This study was guided by changes in MSEs performance indicators like artifacts sales volume, profitability, and growth in employment. Performance therefore implied elimination of waste, strong emphasis on prevention rather than detection and emphasis on quality at development and design phase, which is at the heart of TQM principle of continuous improvement (Mukherjee, 2008).

1.3 Purpose of the Study

The study sought to establish the influence of continuous improvement strategy on performance of micro and small enterprises (MSEs) in Kisii Soapstone industry.

1.4 Objectives of the Study

The specific objectives of the study were to:-

i) Establish the extent to which continuous improvement strategy in planning influence performance of Kisii Soapstone micro and small enterprises.

ii) Explore the extent to which continuous improvement strategy in production process influence performance of Kisii Soapstone micro and small enterprises.

iii) Examine the extent to which continuous improvement strategy in measurement and analysis influence performance of Kisii Soapstone micro and small enterprises.

1.5 Research Question

i) To what extent does continuous improvement strategy in planning influence performance of Kisii Soapstone micro and small enterprises?

ii) To what extent does continuous improvement strategy in production process influence performance of Kisii Soapstone micro and small enterprises?

iii) To what extent does continuous improvement strategy in measurement and analysis influence performance of Kisii Soapstone micro and small enterprises?

1.6 Research Hypotheses

H01: There is no significant relationship between continuous improvement strategy in planning and performance of Kisii Soapstone micro and small enterprises.

H02: There is no significant relationship between continuous improvement strategy in production process and performance of Kisii Soapstone micro and small enterprises.

H03: There is no significant relationship between continuous improvement strategy in measurement and analysis and performance of Kisii Soapstone micro and small enterprises.

1.6 Significance of the Study

The study on influence of continuous improvement strategy on performance of Kisii Soapstone MSEs derived greater importance upon consideration of Kenya governments' strategy of investing in the sector as a catalyst for shifting from simple, low-value activities with poor growth prospect to high productivity, increasing returns and strong growth potential activities (McCormick et al., 1983). The study may therefore help the governments' policy makers to focus their attention on hitherto ignored area of management of MSEs at micro and macro level.

The study findings may also be a basis for adoption of best management strategies geared towards improvement of product quality, efficient, effective processes, marketing, and measurement and analysis methods. Local authorities and lending institutions may also benefit from the study by enacting reforms, better policies in management of the sector and allocation of resources. More so, the study endeavoured to fill a literature gap by an in-depth analysis of Kisii Soapstone MSEs management issues, thus facilitating further research and new literature on continuous improvement strategy.

1.7 Basic Assumptions of the Study

The study on influence of continuous improvement on performance of MSEs in Kisii Soapstone industry had the following assumptions: MSEs owners and managers employed the strategy in management of their enterprises. The second assumption was that this strategy had significant influence on performance of MSEs. Another assumption was that managers, owners and employees objectively responded to questionnaire items regarding their enterprises operations and financial status. It was also assumed that respondents had basic literacy levels and competently responded to the questionnaire and kept current records of income, expenditures and other organisational information.

1.8 Limitation of the Study

The main constraint on the study was the exact number of entrepreneurs and enterprises; available data only gave estimates of enterprises which also spanned several expansive villages. A number of enterprises were not registered; choosing a representative sample also offered some challenges. Data collected may have been biased due to poor record keeping strategies by MSEs and the respondents overstating their circumstances by giving responses of what ought to be rather than what was. The researcher therefore sourced data from multiple sources to mitigate the stated constraints, focusing mainly on licensed and registered MSEs in Tabaka County Council.

1.9 Delimitation of the Study

The study covered 150 registered Soapstone retailers, 30 wholesalers, 13 exporters and 2000 carvers in Tabaka Township, Kisii South district. From the above enterprises, the researcher collected data from managers, Soapstone owners and employees in the sector. Focusing on the management strategy of continuous improvement and working conditions within MSEs, the study hoped to establish their influence on processes and product quality. The study hence explored the influence of continuous improvement strategy with reference to Deming cycle, Kaizen management model and the ISO 9001-2000 Quality Management System and their contribution to effective and efficient enterprises.

1.10 Definition of Significant Terms used in the Study

For the purpose of the study, various terms were defined as follows:

Artifacts are small carvings produced by Kisii Soapstone enterprises.

Continuous improvement is a management strategies used to positively transform all aspects of the Soapstone MSEs production and marketing processes.

Influence is positive or negative changes occurring in performance of MSEs due to management strategy employed.

Kisii Soapstone Carvers are small scale entrepreneurs in Tabaka, Kisii South district, involved in the production and marketing of Soapstone artifacts.

Management are a set of activities directed at Soapstone MSEs resource with the aim of achieving organisational goals in an efficient and effective manner.

Micro and Small Enterprises (MSEs) are formal and informal small-scale businesses having between 1-49 employees.

Performance is growth and ability of MSEs to meet expectation of customers.

Strategy is application of continuous improvement principles in production systems.

1.11 Organisation of the Study

The study comprised five chapters: Chapter one was introduction, Chapter two contained literature related to nature of MSEs, and effects of continuous improvement strategy on performance on MSEs, and lastly, a conceptual framework was developed to guide the study thereafter. Chapter three had research design, target population, sample and sampling procedures, research instruments, reliability and validity of instruments, data collection procedures, data analysis procedures references and appendices. Chapter four comprises of data analysis, presentations, interpretations and discussions. Finally, chapter five had summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review focused on influence of continuous improvement strategy with reference to performance of organisations at global, regional and national levels. With reference to the study area, influence of best management practices in Kisii Soapstone MSEs was reviewed. The continuous improvement strategy was critiqued within the context of Deming model, Kaizen management strategies and ISO 9001-2000 Quality Management Systems model. The underlying theoretical framework chosen for the study was continuous improvement theory as articulated by Deming (1986). The purpose of literature review was to ensure that concept, theories and arguments that were adduced to develop the study were robust (Fisher, 2007). Consequently, important aspects on performance of MSEs like sales volume, turnover and growth in employee were explored. Finally, a conceptual framework was formulated to guide the study thereafter

2.1.1 Studies on Micro and Small Enterprises (MSE) Management Perspectives

MSEs are businesses whose head count or turnover falls below a certain limit. In European Union (EU), the concept entailed companies with fewer than 10 employees and an annual turnover of two million Euros as 'micro' and those with 10 to 99 as small (Beaver, 2002). In USA, small enterprises are companies with fewer than 100 employees (Storey, 1994). According to Hewitt (as cited in Beaver, 2002), MSEs accounted for 99% of all business numbers and contributed 40% to 50% of GDP in many countries. In a 1982 survey done in USA by the National Federation of Independent Business (NFIB), as cited in Storey (1983), problems of MSEs were rated as follows: Interest rate and financing 33%, taxes 21%, inadequate demand for products 13% and minimum wages laws was 9%

Lack of managerial skills was not identified as a major factor in the NFIB study. However, in developing countries, it was rated as a major contributor to failure of MSEs. According to USA Small Business Administration (SBA), some 25% failed within two years and 63% within 6 years. Similar rates of failure occurred in the United Kingdom, Japan and Hong Kong (Beaver, 2002). Adaptation of TQM principle of continuous improvement over past decades, contributed to raising of productivity levels by at least 15% to 20%, in addition to elimination of resource wastages by anywhere from 40% to 90% in organisations (Dent, Chandler and Barry, 2004). In EU, small and medium enterprises comprised 99% of all firms and employed between them 65 million people. The pivotal role of MSEs in the overall industrial economy of countries like India was articulated by studies done by Soho (2008), who estimated their output to be 33% of the total export and accounted for 39% of the manufacturing output. The importance of MSEs was therefore provision of jobs, creation of new technology and new products.

Singapore was rated as a highly developed country with 'over-full' employment; mostly in the small enterprises (Storey, 1983). Beaver (2002), had further identified small business as fundamental ingredients in establishment of modern progressive and vibrant economies. He contended that small firms helped to diversify a nation's economic base, create employment, transcend social inequalities, provide a healthy competition against the excesses of 'Big business' and monopoly power and exploitation. However, these potentials had not been fully exploited in developing countries.

In South Africa, the term SMME, for Small, Medium and Micro Enterprises was used for firms with 1 to 99 employees, while Ghanaian threshold was also between 1 to 99 employees (Kuada, 1994). Uganda had set the number at five people for micro and below 50 employees for small enterprises, and a turnover of less than Ush. 10 Millions (Mbaguta, 2002). Management problems affecting MSEs in the cited countries were lack of

appropriate management models, weak infrastructure, inappropriate technology and lack of skilled work force.

In Kenya, the threshold for MSEs encompassed businesses with 1 to 49 employees (Atieno 2009; McCormick et al., 2007). According to MSE Baseline Survey (2001), Kenya had 1.3 million MSEs in 1999 and approximately 2.5 million people depended on them for their income. Currently, 79% of all jobs created are in the informal sector, recording a marginal growth from 7.1 million to 7.9 million (Rep., 2005; Rep., 2009). According to various government reports, non agricultural MSEs contributed about 3% to the Kenya's GDP; however, this number is too low considering the number of people involved in small enterprise. The study hence explored the contribution of management strategy on performance of these MSEs and explored techniques used to make MSEs more effective and efficient.

Soapstone MSEs in Kisii South District are multi-million handcraft manufacturing enterprises, employing thousands of people in processing and marketing of Soapstone artifacts (Miller 1975; Rep., 1994). Report from the District Development Plan (DDP), Kisii District, indicated that Soapstone MSEs generated revenue of Ksh. 15.5 million in 1994 with 5,000 people depended on them for income (Rep, 1994c). The number of people depending on these MSEs had grown exponentially with the accrued revenue from sale of artifacts in Kenya estimated to be Ksh. 449 million annually (Rep, 2001). For the year 2009, Tabaka County Council and the District Development Officer (DDO) Kisii South, estimated revenue from Soapstone sector to be over Ksh. 200 million.

Despite the lucrative nature of the business sector, most of the entrepreneurs continue to earn an average of Ksh. 2,000 per month while middlemen and exporters kept the larger percentage of accrued profit (Miller, 1975; Tabaka Town Council). Various studies indicated that application of modern management strategies had positive bearing on

performance of enterprises in developing countries. The successes of MSEs performance were well articulated by various studies on small businesses in Nairobi and other parts of the country (Atieno, 2009; King, 1999; Randiki, 2000).

2.1.2 MSEs Management Strategies and Challenges.

Management strategies and challenges entail management issues affecting the relationship of an organisation to its environment (Littler & Wilson, 1995). Small firms in emerging economies were becoming more competitive and increasingly crucial for economic growth as demonstrated by a survey of 670 Asian organisations. Growth of small firms was based on management strategies employed and ability to react and innovate more quickly and have closer customer relations than their larger corporate competitors (Newberry, 2006). Some of the challenges and barriers to growth reported included inadequate access to financial resources and investment capital. However, in developing countries, lack of management skills and literacy levels were rated as the main reason for small business failures (Atieno, 2009; Storey, 1983)

Newly developed countries had overcome most of the problems cited in NFIB report. However, in developing countries, these problems were compounded by political instability and shortages of capital, leading to use of labour intensive production methods (Storey, 1983). High capital costs of creating employment, was also directly linked to poor infrastructure in developing countries (King, 1996; Hisrich et al., 2009). Beaver (2002), elucidated above factors by narrowing problems of enterprises to lack of strategic management skills and abilities; beginning with inability to articulate strategies to reach customers and ending with failure to develop adequate system of performance measurement and control. It is no wonder MSEs failure rates in Kenya were 60% to 80% within two years of operation (McCormick et al., 2007).

The above factors had imposed on Kenya government and other players the need to re-evaluate management strategies and roles of MSEs in national economic realm. Kisii Soapstone MSEs like other growing firms utilised some aspects of best management strategies like use of ICT in marketing of products, modern technology in production processes and measurement and analysis cycles (DDO, Kisii South District). The development of ideal management model was based on many factors; hence the need for MSEs adapting models to prevailing situation rather than vice versa. Accordingly, Someshwarananda (2008), argued that people should not be offered anything ready-made, instead it was essential to know them well and then decide what to offer. The suitability of continuous improvement strategy in addressing management problems of Soapstone MSEs was viewed from the perspective articulated by Ross (1994), who contended that TQM principle of continuous improvement was a comprehensive management strategy whose primary goals are customer satisfaction and a high degree of organisational flexibility as would ensure continued and timely responsiveness to external environments and demands.

Most studies on management had focused on large businesses were the process of management was principally predictive, concerned with articulation and clarification of long term objectives (Saylor, 1996; Mukherjee, 2008). In contrast, Beaver (2002), asserted that management in smaller firms was primarily an adaptive process concerned with adjusting limited amount of resources in order to gain maximum immediate short-term advantages. Accordingly, efforts were concentrated not on predicting but controlling operating environment; hence adapting as quickly as possible to changing demands of that environment and devising suitable tactics for mitigating consequences of any changes which occurred. The strategies collectively focused on improving product quality, ensuring employees were motivated and customer's needs were satisfied.

Literature on Soapstone MSEs management strategies was sparse. However,

studies on influence of continuous improvement in planning, production process, and measurement and analysis had demonstrated positive transformation of businesses (Dent, Chandler and Barry, 2004; McCormick et al., 1997; Saylor, 1996). A few MSEs had adopted modern technology like ICT in production as well as marketing of artifacts to international markets. However, some aspects of continuous improvement strategies like measurement and analysis were not well articulated or emphasised in management of enterprises.

Randiki (2000), identified various managerial policies which were commonly employed by small firms in capacity building; including maintaining extra inventory in form of finished goods or parts and components that could quickly be assembled into finished goods. However, modern management principles like TQM viewed the above strategy as a sign of inefficiency; accordingly, organisations were advised to plan for each step and requirements so as to keep up with market demands. The second policy of 'Build to the Forecast" was in sync with continuous improvement strategy as it ensured production capacity was pegged on anticipated demand (Hayes and Wheelwright, 1984). Continuous improvement strategy therefore ensured the whole system worked harmoniously by constantly checking performance against established standards and making necessary corrections and adjustments.

