APPLICATION OF STRATEGIC PERFORMANCE MEASURES IN SMALL AND MEDIUM-SIZED MANUFACTURING ENTERPRISES IN NAIROBI: A CASE OF THE BALANCED SCORECARD PERSPECTIVES

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DECLARATION

This research project is my original work and has not been presented for a degree in any other University.

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This project has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

I dedicate this publication to my dear parents whose wish has always been that I go to great heights in my pursuit for education.

Above all I dedicate all my work to the Lord God Almighty for the provision of all the resources that enabled me to carry out my studies. Indeed apart from Him I can do nothing. Thank You Father for Your goodness, faithfulness and mercy.

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

This study sought to determine the performance measures used and the extent of their application in manufacturing small and medium-sized enterprises (SMEs) in Nairobi.

The research design was a survey conducted on a target population of all the manufacturing companies in Nairobi from which the stratified sampling technique was used to come up with a sample size of 100 SMEs. The study used questionnaires in data collection. Descriptive and inferential statistics were used in analyzing the data. One-way analysis of variance between and within groups was used to develop comparisons to determine the relationship between knowledge of each BSC measurement perspective and its application in manufacturing SMEs. Frequencies, mean and standard deviation were used to draw the descriptive statistics.

The study found that there was a gap between the knowledge of customer perspective measures, internal business perspective measures and innovation/learning and growth perspective measures and their application in SMEs in Nairobi.

Since value is created through internal business processes and innovation and learning /growth, manufacturing SMEs in Nairobi should strive to understand how they view these elements as a major aspect of their performance measurement. Business managers should identify the critical internal business processes which the firm must excel at and should identify the infrastructure that the organization must build to create long- term growth and improvement of its people, systems and organizational structure. Financial measures should be complemented by non-financial measurement tests related to customer, internal business processes and innovation and learning/growth with the integration of the different business areas being encouraged and the management's strategic objectives being reflected. For manufacturing SMEs this will eventually translate to the competitiveness hence profitability of the firms.

LIST OF ABBREVIATIONS

AGOA	African Growth and Opportunity Act
BSC	Balance Scorecard
COMESA	Common Market of East and Southern Africa
EAC	East African Community
EOI	Export Oriented Industrialization
GDP	Gross Domestic Product
ISI	Import- Substitution Industrialization
KAM	Kenya Association of Manufacturers
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KIRDI	Kenya Industrial Research Development Institute
SAPs	Structural Adjustment Programmes
SMEs	Small and Medium-scale Enterprises
SPMS	Strategic Performance Measurement Systems
TQM	Total Quality Management

CHAPTER ONE: INTRODUCTION

1.1 Background

It is widely acknowledged among management authorities and practitioners that what you cannot measure, you cannot effectively manage. Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action (Neely et al, 2005). It is "the periodic measurement of progress toward explicit short-run and long run objectives and the reporting of the results to decision makers in an attempt to improve program performance" (Neely et al, 1995). Many authors argue that performance measurement constitutes the most critical activity within the performance management cycle, and that it is necessary for effective deployment of strategy throughout the organization.

Organizations are now adopting business strategies that take into account quality of service, flexibility, customization, innovation, rapid response, customer service, and other such attributes that can broadly be described as non-financial measures (Atkinson and Brown, 2001). The main function of performance measurement in a strategic context, as suggested by Letza (1996), is to provide the means of control to achieve the objectives required in order to fulfill the company's mission/strategy statement. This view is supported by Neely et al. (1994) who view performance measurement as a key part of "strategic control". Fawcett et al (1997) develop this argument by stating the need for performance measurement to exercise this control through: helping managers to identify good performance, setting targets and demonstrating success or failure.

Development of an effective measurement system is a crucial task for any organization exposed to tough competition (Thakkar et al, 2007) and it must be an integral part of the management process. Measurement is difficult in organizations because it is not an exact science with hard rules and predictable interrelationships between variables (Brown, 2000).

The balanced scorecard (BSC) measurement framework view of classifying and relating performance measures is based on four perspectives namely; financial perspectives, customer perspectives, internal process perspectives and innovation and learning/growth perspectives. Introduced by Kaplan and Norton (1992) it is a framework that facilitates the translation of strategy into controllable performance measures. The BSC has a characteristic of comprehensiveness which involves the provision of performance measures in the four

perspectives (Decoene and Bruggemen, 2006); the central idea being to complement traditional financial performance measures with non-financial performance measures. It also has the characteristic of linking performance measures with a company's specific strategy and value drivers. Thus, the BSC links performance measures and operational actions to the business strategy to motivate employees to achieve the organizational objectives (Nanni et al, 1992).

Small and medium sized enterprises (SMEs) are defined by a number of factors and criteria, such as location, size, age, structure, organization, number of employees, sales volume, worth of assets, ownership through innovation and technology. In this paper the definition according to number of employees was adopted. According to KIRDI (1997) directory a small and medium-sized firm is one with between five to forty-nine employees.

SMEs are considered the engine of economic growth in all countries. Within the manufacturing industry they have long been recognized as the key drivers of the sector. They contribute in providing job opportunities and act as suppliers of goods and services to large organizations. They act as specialist suppliers of components, parts, and sub-assemblies to larger companies because the items can be produced at a cheaper price than the large companies could achieve in-house. Lack of product quality supplied by them could adversely affect the competitive ability of the larger organizations.