2.2 Review of Relevant Studies Related to Continuous Improvement Theory and Management Models.

The main study theory was derived from TQM paradigm of continuous improvement, whose main proponent was Edward Deming, an American statistician. The continuous improvement model had its roots in Japan following World War II, this strategy was the driving force behind the resurgence of the Japanese economy during this

time (Cane, 1996). TQM references a number of interrelated principles; these are conformance to determined specification, adherence to the requirements established by the outlined quality standards, fitness for use, and avoidance of loss and minimization of operation waste, the satisfaction of consumer demands and more ideally the exceeding of consumer or customer expectation (Tricker, 2001).

According to Juran (1992), TQM had evolved into a comprehensive management system which apart from embracing variant management approaches, programmes and multitudinous strategic tools, had selectively borrowed from paradigms of governing in industrial engineering and organisational development. At the core of TQM model there are three principles of quality management: customer satisfaction, continuous improvement and teamwork (Blackburn and Rosen, 1996; Dean and Bowen 1994)). MSEs had adopted the above principles while borrowing from models like Kaizen and ISO 9001-2000 Quality Management System (QMS), to align their operations and to meet stringent market and customer requirements. Continuous improvement strategies emphasised constant review of administrative and technical processes to find better ways of delivering goods and services. Cardy and Dobbins (1996), pointed out that in TQM, workers were trained in use of statistical techniques to determine if a process was "in control", in effect, workers themselves had means and responsibility for determining if processes were stable.

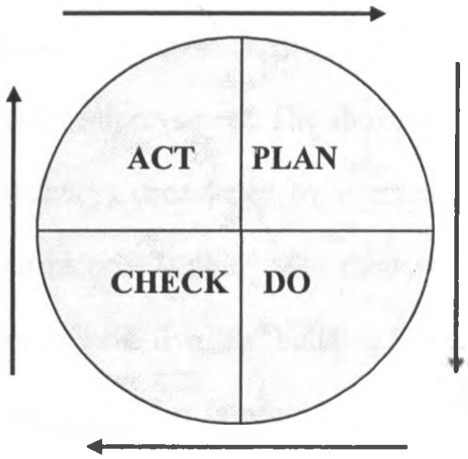
2.2.1 Deming cycle

Have et al., (2003, p. 67), define Deming cycle, also known as PDSA cycle as; "logical sequence of four repetitive steps for continuous improvement and learning: Plan, Do, Check (also known as study) and Act". The concept had further been elucidated as follows: Planning entailed measures put in place to facilitate improvement of an activity in an organisation. Do refer to execution of activity according to plan; this entailed

measurement and study of results and improvement. Action should be taken towards adapting objectives and improvement, followed by implementation of new activity (Deming, 1986).

Deming cycle allowed organisations to manage improvement initiatives in a disciplined fashion. In relation to Soapstone MSEs, some of the continuous improvement constructs were employed in meeting customer needs through improved design, production techniques and embracing modern marketing techniques.

Figure 2.1 The Deming Cycle



Adapted from: Deming (1986)

The application of these principles in Kisii Soapstone MSEs was viewed within the context of budgeting; this was in material acquisition and preparing for expansion. Planning was also explored in improvement of artifact designs to meet customer requirements and market demands. Carving methods were also reviewed with regard to modern machines which increased production capacity while improving the quality of artifacts. The use of technology in marketing was also another key Deming cycle process, correction of flaws, auditing and record keeping strategies were used to ensure early detection of errors and in some cases prevention of these errors from occurring.

2.2.2 Kaizen model

According to Have (2003), Kaizen literally means change (*Kai*) to become good (*Zen*). Other key elements of Kaizen were identified as: quality, efforts, willingness to change and communication. Kaizen had its origins in Training Within Industry (TWI) organisation, a component of the United States War Manpower Commission, in World War II. TWI was established to maximise industry productivity from 1940 through 1945; the improvement was basically for war products and as a tool to rebuild Japan's industry (Imai, 1986). However, Toyota and Matsushita Electric Corporation domesticated these methods with enormous success in their organisations.

Kaizen focused on teamwork, personal discipline, improved morale, quality cycles and suggestions for improvement. The above factors are attributed to elimination of "muda" (waste, inefficiency) occasioned by overproduction, excess inventory, rejected products and transportation. Within the framework of good housekeeping and standardization, Kaizen uses the five "Ss" building blocks (Have, et al, 2003 p.106)

Seri- Tidiness. Separate what is necessary for the work from what is not. This should help to simplify work.

Seiton- Orderliness. You can increase efficiency by making deliberate decisions with regard to the allocation of materials, equipment etc.

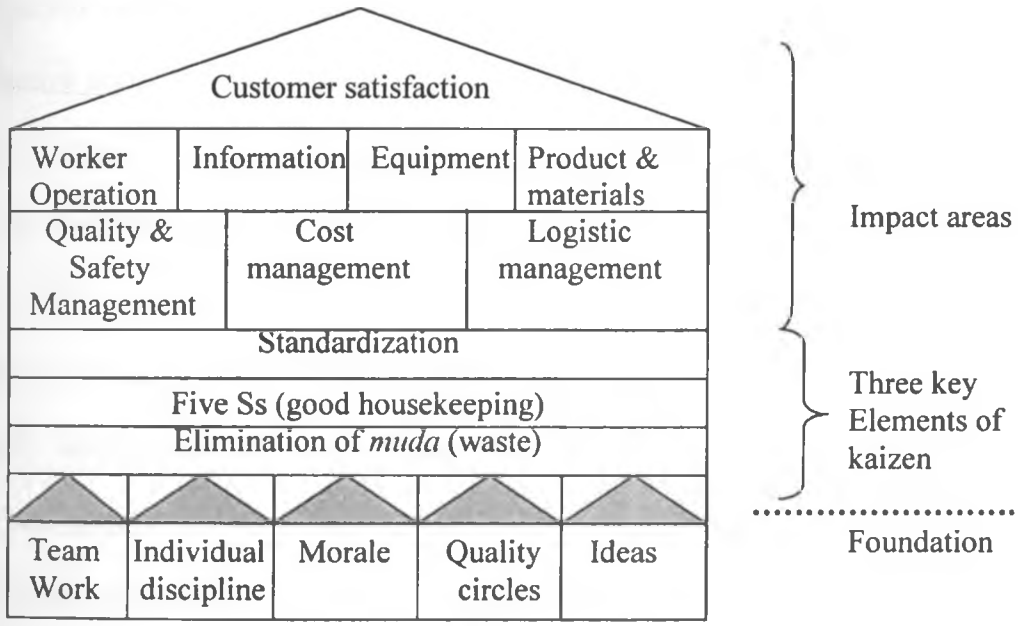
Seiso- Cleanliness. Everyone should help to keep things clean, organized, looking neat and attractive.

Seiketsu- Standardised clean-up- the regularity and institutionalisation of keeping things clean and organised as part of visual management is an effective means of continuous improvement.

Shitsuke- Discipline. Personal responsibility for living up to the other four Ss' can make or break the success of house keeping

The continuous improvement strategies in Kaizen model resonated well with the Soapstone MSEs management strategies due to their simplicity and universal applicability. The study therefore established the application of some of the stated Kaizen principles and how they influenced performance of Soapstone MSEs. The continuous improvement concepts were incorporated in the conceptual framework which focused on the main objectives of the study. The above concepts were summarized in a model which showed the influence of continuous improvement principles in relation to quality of products, effective and efficient production systems and ultimately customer needs satisfaction.

Figure 2.2 Kaizen Management model



Adapted from: Have et al, (2003 p.106)

The study borrowed from Kaizen principles of cost management, quality, worker operations and how the interaction of these attributes led to quality products and customer satisfaction. The model was also used to develop a conceptual framework and formation of constructs used in establishing influence of continuous improvement strategies on

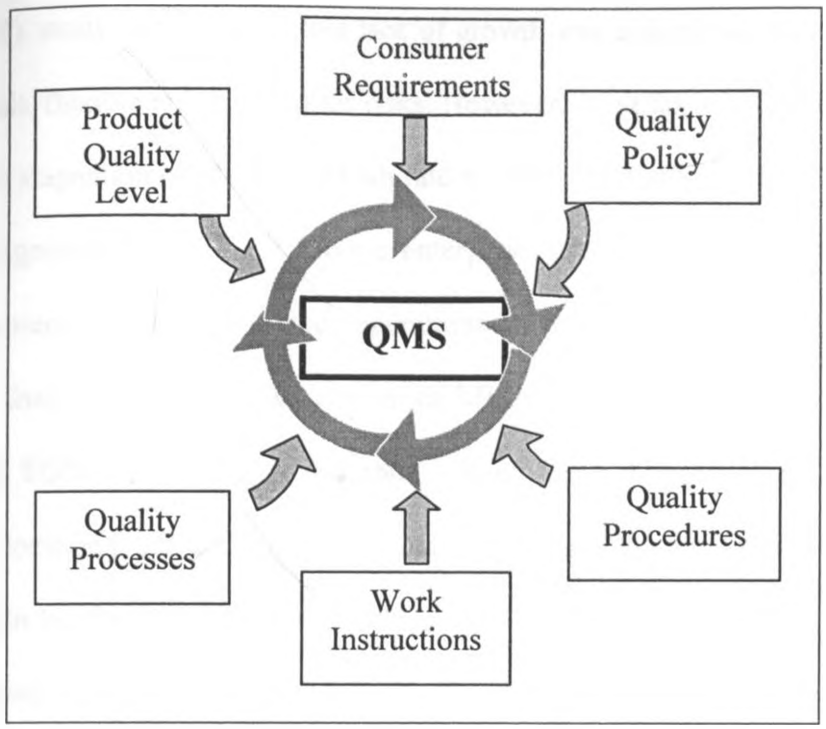
performance of Kisii Soapstone MSEs. The contribution of quality circles, elimination of waste, and cost management among others were analysed focusing on their influence on performance of Kisii Soapstone industry. Literature on management of soapstone MSEs demonstrated Kaizen by constantly improvement of designs of artifacts, marketing methods and entrepreneur relation to customers.

2.2.3 Quality Management Systems Model

According to Tricker (2001), the basis of ISO certification was to set up proper management system in order to control and monitor all stages of production processes and provide proof to potential customer that a product had guaranteed and in some cases certified–quality required by the customer. To meet customer's requirement for quality, QMS, operates under the model show below, Figure 2.3, which also resonated well with the TQM paradigm of continuous improvement.

Tricker (2001), identified four major generic business processes, articulated in the ISO 9001-2000 requirements. These were: management responsibility, resource management, product services realisation, measurement and analysis and improvement. Accordingly, management responsibility focused on commitment, review, customer focus, planning, and quality policies. Requirement for continuous improvement emphasised in ISO 9001-2000 was critical in establishing influence of strategy on performance of MSEs. The QMS model was also adopted in developing the conceptual framework since constructs in the model were in line with the strategy of continuous improvement, product quality and customer need satisfaction. In relation to Soapstone MSEs, the emphasis was on quality of artifacts, efficiency and effectiveness of production and marketing methods, which ultimately lead to increased sales, turnover and satisfaction of customer needs.

Figure 2.3 Quality Management System Model (QMS)



Adapted from: ISO 9001:2000 for Small Business by Tricker, R. (2001:5)

2.3 Continuous Improvement Strategy in Planning and Performance of MSEs.

Planning entailed benchmarking in all areas against the best and drawing a quality plan for all functions including operations, marketing, materials, human resource, technology and finance (Mukherjee, 2008). In a study on capacity utilisation in garment MSEs in Nairobi, Randiki (2000), demonstrated that poor planning was the main constraint to growth of the sector. Similar trends were observed in Kisii Soapstone MSEs, where enterprises produced more artifacts than the market could absorb, this was attributed to copying of popular designs rather than creating original works. To attain optimal production and marketing processes, it was imperative for MSEs to comprehensively plan on all aspects of production and marketing. In highly competitive business environment, planning created an advantage by identifying weaknesses, strengths and opportunities.

Due to the risky nature of MSEs, it is no wonder most enterprises preferred to

work on short term policies without clear expansion or capacity building strategies. Randiki (2000), study demonstrated that lack of growth was a deliberate strategy by MSEs to remain small, flexible and thus reduce risks. However, these approaches to management were linked to stagnation of MSEs and high rate at which MSEs failed (McCormick, et al.; 1996). Management styles in the above enterprises were shown to be intuitive than analytical, concerned with day-day operations than long term issues and more opportunistic than strategic. In management of MSEs, strategic planning was an integral component of TQM philosophy, it was thus defined as "a disciplined effort to produce fundamental decisions and actions shaping the nature and direction of an organisation's activities within legal bounds" (Bryson, 1988, p.26).

Soapstone firms like other MSEs in Kenya had not fully exploited the benefits that accrue from having a business plan. This led to the approach of trial and error and short time strategies in management of enterprise. Research by a number of scholars in Kenya validated the above observation; in that growth and performance of enterprises was hampered by lack of development strategies and long term goals. McCormick's (1996) study on risks and growth in small businesses cited poor management strategies as one of the factors leading to high mortality rate in MSEs in Kenya.

This study therefore explored influences of continuous improvement with regard to development or designing of artifacts, budgeting and cost management strategies in small scale enterprise. The above variables were presumed to have significant influence of performance of Soapstone MSEs in terms of growth in employment, turn over and artifact sales volume. Planning therefore spurred effective and efficient production and marketing processes which was at the heart of TQM principle of continuous improvement.

2.3.1 Implication of Design Development Strategy on Performance of MSEs

Planning focused on strategies geared towards enhancing performance of MSEs; this entailed continuous improvement of artifact design as a key strategy in acquisition of market niche and also satisfying customer's needs. In Kisii Soapstone MSEs, artifact designing was utilised in development of new designs and in improving the quality in an efficient and effective way. The evolvement of quality policies into quality procedure, quality processes, quality products and ultimately satisfaction of consumer requirement was well articulated in the QMS model on Figure 2.3.

Specialisation in given designs led to increase in rate of output due to experiences gained. Randiki (2000), demonstrated the importance of learning as a determinant of capacity building and production efficiency in MSEs. However, other risks occasioned by specialisation in MSEs were identified as severe competition and lack of entry barrier; designs were 'communally' owned, leading to high mortality rate of poorly managed enterprises. Product patenting, continuous improvement and innovation were utilised as strategies to ward off competition thus ensuring growth and survival of enterprises.

At the core of this study was concern about use of technology in product development, and production processes which also impacted on performance of enterprises. Atieno (2009), had attributed poor technology adaptation and transfer among MSEs to slow growth in enterprises, she advocated for MSEs to form linkages to help firms acquire technology and achieve goals that they would otherwise not be able to achieve on their own. Due to the high cost of technology transfer, forming linkages positively transformed some Soapstone sector; the linkages enabled sharing of resources and skills. The technology used by entrepreneurs in the Soapstone sector included; electric drilling and cutting machines, ICT in marketing and designing of artifacts (Tabaka Soapstone Cooperative).

2.3.2 Implication of Budgeting Strategy on Performance of Soapstone MSEs

Small enterprises exploited continuous improvement as a tool to satisfy their primary objective of value management and quality output within an efficient and effective organisational resource usage context. This entailed working within a given timeframe, set budget and pre-determined quality of artifacts. Budgeting as a continuous improvement tool, was based on application of objective data, and provided a rational rather than emotional basis for decision making. However, acquisition of capital and budgeting was a major challenge in many enterprises in developing countries. This was due to poor accounting and managerial skills by entrepreneurs. According to Atieno (2009), small firms in Kenya's manufacturing sector had problems in raising capital due to lack of support from the financial sector which preferred supporting the formal sectors and large organisations.

Budgeting in Kaizen culture entailed developing a master budget to improve coordination and communication between all departments or other sub units within an organisation. This approach explicitly incorporated continuous improvement in utilisation of time and other enterprise resources to reduce production overhead cost (Imai, 1986). Some Soapstone MSEs had greatly benefited from the adoption of these practices in managing enterprises by budgeting for production materials, required product quantities and utilisation of time effectively. This aspect of matching production capacity to the anticipated demand reduced the chances of enterprises having excess inventory in terms of products and human resource. Hayes and Wheelwright (1984), advocated for building organisational strategies based on anticipated future events or conditions. This strategy had been effectively applied in small scale garment enterprises as demonstrated by Randiki (2000), were small scale traders utilised enterprise capacities to stay ahead of market demands.

2.3.3 Implication of Cost Management on Performance of Soapstone MSEs

This study considered cost management as a key continuous improvement strategy which had significant influence on performance of small firms. Cost management was hence reviewed with regard to acquisition of working capital, managing wages, reduction in production and marketing cost. Atieno (2009), had attributed the vertical linkages between producers and suppliers as an avenue for access to new capital. Use of credit reduced the working capital requirements in MSEs, firms therefore formed linkages to reduce marketing cost, increase firm flexibility and reduce uncertainty faced by MSEs (McCormick and Atieno 2002).

Randiki (2000), demonstrated the importance of cost management as lowering cost, which led to reduction in product prices, reduction in prices influenced demand for products instead of waiting for demand to pick up and react to it. Other factors influencing operating cost included cost of materials, selling products in bulk and opening up of new markets. In garment enterprises in Nairobi, Randiki (2000), cited new market as the highest contributor to growth in MSEs as opposed to credit or cost cutting methods. Another aspect of cost management was capacity utilisation by improving technology use as a strategy to increase production.

However, critics of cost cutting in continuous improvement strategy cited unfair labour practices enforced to attain top quality products. Imai (1986), cited injuries and death in Japanese industries, caused by overworking and compromise of safety through aggressive cost cutting measures. Another down side was that employees were rarely consulted in the implementation of cost management hence causing resistance. With regard to the Soapstone enterprises, the study sought to establish strategies employed in reducing artifact production cost, marketing and other overheads and how they influenced performance of enterprises.

2.4 Implication of Production Strategy on Performance of Soapstone MSEs

The adoption of Deming's P-D-C-A cycle and implementation of Kaizen culture of small improvement in day-to-day working in manufacturing, waste elimination, house keeping, product features and customer satisfaction led to an environment of continuous improvement (Mukherjee, P.N., 2008). Randiki's (2000), concept of capacity management referenced the rate of output that can be achieved in processes, resonated well with MSEs which applied the Deming's continuous improvement principles. The Soapstone MSEs had achieved some growth through utilisation of continuous improvement in production and marketing of artifacts. The use of ICT in marketing of artifacts to international customers is another strategy which seemed to have paid dividends in enterprises exporting artifacts.

Building capacity in production processes according to Hayes and Wheelwright (1984), entailed optimal utilisation of resources and skills, adoption of technology and flexibility to react to environment or market requirements. By using the internet, entrepreneurs were able to sell their artifacts directly to customers thus cutting off middlemen who were raking in profits of 200% to 500% on sales (Miller, 1975; Tabaka Carvers Cooperative Society). Other strategies employed in production process included use of hand held machines in cutting and carving process; this drastically reduced time spent in producing an item and quality of artifacts was also greatly enhanced due to precision of machines. However, according to the manager Kisii Soapstone Carvers Cooperative, the main constraint to adoption of modern management methods was lack of capital, knowledge and skills.

Literature on MSEs in garment industry in Nairobi demonstrated the strategy of continuous improvement in production methods as a key factor in capacity building. Randiki (2000), in her study, found out that optimal utilisation of MSEs capacities led to elimination of waste and increase in sales volume. Ability to stay ahead of demand was

found to be of critical importance in the growth of MSEs. Soapstone MSEs performance was also pegged on their ability to innovate, apply technology, use of internet in marketing and adoption of modern machines in carving.

According to Imai (1986), the essence of machine use in production was attaining a target quality of zero defects. Toyota industries perfected this particular continuous improvement principle by application of Kaizen principle of evolution rather than revolution. This entailed continually making small, 1% improvement to 100 things, which was more effective, less disruptive and more sustainable than improving one thing 100% when the need becomes unavoidable. These lessons from Toyota have been adapted in small firms as demonstrated by Randiki (2000), study on garment enterprises in Nairobi. In these enterprises, capacity was enhanced by improvement in production processes, particularly on machine use, labour management and strategies in marketing of products.

However, application of production strategies on small firms had been shown to impact negatively on the general objective of investing in the sector. The main problem cited was on implication of replacing human labour with machines and modern technology and the long term impact of increasing production capacity without corresponding expansion in the market. With reference to the Soapstone sector, there is little evidence on appropriate programmes to sustain continuous improvement in production processes. McCormick, et al.; (1997), had also cited lack of policies as a negative attribute in sustainable growth of MSEs in Kenya.

This study therefore explored implication of production strategy with reference to TQM paradigm of continuous improvement and its influence on performance of Soapstone MSEs. The researcher endeavoured to argue and use empirical data to show that continuous improvement strategies had significant bearing on performance of Soapstone MSEs.

2.4.1 Implication of Production Technology on Performance of Soapstone MSEs

Modern machines and technology had been cited by a number of scholars as a major factor influencing growth among the enterprises in developing countries. Randiki (2000), demonstrated the importance of adoption of technology in growth of the garment sector in Nairobi; accordingly, enterprises with more specialized machines experienced higher growth rates.

As a continuous improvement strategy, technology was utilised to meet increasing market demands, improve quality of products and reduce production cost. However, according to studies by a number of scholars, the main constraint to adoption of technology in production was the cost involved in acquisition and maintenance of machines. Studies had shown that level of kills in technology application were also a constraint in MSEs in developing countries. Harnannesh (1993), claimed that rather than physical capital, the main constraint to technology use was lack of appropriate skills. However, despite the importance of technology in production, there was a general apathy by entrepreneurs in developing countries to acquire these skills.

Production technology had also been found to have negative influence on both the enterprise and the employees; the main downside to application of technology in the continuous improvement strategy was over production. Randiki (2000), agued that it was uneconomical for small firms to carry excess capacity or inventory in form of processed goods; over production of goods inadvertently leads to lower prices and poor quality thus affecting the growth of enterprises. The Kaizen culture encourages firms to continuously scan the environment to know the general market trends and also to determine demands for the firms' products. In the Soapstone enterprises, production was reviewed with regard to technology used in developing artifacts, processing and marketing of artifacts, and its influence on performance of sector.

2.4.2 Implication of Production Process Strategy on Performance of MSEs

At the heart of Kaizen was the principle of continuous improvement which advocated for gradual evolution rather than radical changes in organisations. The key concept was to continuously make small sustainable improvement in product development systems, production and marketing strategies (Imai, 1986). With reference to MSEs, Randiki (2000), cited the main factors contributing to performance of enterprises as; new technology, new market, new products, and quality of product, experience of owner and manager, and demand for products.

MSEs processing strategies were also found to revolve around the traditional set of factors of production; that included capital, labour and raw materials. Other attributes which affected the product processing were levels of skills, gender of entrepreneurs, educational achievement, ownership structures and government policies. While it is possible to control some of afore mentioned attributes, there are many external factors influencing the performance of enterprises. To mitigate the influence of factors affecting production, Atieno (2009), advocated for linkages between MSEs to form stronger bargaining powers and also influence market trends and necessary government policies.

Adoption of processing strategy was also influenced by ownership structure, large wholesalers and large scale producers required large space for production, storage and packaging (McCormick, 1993). This forced enterprises to align their processing strategy to meet the demands of the prevailing structure. The study therefore sought to review the artifact processing strategies and their influence on performance of MSEs. Continuous improvement in designing strategies, carving and marketing was hypothesised to significantly influence the performance of enterprises. Various studies in MSEs management validated the above claim due to introduction of internet technology in marketing and use of machines to make processes more effective and efficient.

2.4.3 Implication of Production Equipments on Performance of Soapstone MSEs

The continuous improvement aspects of equipment in production processes in this study, borrowed from Randiki (2000), study on capacity management. The focus in equipment strategy was on optimal use of existing facilities, and also decisions about expansion, replacement or use of alternative technologies in production. The primary objective of optimal utilisation of available equipment was therefore to increase output while reducing operating cost.

With regard to Soapstone MSEs, studies showed application of rudimentary equipment in processing of artifacts as a major constraint in performance of enterprises. However, a few enterprises, particularly those dealing in export had optimised their capacity through modernising their equipments. In the garment industry in Nairobi, Randiki (2000), attributed poor returns to low levels of capacity utilisation, she contended that optimal use of equipment increased productivity level and reduced labour leading to effective and efficient production system. Enterprises had to continuously upgrade their equipment or even purchase new equipments to keep up with changing market trends and customer demands. However, the performance of most MSEs was constrained by attitude of employees towards the equipment which were viewed as a threat to their jobs.

The importance of equipments in Kaizen was articulated by various studies, which placed equipment second to human resources development in the production processes. The study therefore sought to review the influence of equipment utilisation on performance of Soapstone production process; the focus was on the type of equipment used, the level of skills and the influence on volume of artifacts produced. The study hypothesised that optimal use of equipment in production strategy had significance influence on performance of MSEs.

2.5 Implication of Measurement and Analysis Strategy on Performance of MSEs.

Measurement and analysis also referred to as quality control, periodically measured performance and identified deviations in quality of product and processes. Quality control according to Mukherjee (2008, p.142), "focuses more on the control of processes and produces periodic appraisal report on adherence or deviation to the quality plan at predetermined interval and locations controlling the critical successes factors". With reference to Soapstone MSEs, the main constraint to application of measurement and analysis strategy was lack of record keeping and financial management skills. Atieno (2009), contends that less than one-half of MSEs entrepreneurs were primary school graduates, hence majority lacked prerequisite financial management skills.

Literature on MSEs indicated that a number of entrepreneurs had developed systems of measurement and analysis which inadvertently transformed their businesses in terms of employee growth and sales volume. However, most enterprises still operated without clear quality control and record keeping strategies. Poor auditing strategies were cited for production wastages and time wasting in correcting errors which could have been prevented in the first place (Cane, 1996).

Randiki (2000), concurred with these findings; she further recommended elimination of capacities which had no direct bearing on waste reduction or customer satisfaction. These negative attributes could only be identified by proper audit and keeping of records on all aspects of enterprises. However, studies indicated that MSEs rarely used this management strategy thus making it impossible for lending institutions to give enterprises loans; proper records of income and expenditure are prerequisite for acquisition of loans (CBS, et.al 1999). Correction of flaws in product and production process was therefore a key component of continuous improvement, through feedback from customers, internal audit and benchmarking, firms were able to ensure their systems were in control.

2.5.1 Implication of Auditing Strategy on Performance of Soapstone MSEs

Auditing is the quantitative analysis of organisations financial and non financial indicators to allow for accurate information on its progress towards attainment of objectives (Bendel, et al.; 1999). The process ensured an organisation translated its vision to measurable outcome, improved overall health and success through measures of quality cost, speed, employee alignment and motivation (Amaratunga et al.; 2001).

McCormick (1997), identified inadequate management skill as the main factor contributing to non performance of enterprises in developing countries. Auditing ensured enterprises achieved their defined goals and objectives while simultaneously assessing whether or not the organisation was successfully implementing growth strategies (Amaratunga et al.; 2001). With reference to the Soapstone sector, the strategy was rarely applied in management of sector, due to entrepreneur's lack of auditing skills and poor attitude towards auditing strategies.

According to continuous improvement scholars, the advantage of creating an effective and efficient performance measurement system included, translating a business into measurable outcome that defined its success. These attributes included measure of quality, speed, customer service alignment motivation and skills. The success of the Soapstone MSEs like other enterprises depended on auditing and other measurement and analysis cycles employed. The essence of auditing was therefore to enable findings from one section of enterprise to improve the subsequent section and shed light on the whole organisation. Kaizen principle had improved this aspect of continuous improvement by introducing a concept known as kaizen blitz or break through events; which was a focused activity geared towards elimination of waste in a very short time (Cane, 1996). This study explored some of these auditing strategies, focusing on their influence on performance of the soapstone enterprise.

2.5.2 Implication of Record Keeping on Performance of Soapstone MSEs

Record keeping as a basis for continuous improvement of enterprise operations was achieved through alignment of all firms' activities such as product development and customer relation management. This implied that measurement and monitoring of cycles time and responsiveness were used as a basis for opportunities to improve quality of product. However, McCormick (1997), identified lack of training and low literacy levels as the genesis of poor record keeping strategies by MSEs in developing countries. The informal nature of most enterprises also made record keeping an option.

For enterprises which utilised record keeping as a tool in decision making, studies showed remarkable growth in these enterprises. Randiki (2000), demonstrated how good record keeping practice was utilised by garment MSEs to analyse information in and outside the enterprises. Record keeping was also used to monitor enterprise growth, profit or loss and production capacity. By comparing the performance of MSEs over a number of years, it was possible for entrepreneurs to map the growth of their enterprises and in some cases make appropriate decisions to influence this growth.

From record of enterprise performance, Kaizen process expected every employee to participate in analysing processes, provide feedback and suggest improvements. Adverse effects of poor record keeping strategy in the Soapstone sector was reduced by facilitation of managers in adoption of appropriate continuous improvement skills. According to Kisii Carvers Cooperative Society, many enterprises kept records of current expenditures and transactions; these records were normally discarded on completion of transaction. The study had hypothesised that record keeping strategies had significant influence on performance of MSEs, to attain effective and efficient production processes, entrepreneurs must therefore trained in managing and application of record keeping as a continuous improvement tools.

2.5.3 Implication of Correction Strategies on Performance of Soapstone MSEs

With regard to Kaizen, elimination of waste was a major component of the continuous improvement strategy. According to studies by Imai (1999), successful businesses had been able to reduce or even eliminate waste by emphasising on prevention rather than detection, and on quality at the design stage. Customer driven approaches also helped to prevent errors and achieved defect free product and production processes.

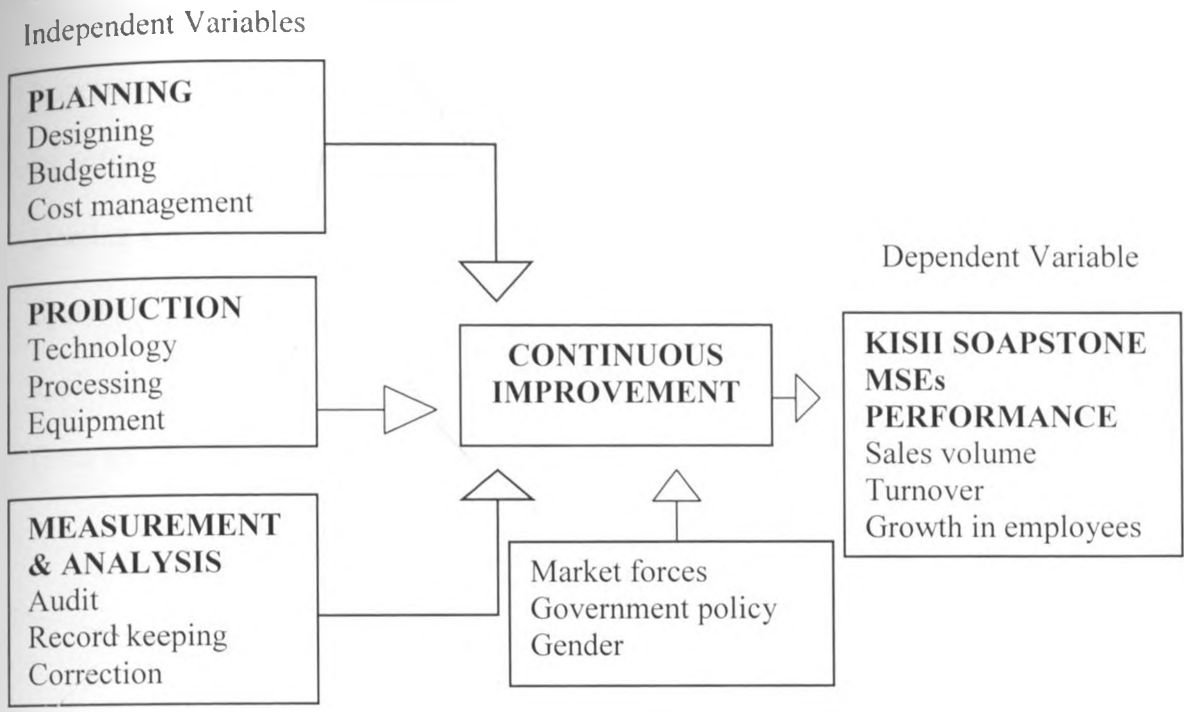
The approach of correction was utilised in a number of MSEs to arrest problems in production and marketing. The tools enabled organisation to detect problems at the development stage and resolve them before they got to subsequent internal customer or even the external customers. Imai (1986), supports this culture of continuously aligning small improvements and standardisation to yield results in form of compound productivity improvement; this approach was successful utilised at Toyota to spur efficiency and quality products. Workers in a continuous improvement environment are organised in teams and are facilitated in analysis of processes and brainstormed on improvements. However, these approaches were discouraged in the Deming model with emphasised on elimination of inspection on a mass basis by building quality into the products in the first place.

In MSEs sector, correction focused on analysis of strategies which were used to rectify flaws both in products and in systems. Studies had shown that by constantly improving planning, products development processes and services, the quality of the product is inadvertently improved; improved product quality leads to decrease in costs. In the Soapstone enterprises, studies show little application of this strategy in continuous improvement of artifacts or even the production process. The study therefore sought to establish the implication of neglect in application of correction strategies on the general performance of Soapstone MSEs.

2.6 Conceptual Framework

The conceptual framework highlights relationship between variables in the study

Figure 2.4 Conceptual Framework



The variable of planning comprised of products design or development strategies, budgeting and cost management. Positive changes in these attributes were hypothesised to lead to corresponding growth in Kisii Soapstone MSEs. The second independent variable of production focused on production processes, the technology employed by enterprises in production, and marketing strategies and how the continuous improvement in these attributes influenced performance of MSEs in terms of sales volumes, profits and employee growth. The third variable of measurement and analysis entailed audit, record keeping and correction strategies in all areas of the enterprise, and how they relate to performance of MSEs. The study also examined extraneous variables which also influenced management of enterprises; these were market conditions, government trade policies, and gender of owners and managers of enterprises.

2.7 Summary

Through review of selected literature, it was evident that MSEs were an important attribute of economic development and employment creation in developing countries. The importance of continuous improvement strategy had also been reviewed with reference to its influence on performance of MSEs. The strategy was reviewed with regard to the Deming cycle, Kaizen management model and the ISO 9001-2000 Quality Management System. This chapter had also effectively addressed a number of research gaps on application of continuous improvement management strategies on performance of small firms and, in so doing had validated the proposed research objectives.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sought to provide an overview of methodological approaches and research design selected for a study on influence of continuous improvement strategy on performance of Kisii Soapstone MSEs. A detailed description of the research design was provided; these included: target population, sample size and sampling procedures, variables of the study, instrumentation, procedures for data collection and procedures for data analysis.

3.2 Research Design

This was a descriptive study of current situation on influence of continuous improvement strategy on performance of Kisii Soapstone MSEs. Descriptive research is a process of collecting data in order to obtain precise information concerning current status of subject in the study, descriptive study determined and reported the way things were (Mugenda and Mugenda, 2003). The descriptive method was preferred because there was need to describe Soapstone MSEs with regard to strategies employed to ascertain continuous improvement in planning, production processes, and measurement and analysis strategies. The indicators for performance were; artifact sales volume, turn over or profits, growth in number of employees among others. Descriptive data was collected using questionnaire and interview schedule method. The above design was preferred since it enabled the researcher to interact with the entrepreneurs and thus get deeper insight into the management strategies employed and the feelings of entrepreneurs toward strategies.

3.3 Target Population

Population according to Tuckman (1972), is the total target group who would, in the ideal world, be the subject a researcher is interested in gaining information from and drawing conclusions. Target population for the study were owners, managers of registered MSEs and employees who were directly involved in production and marketing of Soapstone artifacts at Tabaka Township in Kisii South District. Population for the study entailed approximately 2000 carvers who were affiliated to various retailers and wholesalers in Tabaka Township through cooperatives and self help groups, these included 150 registered retailers, 30 wholesalers and 12 exporters of artifacts.

3.4 Sample and Sampling Procedures

From the target population, the study used stratified random sampling to choose sample sizes. The formula for choosing sample size was based on the assumption that if there was no estimate available of the proportion in the target population, 50% should be used, with a z-statistic of 1.96 and an accuracy of .05 level (Tuckman, 1972). Sample size for this study was obtained using the formula, suggested by Mugenda and Mugenda (2003).

$$n_f = \frac{n}{1+n)\ N}$$

Where: $\mathbf{n_f}$ was the desired sample size when the population is less than 10,000. **n** was the desired sample size when the population was more than 10,000 and **N** was the estimate of the population size. For the study, the desired sample size when the population was more than 10, 000 is 384.

Using stratified sampling, strata for the study was established based on retail MSE

managers and owners, exporters, wholesalers and employees from various sections of the MSEs. The study sought to establish continuous improvement strategies employed by managers and owners in each category of MSEs and how they affected performance of the enterprises. Form a population of 192, proportionate sampling method was used to attain the desired strata to capture the dynamic attributes of the enterprises. Quota and simple sampling procedure were also used to establish a sub-sample for employees in each category. This entailed selecting employees in carving section, sales, design and finishing. The percentages used in each stratum were large enough to be a representative of the entire population and captured its diverse attributes.

The tabulated sample and sample size were established as shown in Table 3.1 below:

Table 3.1 Classification of MSEs in Tabaka Township

Categories	Population	Percentage	Sample
Retailers	150	78.13%	100
Wholesalers	30	15.62%	20
Exporters	12	6.25%	8
Total	**192**	**100%**	**128**

A sample of 10 employees was drawn from each stratum using simple random sampling, to form a total of 30 respondents for the interview schedule. According to Gay, (as cited in Mugenda and Mugenda 2003), a small sample can be drawn, if the population is homogeneous. The proposed sample was studied effectively using the interview schedule proposed and also was also analysed using the descriptive and inferential statistics chosen for the study.

Table 3.2 **Classification of MSEs based on employees**

Categories	Number in sector	Sample
Retailers	100	10
Wholesalers	20	10
Exporters	8	10
Total	**128**	**30**

3.5 Research Instruments

Primary data was collected using semi-structured interview methods and questionnaire. According to Denzin and Lincoln (2000), an in-depth interview leads to generation of insightful stories, rather than statistical information and permitted a better understanding of organisational complexity. Interview schedule sought to obtain data on strategies employed by employees in Soapstone MSEs to ensure continuous improvement in planning, production and marketing of artifacts.

The questionnaire sought to establish continuous improvement strategies employed by owners and managers of MSEs to ensure quality of processes and products. The questionnaire had four sections with the first section dealing with business profile and personal data. The second section focused on managers and owners attitude towards continuous improvement strategies employed in management of the Soapstone MSEs. A five point Likert scale was used for questionnaire items in this section with responses ranging from strongly disagree, Disagree, not sure, agree to strongly agree, on a scale of 1-5. The third section explored the various indicators in performance of MSEs; structured close ended questions were used in this section. The fourth section had, unstructured open ended questions which sought to establish other factors influencing the performance of MSEs.

3.5.1 Pilot Testing

Validation of the questionnaire and interview schedule was done through piloting and guidance by my supervisors and other experts at the University of Nairobi. Piloting was done by administering the instruments to five MSEs managers and five employees in neighbouring division of Nyachenge; this enabled the researcher to check for logical flaws and contradictions. Questions which elicited contradictory responses were either reworded or eliminated. Ambiguous and threatening questions were also changed to be in line with appropriate responses expected from respondents.

3.5.2 Validity of Instruments

According to Saunders et al., (2000), a research is valid only if it actually studies what it set out to study and if findings are verifiable. Orodho (2009), further focused on the degree to which results obtained from analysis of data actually represents the phenomenon under investigation. Content validity was hence attained by developing instruments to cover all aspects of the study on influence of continuous improvement on performance of MSEs. This entailed strategies used in product development, productions process and measurement and analysis strategy. Employees were also subjected to an interviewed schedule to determine their contribution in the continuous improvement of artifacts and artifact production process.

Criterion validity was obtained by comparing responses on influence of continuous improvement strategies and performance of MSEs. The variables for continuous improvement were technology used, number of employees, production strategies, and marketing strategies. Performance referred to changes in number of employee, artifact sales volume and turn over.

3.5.2 Reliability

A study is reliable only if another researcher, using the same procedure and studying the same phenomenon, arrives at similar or comparable, findings (Sekaran, 2003). To test reliability of the instruments before actual field research, the researcher gave questionnaire to five managers and owners of Soapstone MSEs. The same instruments were given to the same respondents after two week, responses were then analysed to check for consistency; and questionnaire items which had contradictions were eliminated or changed. The test-retest method was used to assess the reliability of the research instruments. By using Spearman rank order correlation, a positive correlation coefficient (r) of 0.8 was obtained for pair of questionnaire, and 0.77 for interview schedule. The reliability of the questionnaires and interview schedule was thus judged favourably; according to Orodho (2009), a correlation coefficient (r) of about 0.75 should be considered high enough to judge the reliability of the instruments.

3.6 Data Collection Procedures

During the field research, respondents were carefully selected, and measures put in place to ensure they were willing participants and questions were answered with minimum degree of bias (Hair et al; 2003). A letter of transmittal was given to respondents after an explanation on nature of the study and purpose for which data was sought. The questionnaires were issued to managers, owners and a total of 10 employees selected from each category of MSEs. The selection of respondents was done using systematic sampling procedure; this was done by issuing questionnaires to every two registered MSEs and skipping the third enterprise.

The questionnaire were collected after one day while interview schedule was conducted on employees at their places of work. Important aspects of responses were

recorded in a code book, while new information was recorded for further coding and analysis. The interviews were conducted for a total of three days while questionnaire were given out in two days. The employees were interviewed in Kiswahili since literature on most MSEs showed that more that 50% may not have basic literacy levels and competency to handle the interview questions which were written in English (Atieno, 2009).

3.7 Data Analysis

Data collected was checked for serious flaws and responses were then tallied. Unstructured open-ended questions were coded and responses tallied for further analysis. The data was then analysed using both descriptive and inferential statistical techniques. Frequencies and percentages were used in drawing comparison and establishing information on such aspects of the study as income, experience, sales volume and production issues affecting the enterprise. To check for relationship between variables, Chi-squared test (χ^2) was used; this technique was used to test the hypotheses. The level of significance was maintained at .05 and appropriate degree of freedom. Quantitative data was analysed using Statistical Package for the Social Sciences (SPSS Ver.11.5) Software.

Table 3.3 Operationalisation Table

Objectives	Types of variables	Indicators	Measure	Level of scale	Data collection method	Approach of analysis
	Independent					
To establish extent to which continuous improvement strategy in planning influences performance of Kisii Soapstone MSEs	Planning	Designing	Number of Designs	Ordinal & Ratio	Questionnaire & Interviews	Descriptive & inferential
		Budgeting	Working capital			
		Cost management	Cost saving measures			
To explore extent to which continuous improvement strategy in production process influence performance of Kisi4343i Soapstone MSEs.	Production process	Process	Number of items		Questionnaires & Interviews	Descriptive & Inferential
		Technology	ICT use			
		Equipments	Tools used			
To examine extent to which continuous improvement strategy in measurement an analysis influence performance of Kisii Soapstone MSEs.	Measure & Analysis	Audit	Frequency		Questionnaires & Interviews	Descriptive & Inferential
		Record keeping	Input-output			
		Correction	Number			
	Dependent variable					
	Performance of MSEs	Revenue	Per annum			
		Sales volume	Artifacts sold	Ratio		
		Growth of MSE	Employees	Ratio		
		Non conformity	Rejected items	Ratio		

CHAPTER FOUR

DATA ANALYSIS, PRESENTATIONS, INTERPRETATIONS AND DISCUSSIONS

4.1 Introduction

On the basis of data collected using questionnaire and interview schedule from managers, owners and employees in Soapstone MSEs, the study sought to establish influence of continuous improvement strategy in management of MSEs. Data collected was analysed to capture personal information, business profiles, continuous improvement principles employed in planning, production, measurement and analysis in soapstone enterprises. Descriptive statistic such as frequencies and percentages were used to analyse responses from various questionnaire items.

On the other hand, an inferential statistic, Chi-square (χ^2) test was used to establish implication of responses to various items in the questionnaire and also to test the study hypotheses at .05 level of significance and appropriate degree of freedom. For the purpose of this study, the Chi-square (χ^2) was used to test the following hypotheses:

H01: There is no significant relationship between continuous improvement strategy in planning and the performance of Kisii Soapstone MSEs.

H02: There is no significant relationship between continuous improvement in production process and the performance of Kisii Soapstone MSEs.

H03: There is no significant relationship between continuous improvement strategy in measurement and analysis and the performance of Kisii Soapstone MSEs

4.2 Response Return Rate of Instruments

A total of 128 copies of the questionnaire were issued to respondents from MSEs dealing with wholesale of Soapstone artifacts, retailers and exporters at Tabaka Township in Kisii South district. From the distributed questionnaire, a total of 114 completed questionnaire were received. Five questionnaire were eliminated due to incomplete response to questionnaire items or in cases of double entries in the Likert scale questionnaire items. The 109 valid questionnaire used in the study represented 85.16% return rate. This return rate was above 75% minimum advocated by Tuckman (1972). The high return rate was achieved due to researchers' familiarity with the study area and entrepreneurs interpersonal skills. A further 30 employees from the strata above were subjected to interview schedule to determine their roles in continuous improvement of products and production processes in Soapstone sector.

4.3 Demographic Characteristics

In this section, business profile and personal data of respondent were analysed. Respondents were grouped according to management models; managers, owners and employees were selected from MSEs dealing in retail of artifact, wholesale and export. The section also analysed experience of owners and employees in running the enterprises and indicator of enterprises performance or growth. This entailed sales, turn over and growth in employees. Lastly, the level of education was examined and its influence on performance of MSEs established.

4.3.1 Enterprise Profile

Table 4.1, revealed that Soapstone MSEs had three main organisational models. These were: retailers, who produced Soapstone artifacts in small quantities for sale to

middlemen and wholesalers, wholesalers who produced and bought artifacts in large quantities for sale to middlemen and local agents and exporters who were mainly involved in processing of artifacts for exports. Accordingly, 77.1% of interviewed MSEs were retailers, 16.5% were wholesalers while exporters comprised 6.4% of enterprises.

Majority of managers interviewed as articulated on Table 4.3.1 below, also owned the enterprises; 67.9% managed their own firms while 29.4% employed managers to run MSEs. A small number of enterprises (2.8%), operated without a clear managerial hierarchy; MSEs had two or more people being responsible for MSEs operations.

The data below also confirmed other studies on prevalent management models in MSEs management, where entrepreneurs acted as managers of firm. According to King (1996), this model may have negative or positive impact on performance of MSEs. In case of Soapstone MSEs, lack of financial management structures and auditing skills made entrepreneurs mistrust external personnel. Its no wonder owner-manager model was very significant for all categories of enterprises, with a 67.9% occurrence among interviewed MSEs.

Table 4.1 Distribution of Types of Enterprises, Ownership and Management Models

Categories	**Managers**	**Owners**	**Others**	**Total**
Wholesalers	7	11	0	18
	38.9%	61.1%	0%	16.5%
Retailers	23	59	2	84
	27.4%	70.2%	2.4%	77.1%
Exporters	2	4	1	7
	28.6%	57.1%	14.3%	6.4%
Total	**32**	**74**	**3**	**109**
	29.4%	**67.9%**	**2. 8%**	**100%**

4.3.2 Experience of Owner/ Managers and the Performance of MSEs

The period the enterprises had been in operation also had a direct bearing on performance of the firms. Accordingly, Table 4.2, indicated that 34.5% of managers, owners and employees had over 16 years work experience in Soapstone enterprise, 32.4% had between 11years and 15 years work experience and 20.9% of interviewed managers, owners and employees had experiences ranging between 6-10 years. Upcoming enterprises and new employees were categorised to have experiences of less than five years; this group formed 12.2% of interviewed managers, owners and employees in MSE.

The findings showed that growth of MSEs improved with experience of workers and employees; wholesale and exporters of artifacts had longer work experiences as compared to retailers. However, a number of enterprises had stagnated with minimal growth in terms of number of employees, turnover and sales volume. These cases are captured on Table 4.3, which indicated that continuous improvement strategies in all sections of MSEs played a bigger role in performance of business as opposed to experience of firms or employees. The slow entry of new employee and entrepreneurs into the sector was attributed to dwindling income from Soapstone sales and the phenomenon of younger people opting for jobs in different sectors.

Table 4.2 Distribution of Experience (in Years) in Soapstone Sector (n=139)

Experience	≤ 5	6-10	11-15	≥ 16	Total
Managers/owners	14	15	36	44	109
	82.4%	51.7%	80.0%	91.7%	78.4%
Employees	3	14	9	4	30
	17.6%	48.3%	20.0%	8.3%	21.6%
Total	17	**29**	**45**	**48**	**139**
	12.2%	**20.9%**	**32.4%**	**34.5%**	**100%**

4.3.3 Performance Indicators in Soapstone MSEs

Being the first quarter of the year, many businesses posted growth in most areas and projected significant growth in current year. Table 4.3, indicated that sales of artifacts was viewed positively by 29.4% of MSEs interviewed, while 45.0% experienced growth in the preceding year, 17.4% of MSEs experienced substantial growth 2 years ago and 8.3% had not had much growth in terms of sales for the past two years. This phenomenon was captured by similar trends in profits, with 62.4% of interviewed MSEs having posted profit last year and by the first quarter of the year, 18.3% had posted profits; these rates are expected to be much higher by the end of current year.

There was also significant growth in employment in all firms as shown on Table 4.3, with 31.2% of firms experiencing substantial growth last year, while 27.5% of MSEs had already posted growth in employment in the current year. Employment had been stable previously with 21.1% and 20.2% of MSEs showing growth 2 years ago and other years respectively. The above growth seemed to be directly linked to growth in production volume and new technology, 37.6% of MSEs interviewed showed a remarkable increase in production capacity. The only worrying trend according to Most MSEs was in corresponding growth in new markets and Designs. A further 36.7%, experienced growth over two years ago with only 10.1% having experienced growth in the current year; this was mainly cited by firms which were relatively new.

From past experiences, entrepreneur attributed growth in new markets, and production volume and sales to adaptation of new technology. However, the trend seemed to be slowing down with fewer enterprises investing in technology; only 11.9% experienced growth in technology. Growth indicators shown on Table 4.3, may not be sustainable if there was no corresponding growth in market. Profit in MSEs was established by subtracting the artifact sale from operational costs and overheads. With

increased profits, MSEs focused their attention on other performance attributes like employees and improvement in production technology

Technology used also stagnated thus affecting growth of MSEs; studies showed that for enterprises to prosper, continuous improvement strategy must be initiated in all sections to avoid unnecessary inventory and wastages. Randiki (2000), study demonstrated that Production of goods beyond the market absorption capacity leads to poor prices and wastages.

The implication of the data on area of MSEs performance, was that the continuous improvement strategies had not been very effective in stimulating growth in most areas. The continuous improvement strategy may only be sustained there if there was change in production methods and use of modern technology in marketing of artifact.

Table 4.3 Cross Section of Areas of MSEs Performance in the Year 2010 (n=109)

Area of growth	current year	1 year ago	2 years ago	other years
Artifacts Sold	32	49	19	9
	29.4%	45.0%	17.4%	8.3%
Profits	20	68	21	10
	18.3%	62.4%	19.3%	9.2%
Employment	30	34	23	22
	27.5%	31.2%	21.1%	20.2%
Production volumes	19	41	23	26
	17.4%	37.6%	21.1%	23.9%
New technology	13	28	46	22
	11.9%	25.7%	42.2%	20.2%
New markets	11	19	39	40
& designs	10.1%	17.4%	35.8%	36.7%

4.3.4 Influence of Level of Education on Performance of MSEs

According to Randiki (2000), the level of education of managers, owners and employees in MSEs had a direct bearing on performance; training was therefore important in harnessing capacity utilisation of resources and inculcating additional skills. Soapstone MSEs on Table 4.4 showed that 41.0% of managers, owners and employees had secondary level education, 22.3% were primary level graduates while 14.4% had middle level college certificates. Surprisingly, 10.8% of employees and owner lacked formal education while 7.2% of total number of entrepreneurs and employees were university graduates.

The implication of data was that absence of formal education and training negatively affected the performance of enterprise. McCormick (1999), found out that education gave entrepreneurs additional skills and opened up higher levels of professional networks that may be tapped when the need arose. This aspect was evident with exporters who utilised technology like e-commerce, highlighted on Table 4.3, to market artifacts to international markets. As a management strategy, education was utilised to tap and instill skills spurring growth in enterprises. High numbers of secondary and primary graduates in enterprises was attributed to the ease in setting up of Soapstone businesses and low capita required in MSEs operations.

Table 4.4 Distribution of level of Education on Performance of MSEs (n=139)

Educational level	Wholesalers	Retailers	Exporters	Employees	Total	%
Non formal	1	6	0	8	**15**	**10.8**
Primary	3	17	1	10	**31**	**22.3**
Secondary	9	40	2	6	**57**	**41.0**
Middle level college	2	14	2	2	**20**	**14.4**
University	2	5	2	1	**10**	**7.2**
Other training	1	2	0	3	**6**	**4.3**
Total	**18**	**84**	**7**	**30**	**139**	**100%**

4.4 Continuous Improvement Strategy in Planning on Performance of MSEs

Data analysis focused on stated objective of establishing relationship between the strategy of continuous improvement and the performance of Kisii Soapstone MSEs. This entailed examining strategies used in development of artifacts, budgeting and cost management strategies utilised by managers and owners of Soapstone enterprises

4.4.1 Influence of Artifact Development Strategy on Performance of MSEs

Table 4.5 highlighted level of employee agreement with concept of artifacts designing and improvement as a strategy in performance of MSEs. The study found out that 79.8% of MSEs agreed with strategies employed in artifacts designing, 14.7% felt strategies had no influence on performance and 5.5% were not sure of influence of strategies on performance of enterprise. These findings suggested that most enterprises had established design units; therefore development of new artifacts design was taken seriously. However, MSEs dealing in export of artifacts had disproportionate percentages of entrepreneurs dissatisfied with strategies employed; 57.0% felt the strategies were inadequate, 28.6% of exporters agreed with the strategy while 14.3% where unsure; this was attributed to stringent quality standards set by customer preference.

Table 4.5 MSEs level of Agreement with Artifact Development Strategies n=109

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	5(27.8%)	2(11.1%)	11(61.1%)	18(100.0%)
	31.3%	**33.3%**	**12.6**	**16.5%**
Retailers	7(8.3%)	3(3.6%)	74(88.1%)	84(100.0%)
	43.8%	**50.0%**	**85.1%**	**77.1%**
Exporters	4(57.1%)	1(14.3%)	2(28.6%)	7(100.0%)
	25.0%	**16.7%**	**2.3%**	**6.4%**
Total	**16**	**6**	**87**	**109**
	14.7%	**5.5%**	**79.8%**	**100.0%**

4.4.2 Influence of Budgeting Strategy on Performance of Soapstone MSEs

Based on budgeting strategies, Table 4.6 indicated that 64.2% of MSEs cited budgetary strategy as critical in determining performance, 29.4% disagreed with the strategies, majority being retailers, 6.4% were not sure of budgeting as a strategy in performance of MSEs. This was not surprising given that most retailers lacked record keeping and accounting skills. This also confirmed earlier studies on management of MSEs, where performance was hampered by lack of basic accounting and record keeping skills (McCormick, 1999). Differences between exporters and retailers MSEs were significant in budgeting with 85.6% showing positive responses towards the strategy.

Performance of MSEs may therefore be linked to strategies adopted in budgeting; through budgeting, MSEs interviewed stated that budgeting enabled enterprises to stay ahead of market demands in terms of financial needs. Budgeting also created a window for expansion which interviewed MSEs utilised to attain enterprise targets. The implication of data was that there was a general preparedness in material acquisition, growth forecast and long term strategy which required budgeting and having strategic plans.

Table 4.6 MSEs level of Agreement with Artifact Budgeting Strategies n=109

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	4	3	11	18
	12.5%	42.9%	15.7%	16.5%
Retailers	27	4	53	84
	84.4%	57.1%	75.7%	77.1%
Exporters	1(14.3%)	0(100%)	6(85.6%)	7(100%)
	3.1%	0.0%	8.6%	6.4%
Total	**32**	**7**	**70**	**109**
	29.4%	**6.4%%**	**64.2%**	**100%**

4.4.3 Influence of Cost Management Strategy on Performance of Soapstone MSEs

Cost management was regarded as an important aspect of continuous improvement in MSEs planning strategies; accordingly, Table 4.7, indicated that 73.0% of respondents acknowledged cost management in improvement of performance, 18.3% disagreed with the notion of cost management as a basic strategy in production processes, and a further 8.2% were not sure or failed to respond to questionnaire items. However, cost management was cited as a major factor in reduction of wastages and spurring efficient and effective processes. Cost cutting was established through increases in artifacts production and keeping operational costs and rent at a minimum.

Cost management was also utilised when demand for artifacts was low and during rainy seasons when supply of carving materials was inadequate. Cost management as a continuous improvement strategy therefore entailed reduction in number of employees, increased volume of artifact produced and the use of efficient and effective production methods.

Table 4.7 Level of Agreement with Cost Management Strategies of MSEs n=109

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	6	2	10	18
	30.0%	22.2%	12.5%	16.5%
Retailers	13	7	64	84
	65%	77.8%	80%	77.1%
Exporters	1	0	6	7
	5.0%	0%	7.5%	16.4%
Total	**20**	**9**	**80**	**109**
	18.3%	**8.2%**	**73.0%**	**100%**

4.4.4 Influence of Employee in Artifact Development Strategy in MSEs

Data on employees, Table 4.8, revealed use of various methods in development of design in MSEs continuous improvement strategies. The main method preferred by 30.0% of respondents was copying of samples provided by customer or middlemen, 23.3% used own creativity to develop designs and market artifacts to collectors. Exporters and established enterprises used the internet as a source of ideas on improving artifacts designs; the internet provided MSEs with new trends in artifacts designs and customer preferences. However, a further 20.0% of interviewed employees relied on modification of existing design to give them a fresh look hence spurring sales. 13.3% utilised the internet while 6.7% used experts and other sources to develop designs for their artifacts.

Given the evidence that development of design is important in growth of MSEs, investing in appropriate technology can thus be justified in enterprises. Although a big number of entrepreneurs relied on copying popular designs, there was a general appreciation of individual creation, to encourage and reward creativity, relevant policies should hence be enacted by all stakeholders protect inventions and creativity. Patenting of designs can be used as a strategy to encourage innovations.

Table 4.8 Distribution of Design Development Strategies by MSEs Employees

Methods	Number	Percentage
Internet	4	13.3%
Sample	9	30.0%
Experts	2	6.7%
Modification	6	20%
Creativity	7	23.3%
Others	2	6.7%
Total	**30**	**100%**

4.4.5 Data Analysis on the Study Hypotheses

Test of hypothesis entailed the study of relationship between the independent variable on the dependent variable using Chi-square test (χ^2). For the purpose of this research, confidence level or significance level was maintained at 5% and appropriate degree of freedom, as advocated by many social science researchers (Punch, 2004). On the basis of earlier research on management of MSEs, the researcher was interested in confirming or rejecting the notion that there was no relationship between the continuous improvement strategy and performance of MSEs in Kisii Soapstone industry. To establish the relationship between TQM strategy of continuous improvement in planning and performance of MSEs, a Chi-square test (χ^2) was used to test the hypothesis:

H01: *There is no significant relationship between the TQM strategy of continuous improvement in planning and the performance of Kisii Soapstone MSEs.*

The null hypothesis stated above was determined by the findings of the Chi-square (χ^2) calculation on Table 4.9. The study focused on influence of designing, budgeting and cost management strategies on performance of soapstone MSEs. From the Chi-square (χ^2) computation, calculated value was 72.91, with a degree of freedom, df = 10. From Chi-square table, .05 significant levels had a corresponding p-value of 18.31.

Clearly, the computed Chi-square (χ^2) was greater than the table value or critical value (18.31). The null hypothesis Ho1 was thus rejected; this implied that there was significant relationship between the strategy employed by MSEs in planning and performance of MSEs. Attributes for planning were based on respondent's agreement and utilisation of various strategies in designing, budgeting and cost management in MSEs and artifact production processes. The finding further implied that performance or growth of MSEs depended on application of planning strategy as a management tool.

However, it was important to note that a significant number of respondents disagreed with importance of technology on performance of MSEs. This was attributed to lack of finances to purchase modern equipment, lack of skills and appropriate training. Dependence on samples as elucidated on Table 4.8 and copying of popular designs was also a major factor in determining the direction MSEs take with regard to designing. The concept of patenting was not employed; therefore entrepreneurs did not value investing in designing process; since individual artists were rarely recognised. Performance of MSEs was thus affected by design and technology employed, which collaborates Randiki's (2000), on the clothing enterprises in Nairobi.

Table 4.9 Distribution of MSEs Continuous Improvement Strategies in Planning

Planning Strategy	Disagree	Not sure	Agree
Design improvement strategies	16	6	87
	14.7%	5.5%	79.8%
Designs are original work of	28	6	75
employees	25.7%	5.5%	68.8%
Design Technology adequacy	66	5	38
	60.6%	4.6%	34.9%
Money is adequate for operations	32	7	70
	29.4%	6.4%	64.2%
Materials availability	28	8	73
	25.7%	7.3%	67.0%
Cost-cutting strategies	20	9	80
	18.3%	8.2%	73.4%
Total	**90**	**42**	**432**
	29.0%	**6.4%**	**66.0%**

Chi-square (χ^2) value = 72.91

Degree of Freedom (df) = 10

Level of significant = .05

Critical value = 18.31

4.5 Influence of Continuous Improvement Strategy in Artifacts Production on Performance of MSEs

With regard to production processes, the study explored the influence of Kaizen culture in waste elimination, levels of technology application and employee contribution in continuous improvement of MSEs operations. The focus was on influence of carving machines and equipment and the internet in design development and e-commerce. The second aspect of production process was on capacity utilisation, focusing on volume of artifacts produced and strategies used to improve the quality of artifacts and the production processes. Lastly, the study endeavoured to establish the influence of equipment on performance of soapstone MSEs. The study hypothesised that adoption of modern production process, had significant influence on the performance of Soapstone enterprises.

4.5.1 Contribution of Continuous Improvement in Technology and Tools in MSEs Production Processes

Table 4.10 presented owners and managers' responses towards use of technology and machines as a continuous improvement strategy in management of MSEs. On technology use, 58.7% disagreed with this aspect as a continuous improvement strategy, 30.3% acknowledged that technology had significant influence on performance of their businesses and 11.0% were not sure of influence of technology on performance of enterprises. On the other hand, 11.0% were not sure of the contribution of technology in improving performance of firms.,. However, it was important to note that most of the businesses did not actually own production machines; cost of machines was cited as the main reason for low utilisation of this technology. The study showed that lack of skills and training to handle machines also impacted negatively on their adoption in continuous improvement strategy.

From the data, it was clear that technology was not fully embraced in management of Soapstone MSEs. A disproportionately large percentage of non compliance among retailers was also attributed to lack of finances, formal training and high cost of purchasing machines. However, exporters used computers and internet to transact their businesses, thus opening a very important avenue to reach customers from all over the world. However, the impact of e-commerce among Soapstone MSEs was yet to be fully analysed and documented.

The implication of the study was that growth of enterprises will remain modest until there is growth in number of entrepreneurs willing to adopt technology in production processes. Although the initial usage may affect labour, many more jobs will be created in other sections of the production process. Technology use also had inspired improvement in quality of products and volume of artifacts produced in a day. This had in turn positively impacted on the profits of enterprises utilising these approaches (Tabaka Carvers Cooperative Society). Finally, the entrepreneurs also needed to change their attitude towards this technology to successfully turn around enterprises.

Table 4.10 MSEs Level of Agreement with Technology in Artifact Processing (n=109)

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	10	2	6	18
	15.6%	16.7%	18.2%	16.5%
Retailers	50	10	24	84
	78.1%	83.3%	72.7%	77.1%
Exporters	4	0	3	7
	6.3%	0.0%	9.1%	16.4%
Total	**64**	**12**	**33**	**109**
	58.7%	**11.0%**	**30.3%**	**100%**

4.5.2 Influence of Continuous Improvement in Production Capacity in MSEs

Quantity of artifacts production was an important indicator of performance in most Soapstone MSEs, Table 4.11, showed that 51.4% of MSEs managers and owners were not satisfied with out-put, 42.2% felt that artifacts produced in a day were sufficient and satisfied the demand and 6.4% were not sure if production had any effects on performance. Low production capacity was also attributed to use of rudimentary carving tools and time consuming methods in finishing of carved artifacts; most carvers used hand saws, knives and chisels to carve while sanding was done manually by sandpapers.

Time spent on carving processes may be reduced significantly if carvers used electric machine to drill and sanders in finishing. The effect of technology used was evident in a number of MSEs where machines were employed in carving. From the data on Table 4.11, it can be inferred that quantity of artifacts produced did not satisfy the market. This made the study more relevant since continuous improvement strategies had been shown to spur efficiency and effectiveness in production processes. This assertion is collaborated by Randiki (2000), on capacity utilisation in small scale garment enterprises.

Table 4.11 MSEs level of Agreement with Quantity of Carvings Produced (n=109)

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	12	2	4	18
	21.4%	28.5%	8.7%	16.5%
Retailers	40	5	39	84
	71.4%	71.4%	84.8%	77.1%
Exporters	4	0	3	7
	7.1%	0.0%	6.5%	16.4%
Total	**56**	**7**	**46**	**109**
	51.4%	**6.4%**	**42.2%**	**100%**

4.5.3 Influence of Quality of Artifacts on Performance of Soapstone MSEs

Table 4.12, gathered data on opinion of managers and owners of MSEs regarding contribution of continuous improvement strategy on quality of artifacts. Accordingly, 48.6% were satisfied with quality of artifacts produced and processes, 45.9% were not satisfied and felt there was need to improve quality of artifacts and a further 4.6% were not sure of quality of artifacts in relation to performance. The essence of the study was to explore strategies employed to correct errors in the system and ensure quality product and processes.

From these data, it is evident that MSEs had systems to manage and improve quality of artifacts. However, more than one-half of MSEs who disagreed with quality of artifacts, cited low pay, rejections by exporters and middlemen as the main constraints. Reasons for low product quality also included lack of standards, low prices and poor production methods. Type of customers also influenced quality of artifacts; 85.7% of exporters insisted on highest quality since they fetched good prices in foreign markets, 14.3% disagreed with quality of artifacts processed on performance of MSEs. However, Randiki (2000), cited other attributes like location of MSEs and experiences of entrepreneurs as being significant in determining quality of products and processes.

Table 4.12 MSEs level of Agreement with Quality of Artifact Processed. (n=109)

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	7	2	9	18
	14.0%	40.03%	17.0%	16.5%
Retailers	41	4	39	84
	82.0%	80.0%	73.6%	77.1%
Exporters	1(**14.3%**)	0(**0.0%**)	6(**85.7%**)	7(**100%**)
	2.0%	0.0%	11.3%	6.4%
Total	**50**	**5**	**53**	**109**
	45.9%	**4.6%**	**48.6%**	**100%**

4.5.4 Employees Insight on Factors Inhibiting Production of Quality Artifacts

Analysis of factors inhibiting production of quality artifacts were elucidated on Table 4.13. The study indicated that 43.3% of employees cited quality of stones as inhibiting production of quality artifact, 20.0% identified tools. Market reach had a similar response rate of 20.0% while 6.7% cited poor pay. The findings collaborates the attitude of entrepreneurs on factors affecting quality of artifacts which are highlighted on Table 4.12. The nature of the market also greatly influenced the direction most enterprises took with regard to improvement of quality of artifacts.

The implications of these findings were that quality of stones played a significant role in determining the quality of carved artifact. Enterprise therefore invested in the best stones while others strive to adopt modern processing tools for efficient processes. However, capturing appropriate markets was very significant with exporters of artifacts; it's no wonder they used more resources to access this markets. Enterprises continuous improvements attributes therefore have a direct bearing on the performance of MSEs.

Table 4.13 Distribution of Factors Inhibiting Production of Artifacts in Soapstone MSEs

Production factors	Wholesalers	Retailers	Exporters	Total
Quality of stones	4	4	5	13
	40.0%	40.0%	50.0%	43.3%
Appropriate tools	2	3	1	6
	20.0%	30.0%	10.0%	20.0%
Poor pay	2	2	0	2
	20.0%	20.0%	0.0%	6.7%
Market	1	1	4	6
	10.0%	10.0%	40.0%	20.0%
Total	**10**	**10**	**10**	**30**

4.5.5 Employees Insight on Factors Encouraging Production of Quality Artifacts

Data on Table 4.14, gathered information on personal experiences from employees of Soapstone enterprises regarding continuous improvement strategies explored and other factors which positively impacted on performance of firms. Accordingly, 26.7% of respondents identified influence of agents as being critical in production of quality artifacts. 23.3% of interviewed employees cited market conditions as the main factor encouraging quality of artifacts. Internet and related technology were also identified as key factors in performance of MSEs; 20.0% utilised these methods to improve production. Advertisement and publicity of artifact products through the internet, showroom and trade expos was critical with 10.0% utilising this strategy. The implication of data gathered was that a number of enterprises used modern approaches in management of production processes and had therefore positively impacted on the performance of firms.

Table 4.14 Distribution of Factors Encouraging Production of Quality Artifacts in MSEs

Production factors	Wholesalers	Retailers	Exporters	Total
Internet and Technology	1	1	4	6
	10.0%	10.0%	40.0%	20.0%
Influence of agents	3	4	1	8
	30.0%	40.0%	10.0%	26.7%
Seasons	2	2	1	5
	20.0%	20.0%	10.0%	16.7%
Market conditions	3	2	2	7
	30.0%	20.0%	20.0%	23.3%
Advertisement	1	0	2	3
	10.0%	0.0%	20.0%	10.0%
Total	**10**	**10**	**10**	**30**

4.5.6 Data Analysis on the Study Hypothesis

The second objective of the study was to establish the relationship between continuous improvement strategies in production processes on performance of Kisii Soapstone MSEs. On the basis of earlier studies on management of MSEs, the researcher was interested in confirming or rejecting the notion that there was no relationship between the continuous improvement strategy in production capacity, product quality and technology on performance of MSEs. To establish the relationship between the variables, a Chi-square test (χ^2) was used to test the follows hypothesis:-

H02: *There is no significant relationship between continuous improvement strategy in production process and the performance of Kisii Soapstone MSEs.*

This hypothesis was tested by changes in various production attributes and attitude of managers, owners and employees towards these variables. The relationship between production capacity, quality of artifacts and technology employed were examined with reference to continuous improvement processes. Computed Chi-square (χ^2) for contribution of production process on performance of MSEs was 50.57, with a degree of freedom (df) = 10, and a P-value of 18.31 at .05 significant level. The implication on objective was that there was a significant relationship between production processes and performance of Kisii soapstone MSEs. The null hypothesis was thus rejected, thus validating the notion that continuous improvement strategies in production capacity, quality products and technology positively transformed MSEs. This aspect concurred with findings shown earlier on Table 4.12 on quality of artifacts produced and performance of MSE. However, Chi-square value gave the general picture in production strategy; a critical review indicated that enterprises were yet to embrace modern technology, Table 4.10, indicated that 58.7% disagreed with the strategy in transformation of enterprises.

Table 4.15 also showed similar patterns with regard to quantity of artifacts produced, 18.0% enterprises disagreed with quantity of artifacts produced. However, on quality of artifacts, 23.1% of interviewed MSEs were satisfied with quality of artifacts produced, Table 4.15 and 16.7% still utilised manual production methods. Implication of application of stated production attributes was growth in MSEs performance or stagnation for non compliance. As was expected, production capacity was high among enterprises utilising modern technology. This also affected the quality of artifacts leading to better processes and fewer rejections. The training on machine use was also very low thus leading to fewer entrepreneurs utilising these machines.

Table 4.15 Distribution of Continuous Improvement in Production Strategies by MSEs

Production Strategy	**Disagree**	**Not Sure**	**Agree**	**Total= 654**
Quantity of artifacts	56	7	46	
	18.0%	13.2%	15.9%	
Quality of artifacts	36	6	67	
	11.6%	11.3%	23.1%	
Quality caused by machine use	52	11	46	
	16.7%	20.8%	15.9%	
Level of machine use	64	12	33	
	20.6%	22.6%	11.4%	
Equipment use and efficiency	29	12	68	
	9.3%	22.6%	23.4%	
Training in machine use	74	5	30	
	23.8%	9.4%	10.3%	
Total	**311**	**53**	**290**	

Chi square (χ^2) =50.57

Degree of freedom (df) =10

P-value = 18.31

Significant level = .05

4.6 Influence of Measurement and Analysis Strategy on Performance of MSEs

The third objective of the study was to establish the influence of principles of measurement and analysis as a continuous improvement strategy on performance of Soapstone MSEs. Specifically, the research focused on auditing processes, record keeping strategies and correction of flaws in products and production process. Literature revealed lack of financial management skills as a major constraint in application of this strategy. Data on various aspects of MSEs had validated these claims as demonstrated by level of education and lack of training among entrepreneurs, as shown on Table 4.4.

4.6.1 Influence of Auditing Strategies on Performance of MSEs

The concept of auditing was not popular among MSEs; the number of managers who disagreed with use of the strategy was high compared to those who approved auditing as a strategy in continuous improvement of MSEs. From data on Table 4.16, 56.0% disagreed with the strategy, 36.7% agreed and 7.3% were not sure of influence of auditing on performance of MSEs. This finding also validated Storey (1983) view on lack of managerial competence among entrepreneurs in developing countries as the main constraint to MSEs growth.

Auditing entailed periodic analysis of financial, product processing systems and marketing processes to identify weakness and strengths. From audited reports, enterprises were able to make corrections or improve on systems. In Kaizen models, auditing was identified as one of the more critical stages in organisation applying the continuous improvement principles. However, Cardy and Dobbins (1996) continuous improvement approach of training workers in statistical techniques was rarely utilised in enterprises. The entrepreneurs were therefore not in positions to determine if the processes was effective in attaining quality products.

From objective stated earlier, implication of data was that auditing had not been fully adopted as a continuous improvement strategy by MSEs since the number disagreeing with the strategy and those not sure of its implication was almost two-third of interviewed MSEs. Lack of training and low academic levels were constraints to utilisation of auditing in continuous improvement strategy. It is no wonder many enterprises modified aspects of TQM principles to suit specific enterprise needs.

Auditing as a principle in Deming cycle allowed firms to manage improvements initiatives in a disciplined fashion. Although more than one-half of interviewed enterprises, 56.0%, disagreed with auditing strategy, a majority were aware of its importance in continuous improvement of MSEs performance. Lastly, the concept of auditing was appreciated by fewer retailers this was linked to education levels of entrepreneurs. The implication of low application was also linked to lower income and slow growth of enterprises dealing in retail of artifacts.

Table 4.16 MSEs Level of Agreement with Auditing Strategies Employed (n=109)

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	8	1	9	18
	13.1%	12.5%	22.5%	16.5%
Retailers	50	6	28	84
	82.0%	75.0%	70.0%	77.1%
Exporters	3	1	3	7
	4.9%	12.5%	7.5%	6.4%
Total	**61**	**8**	**40**	**109**
	56.0%	**7.3%**	**35.7%**	**100%**

4.6.2 Influence of Record Keeping on Performance of Soapstone MSEs

Table 4.17 described employees' agreement with enterprises record keeping strategies and their contribution to successes in MSEs. From the data, 53.2% agreed with the aspect of record keeping processes while 38.5% felt that record keeping was unnecessary or inadequate in improving performance of their enterprises and 8.2% were not sure if record keeping had any implications on performance of MSEs. Despite agreement with notion of record keeping as a critical factor in continuous improvement of MSEs, the practice seemed to be entrenched among exporters with 71.4.1% approval rate. Record keeping was inconsistent in wholesalers MSEs and retailers since records for current transactions were temporarily kept and discarded on conclusion of transactions.

The implication of data is that poor record keeping strategies had negatively influenced performance of MSEs; therefore it was not possible to accurately rate level of growth. However, this may also be linked to other attributes of MSEs managers and owners, like experience and lack of training which were portrayed on Table 4.2. This also confirmed earlier studies by McCormick (1997), who contended that entrepreneurs in developing countries lack basic accounting sills and prerequisite training in management.

Table 4.17 Level of Agreement with Record Keeping Strategies on Performance of MSEs

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	7	1	10	18
	16.6%	11.1%	17.2%	16.5%
Retailers	33	8	43	84
	78.0%	88.9%	74.2%	77.1%
Exporters	2	0	53	7
	4.8%	0.0%	8.6%	6.4%
Total	**42**	**9**	**58**	**109**
	38.5%	**8.2%**	**53.2%**	**100%**

4.6.3 Influence of Corrections Strategies on Performance Soapstone MSEs

In measurement and analysis strategies, Table 4.8 indicated that correction was disapproved by 54.1% of MSEs interviewed; the number which agreed with the strategy was 33.0% while 12.8% were not sure of its influence on performance of MSEs. The number disagreeing was almost two-third of all interviewed MSEs. However, the approval rate was highest among exporter, with 57.1% employing the practice, 28.6% disagreed and 14.3% were not sure of correction strategy on performance of MSEs. The bias with performance of exporter MSEs was based on positive performance in these MSEs.

With reference to objectives of the study, these views confirmed the influence of application of quality assurance and corrections of flaws on performance of MSEs. The main reasons for non conformance were poor artifact prices and lack of training. This was also articulated in Table 4.4, which showed that managers and owners MSEs had levels of literacy below fourth form. The results confirm existence of positive relationships between quality, correction strategies and performance of MSEs. The successes of these approach as elucidated by Imai (1986), was not fully utilised in this sector although it has positively transformed a number of enterprise.

Table 4.18 MSEs level of Agreement with Quality Assurance and Correction Strategies

MSEs Response	Disagree	Not Sure	Agree	Total
Wholesalers	8	3	7	18
	13.6%	21.4%	19.4%	16.5%
Retailers	49	10	25	84
	83.1%	71.4%	69.4%	77.1%
Exporters	2(28.6%)	1(14.3)	4(57.1%)	7(100%)
	3.4%	7.1%	11.1%	6.4%
Total	**59**	**14**	**36**	**109**
	54.1%	**12.8%**	**33.0%**	**100%**

4.6.4 Measurement and Analysis Problem Identification Strategies in MSEs

Table 4.19, described problems rated most important in identification of flaws in MSEs processes. The findings of the study showed that 34.9% of enterprises used samples from customers to identify flaws in artifacts. A further 22.9% of these MSEs utilised feedback from customers, 14.7% depended on rejected artifacts to identify problems while 11.9% used sales volume. Another 7.3% of enterprises had internal mechanisms to identify and correct problems in the products and processes; this was done through use of supervisors. However, most MSEs, used samples to detect variations and non conformity in products. This corresponded to earlier information regarding designing of artifact, Table 4.9, where 25.7% of respondents were not directly involved in the processes; majority relied on samples from agents or customers, while. Furthermore, another important indicator of systems which were in control was based on sales volume; high demand for product indicated good processes and vice versa.

From study findings, it was evident that measurement and analysis strategies were well developed in enterprises. However, the extent to which continuous improvement strategies evolved from the information gathered by MSEs was poorly developed. This argument was based on the attitude of managers and owners of enterprises towards measurement and analysis as strategies in improving product and production processes.

Table 4.19 Distribution of problem identification strategies in MSEs

Methods	Numbers	Percentage
Feedback	25	22.9%
Supervision	8	7.3%
Comparing with sample	38	34.9%
Returned artifacts	16	14.7%
Sales volume	13	11.9%
Others	9	8.3%
Total	**109**	**100%**

4.6.5 Data Analysis Regarding the Study Hypothesis

Test of hypothesis was used to establish the relationship between continuous improvement strategy of measurement and analysis on performance of Soapstone MSEs. On the basis of earlier researches on management of MSEs, the study was interested in confirming or rejecting the notion that there was no relationship between TQM strategy of continuous improvement in auditing, record keeping and correction of flaws on performance of Soapstone MSEs. To establish the relationship between the variables, a Chi-square test (χ^2) was used to test the hypothesis:

H03 *There is no significant relationship between continuous improvement strategy in measurement and analysis and the performance of Kisii Soapstone MSEs*

Data on Table 4.20 presented findings of the Chi-square ((χ^2) computation on stated hypothesis. The hypothesis was calculated at Chi-square (χ^2) value of 29.98 with a critical value of 15.51 and a degree of freedom = 8, at confidence levels of .05. In the research findings, it was clear that there was a significant relationship between the strategy of record keeping and performance of Soapstone MSEs. Therefore the null hypothesis was rejected; thus confirming earlier notion on use of measurement and analysis as a critical strategy in continuous improvement and performance of MSEs.

Slow growth of MSEs as articulated on Table 4.20, may be attributed to poor methods in auditing of financial records, and lack of auditing and financial management skills. The descriptive statistic revealed that attitude, measurement and analysis affected performance of MSEs. This was also linked to higher revenue generated by enterprises which had higher rates in measurement and analysis cycles. Accordingly, records of artifacts sale needed regular analysis to determine direction of MSEs performance. This entailed setting standards and ensuring set standards are met in production and products.

Generally, the number of enterprises disagreeing with measurement and analysis strategies and those not sure of its implication was more than one-half of all interviewed enterprise. This trend may be linked to the slow growth of enterprises in the Soapstone sector. Finally, it was clear that the measurement and analysis strategies had significant influence on MSEs performance; their utilisation was critical in transforming enterprise.

Table 4.20 Application of Measurement and Analysis Strategy on Performance of MSEs (n=109)

M&A strategy	Disagree	Not Sure	Agree	Total
Auditing of financial records	61	8	40	**109**
	22.6%	17.8%	17.4%	
Use of financial experts	69	5	35	**109**
	25.6%	11.1%	15.2%	
Record keeping strategies	42	9	58	**109**
	15.6%	20.0%	25.2%	
Records of sales	39	9	61	**109**
	14.4%	20.0%	26.5%	
Quality assurance and	59	14	36	**109**
correction	21.9%	31.1%	15.6%	
Total	**270**	**45**	**230**	**545**
	49.5%	**8.3%**	**42.2%**	**100%**

Chi-square (χ^2) = 29.98

Degree of freedom = 8

P- value = 15.51

Confidence level = .05

4.7 Summary

Using both descriptive and inferential data, this chapter analysed and presented findings on influence of continuous improvement strategy on performance of micro and small enterprises in Kisii Soapstone industry. The objective was to ascertain the influence of above strategy on planning, artifacts production processes, and measurement and analysis cycles in Soapstone MSEs. Testing of hypotheses on significance of continuous improvement on performance of MSEs validated the objectives of the research; continuous improvement strategies had significance influence on performance. From the data analysed, it was also evident that management strategies employed had influenced growth and excellence in all aspects of enterprises in the Soapstone sector. Many enterprises had been able to articulate their objectives, in planning strategies and production processes through adoption of the continuous improvement strategies. However, it was also true that many more Soapstone MSEs faced many challenges in application of the continuous improvement strategy and growth also stagnated over the years.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The major concern of the study was to establish the influence of continuous improvement strategy on performance of micro and small enterprises MSEs in Kisii Soapstone industry. To unravel this, an investigation was carried out on the independent variables; influence of product design strategy, production process, and measurement and analysis on performance of Kisii Soapstone MSEs. The indicators for performance were growth in number of employees, MSEs turnover and profit. Finally, this chapter gave a summary of findings in chapter four, drew conclusion and made recommendation based on the study findings.

5.2 Summary of Findings

The study was guided by three main objectives; the first objective was to establish the extent to which continuous improvement strategy in planning influenced performance of Kisii Soapstone MSEs, the second objective entailed exploring the extent to which continuous improvement strategy in production process influenced performance of Kisii soapstone MSEs and lastly, the study sought to examine the extent to which continuous improvement strategy in measurement and analysis influenced performance of Kisii Soapstone MSEs. Three hypotheses corresponding to these objectives were also formulated and a Chi-square (χ^2), used to test the relationship between variables at alpha .05 level of significance. The study findings were as follows:

On continuous improvement in planning strategies, the study revealed that these strategies had significantly influenced performance of Soapstone MSEs. The study

findings also validated other studies carried out on MSEs management in Kenya. Randiki (2000), emphasised on the need of enterprises to make decisions on optimal use of existing capacity resources, to make enterprises effective and efficient. However, these studies also echoed common problems within MSEs where business plans were rarely utilised. Soapstone MSEs, exploited some attributes of planning as a continuous improvement strategy; this included budgeting and cost management strategies which were also utilised by over 60% of enterprises. Chi-square (χ^2) computations also revealed significant influence of continuous improvement strategies on performance of enterprises. However, artifacts development strategies were not well utilised, since majority of enterprises depended on copying of samples and modification of popular designs. In Kaizen culture, development of own product and continuous improvement of product was key to enterprise growth.

The second objective was on influence of continuous improvement strategy in production process on performance of Soapstone MSEs. Information from Tabaka indicated that there was significant growth and wellbeing on MSEs which utilised these approaches. According to data gathered, technology was important in enhancing production processes and product quality in MSEs. This entailed use of e-commerce in marketing and machines in processing artifacts; other aspect of production were in use of carving machines and handheld sanders in finishing carved artifacts. The quality of artifact produced was also important; Soapstone enterprises highly regarded quality products and entrepreneurs were continuously improving quality of their products. Quality artifacts were highly valued since they fetched good prices in international markets. The quantity of artifacts production was also enhanced in enterprises which were continuously improving on technology and machines in production process; adopting internet complemented production process by reaching a bigger market.

Production process was also found to have a number of challenges; supply of quality stones, lack of access to market and use of rudimentary tools in production were cited as being major contributors to poor quality in production processes and artifacts. Agent and middlemen also contributed positively to production processes and product quality; agents with a wider market reach tended to pay better prices for artifacts. However, it is important to note that those middlemen were also paying only a small percentage of the sales price to enterprises thus exploiting entrepreneurs.

The third objective of continuous improvement in measurement and analysis strategies on performance were least utilised by MSEs. Auditing of accounts and other production processes were rarely utilised as continuous improvement strategies. However, record keeping was regularly used in most MSEs, particularly those dealing in export and wholesale of artifacts. Another strategy in measurement and analysis was quality control and assurance, MSEs used samples from customers and agent to set strict quality standards for artifacts and returned or rejected artifacts were viewed as a sign of inefficiency, correction measures were thus put in place.

Most MSEs also depended on feedback from customer and agents in identification of flaws in products and production systems. Supervision was also a common strategy, while MSEs turnover, sales volume and growth in employment were key indicators of growth. In assessing performance in this study, profit as an indicator of performance was attained by subtracting artifact sales from cost. From the data, enterprises had been growing steadily over the years, although growth in employment seemed to have stagnated for most enterprises. A number of enterprises attributed this phenomenon to use of technology as a cost-cutting strategy; machines replaced human labour, thus affecting employment.

5.4 Suggestions for Further Research

To be able to develop accurate conclusion from the study findings on influence of continuous improvement on performance of Soapstone MSEs, it is imperative for further research to be conducted in the following areas: A similar study should be conducted focusing on contribution of e-commerce, particularly the internet, to the growth and performance of Soapstone MSEs. A comparative study may also be conducted to investigate whether lack of policies protecting individual creation influences performance of Soapstone MSEs. The focus should be on implication of patenting legislations. Lastly, a study may be done to establish the influence of sole proprietorship on performance or growth of MSEs. The focus should be on merits and demerits of this management model.

5.5 Contribution to Literature

The findings of the study allowed for the research to conclude with the assertion that continuous improvement strategies played pivotal roles in performance of MSEs. Secondly, the research had endeavoured to demonstrate how utilisation of continuous improvement strategies in MSEs enabled different sections of enterprises to work together to achieve enterprise goals. The study also demonstrated the significance of planning, focusing on budgeting and product development as key strategies in performance of Soapstone enterprises. From findings of the study, it is also evident that continuous improvement in technology enhanced quality of artifact. Lastly, the study demonstrated the importance of auditing and record keeping strategies in growth of the enterprise. From the above findings, the research concludes by affirming that TQM paradigm of continuous improvement spurred efficient and effective production and marketing processes in Soapstone MSEs.

Summary

In summary, this study sought to establish the extent to which continuous improvement strategies in planning influenced performance of Kisii Soapstone MSEs. Secondly, the study endeavoured to explore the extent to which continuous improvement strategies in production processes influenced performance of Kisii Soapstone MSEs. The third, objective was to examine the extent to which continuous improvement strategies in measurement and analysis influenced performance of Kisii Soapstone MSEs.

The study findings validated the above objectives; continuous improvement culture significantly influenced growth and well being of Kisii Soapstone MSEs. Findings implied that strategies employed by MSEs, in technology use, quality of materials, and marketing methods, had positive bearing on performance of MSEs. The implication here was that consistency of businesses in acquisition of new skills, identification of problems and in some cases prevention of errors from occurring in the production systems led to improved products and production process. Good application of measurement and analysis strategies; including auditing and record keeping were also found to have positive bearing on growth of MSEs.

Needless to say, the study does not purport to cover all areas of MSEs management, nor does it offer an extensive analysis of continuous improvement strategy. However, that did not detract from the value of the research and, in fact had added to it. It had added to value of the study insofar as it had enabled the researcher to devote greater time effort and space to exploration and investigation of the influence of the TQM principle of continuous improvement on performance of Soapstone MSEs. By limiting the scope of research to continuous improvement, the researcher was able to more thoroughly focus on the proposed research questions and satisfactorily respond to them, as indicated by the findings stated earlier.

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Appendix 1 LETTER OF TRANSMITTAL

UNIVERSITY OF NAIROBI
SCHOOL OF CONTINUING
AND DISTANCE LEARNING
KISII EXTRA MURAL
P.O. BOX 2461- 40200
KISII
28th May, 2010

Dear Sir/ Madam

Letter of Transmittal

I am a post graduate student of the University of Nairobi and I am carrying out a research on the application of TQM paradigm on performance of Soapstone micro and small enterprises. I have selected you to be a participant in the study and you are kindly asked to fill the attached questionnaire. The information furnished will be used strictly for academic purpose and will be treated with utmost confidence.

Your co-operation will be highly appreciated, as the success of the study depends on it.

Yours faithfully,

AMIMO E. KALA

Appendix 2 QUESTIONNAIRE FOR MANAGER/OWNER OF SOAPSTONE MSEs.

All questions should have only one answer unless otherwise stated. ***Do not indicate your name.***

Section A: Part A: Contextual and Personal Data

1. What does your business do?

a) Quarry ☐ b) Wholesaler ☐

c) Retailer ☐ d) Exporter ☐

2. Position of the respondent

a) Owner ☐ b) Manager ☐

c) Owner/manager ☐ d) Others (Specify ☐

---

3. Educational Level

a) Non formal ☐ b) Primary ☐ c) Secondary ☐

d) College ☐ e) Universit ☐ d) Others (Specify ☐

4. How long have you been working in the Soapstone sector.

a) Less than 5 Years ☐ b) 5-10 Years ☐

c) 10–15 Years ☐ d) Over-15 Years ☐

---

5. Does the business own the premise or do you pay rent: Owner ☐ Tenant ☐

6. If you pay rent how much per year?

Ksh.	Wholesalers	Retailers	Exporter
Below Ksh, 50,000			
50,000-100,000			
100,000-150,000			
150,000– 200,000			
Over 200, 000			

7. Do you have any formal training in management or processing artifacts? a) Yes b) No

ii) If yes, explain

Section B: Influence of Management Strategies on Performance of Soapstone Business

8. Pleases indicate the extent to which you agree with the following statement on strategies to improve Soapstone product. On a five point Likert scale of 1-5 where;

1. Strongly Disagree 2. Disagree 3. Not sure 4. Agree 5. Strongly Agree

	Statement					
	Designing / Budgeting/ Cost management of business					
	Designs of carvings are continuously being improved					
	Available design are original work of my employees					
	Technology used in designing of artifact is adequate					
	The business has enough money to buy materials and tools					
	We buy our materials on time and when needed					
	Business has strategies to cut cost in production					
	Carving/Technology/Equipments					
	Carvers produce sufficient carvings in a day					
	The carvings produced are of the highest quality					
	Carvings made using machines are of highest quality					
	Business is always using machines to process carvings					
	Modern carving equipments do not increase carving efficiency					
	Employees are trained to use machines in processing artworks					
	Audit/Record keeping/Correction					
	Financial records are best analsysed by financial professionals					
	People outside the carving business can not give reliable advice					
	Keeping records of income and expenditure increases efficiency					
	We know the number of items sold in the last two months					
	Returned or rejected objects are a sign of inefficiency					

C. PERFORMANCE OF BUSINESS

9. Please indicate the areas where you have experienced growth in your business

Area of Growth	Current year	One year ago	Two years ago	Others years
Number of carvings sold				
Profits				
Employment				
Production				
New technology				
Others-(specify)				

10. How many employees do you have in your firm?

a) Below 9 ☐ b) 10-19 ☐ c) 20-29 ☐

d) 30-39 ☐ e) 40-49 ☐

11. How many employees did you have when you started your business?

a) 1- 9 ☐ b) 10-19 ☐ c) 20-29 ☐

d) 30-39 9 ☐ e) 40 -49 ☐

12. Information on Income from the Soapstone Enterprises

Monthly Data	Wholesalers	Retailers	Exporters
How much sales do you make per month			
How Much do you spend on inputs			
How much you spend on salaries/wages			
How Much do you spend on rent			
How Much do you spend on advertisement			
Expenditure on other operating costs			

14. How many carvings do you sale in one week?

a) Below 100 ☐ b) 100 -200 ☐ c) 200-300 ☐

d) 300 -400 ☐ e) Above 400 ☐

15. What is the average salary for an employee in a week?

a) Below Ksh. 2000 ☐ b) 2000-4000 ☐ c) 4000 -6000 ☐

d) 6000- 8000 ☐ e) Above 8000 ☐

Section C: Personal Insight on Soapstone Management Issues

17. Please state critical factors that prevents production of quality carvings

18. Please state critical issues that improves the quality of carvings process

19. Please explain methods used to market and sell your carvings to local and external customers

20. How do you identify problems in production and marketing processes in your business?

21. Explain how you make corrections in production and marketing processes

THANK YOU FOR FILLING THIS QUESTIONNAIRE

SECTION B:

Personal Insight on Continuous Improvement Strategies in Soapstone Business

a) Please explain how you develop designs for carvings

b) Please state factors that prevents production of quality carvings

c. How do you satisfy the customer's needs in terms of quality of product? Explain

d) Please state critical issues that improves the quality of carvings produced

e) Please explain factors that promote the marketing or sales of carving.

f) Explain how you ensure product quality meets the customer needs

g) Does the keeping of production and sells records improve performance of the business?

h) How do you get idea for improving your carvings?

i) Explain the technology which has greatly enhanced the production and marketing process.

j) Do you always keep records of items produced or sold?

THANK YOU FOR YOUR COOPERATION

CONDITIONS

1. You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed with-out prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2)/four (4) bound copies of your final report for Kenyans and non-Kenyans respectively.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.

REPUBLIC OF KENYA

RESEARCH CLEARANCE PERMIT

GPK6055t3mt10/2010

(CONDITIONS—see back page)

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THIS IS TO CERTIFY THAT:

Prof./ Dr./ Mr./ Mrs./ Miss. AMIMO ELFAS KALA

of (Address) UNIVERSITY OF NAIROBI P.O. BOX 2461, KISII

has been permitted to conduct research in ..... **Location,**

KISII **District,**

NYANZA **Province,**

on the topic Application of management paradigm on performance

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Research Permit No. NCST/RRI/12/1/SS/711

Date of issue 09/08/2010

Fee received SHS 1,000

Secretary