Ghobadian and Gallear (1997) studied the development of TQM in SMEs and found that resource implications particularly that of management time was markedly more taxing for SMEs than larger companies. The resource limitations associated with SMEs indicated that the dimensions of quality and time were critical to ensure that waste levels were kept low, and that a high level of productivity performance was attained. Similarly, the reliance on a small number of customers suggested that to remain competitive, SMEs have to ensure that customer satisfaction remained high and that they had to be flexible enough to respond rapidly to changes in the market.

Lack of a monetary safety for SMEs to absorb the impact of short term fluctuations resulting from change means that the financial dimension of performance is more critical for them than their larger counterparts. The effective monitoring of the human resource dimension of SMEs is also paramount as the flatter structure of SMEs means that employees often have a greater number of job roles and more responsibility. In these circumstances, a well-trained and

motivated workforce is important. Santori and Anderson (1987) stressed the importance of non-financial measures in monitoring and motivating the progress of the human factor of the organization.

Majority of SMEs have simple systems and procedures, which allow flexibility, immediate feedback, short decision-making chain, better understanding and quicker response to customer needs than larger organizations. In spite of these supporting characteristics of SMEs, they are under tremendous pressure to sustain their competitiveness in domestic as well as global markets. Owing to global competition, technological advances and changing needs of consumers, competitive paradigms are continuously changing. These changes are driving firms to compete, simultaneously along different dimensions such as design and development of product, manufacturing, distribution, communication and marketing.

With globalization of markets, SMEs have many opportunities to work in integration with large-scale organizations. Although the SMEs exhibit distinct characteristics that differentiate them from the majority of their larger counterparts, there is a need to establish the relevance of existing performance measurement approaches for SMEs and to identify an appropriate process for the design and implementation of strategic performance measurement systems in their context (Storey, 1994). If they focus on strategic performance measurement SMEs can exploit the opportunities presented to them and sustain their competitiveness in the current business environment, which is increasingly being driven more by value than by cost.

In summary, there are compelling reasons why performance measurement especially in SMEs must become more strategic in outlook. Models and mechanisms must be developed to address the need for appropriate supporting performance measures for manufacturing strategy for SMEs in the rapidly changing business environment.

1.2 Statement of the Problem

Inadequate or inappropriate measures are what make firms fail (McAdam & Bailie 2002). Appropriate performance measures play a very important role in the communication and execution of strategy in any organization (Frigo, 2002). Indeed performance measures guide decision-making to enhance competitiveness and growth (Dwyer, 2007). One of the major challenges that has been discussed by many authorities in literature is the definition of a

consistent set of measures that are clearly linked to the operational strategy of the organization (Bourne et al, 2000).

Many authors have suggested that performance measures should therefore be derived from strategic objectives that are in line with broader corporate goals. In their findings from a study conducted on English small and medium enterprises (SMEs), Sousa et al (2006) concluded that there was a gap between the theory/knowledge of performance measures and the practice in English SMEs, and that defining new performance measures was one of the major obstacles to the adoption of new performance measurement systems.

A study conducted by Frigo (2002), pointed to the existence of a gap between strategy and performance measures, adding that such a gap led to failure in communication of strategy throughout the organization. Hudson et al (2001) concluded that although there was a widespread acceptance of the value of strategic performance measurement amongst the SMEs in which they carried out their study, none had taken steps to redesign or update their existing performance measurement approaches.

The significant differences in the structure and philosophy of SMEs indicate a need to assess the relevance of the strategic performance measurement development process, and this includes performance measures applied and how these are aligned to organizational strategy.

One of the practical implications of the findings of Sousa et al (2006) was that innovation and learning measures should be applied more widely in SMEs. The demands of today's market place require awareness and utilization of performance measures that are strategically aligned and that provide an explicit link back to operations (Greatbanks and Boaden, 1998). Research has shown that SMEs which link operations to their business strategies outperform the competition (Argument et al, 1997).

The role of SMEs in a national economy has been emphasized all over the world, considering their contribution to the total manufacturing output and employment opportunities. SMEs in Kenya employed some 3.2 million people in 2003 and accounted for 18 per cent of national GDP (*Source: African Development Bank and OECD Development Centre, African Economic Outlook, 2004-2005*). Hence, there is potential to improve the overall performance of SMEs and their competitiveness, through strategic performance measurement.

Large-scale manufacturing enterprises are effectively using strategic performance measurement to improve productivity and quality and hence the competitiveness of manufacturing (Nyamwange, 2001). However, strategic performance measurement has received little attention from SMEs although it has an important role to play in improving the competitiveness of SMEs in a global market. Indeed as Hudson et al (2001) found that 'current literature is inadequate in respect of the specific SME context'. Mintzberg et al (1998) also observed that there is a distinct scarcity of strategic planning in the majority of SMEs.

The research borrowed from the approach adopted by Sousa et al (2006) in their study on the state of knowledge and implementation of performance measures in English SMEs. The researchers utilized the balanced scorecard measurement perspectives in the research design.

The research sought to answer the following questions:

1. What are the performance measures used in SMEs within the manufacturing sector in Nairobi?

2. What is the relationship between knowledge and application of BSC measurement perspectives in manufacturing SMEs in Nairobi?

1.3 Research Objectives

Two objectives were identified as follows:

1. To determine the performance measures used in SMEs within the manufacturing sector in Nairobi
2. To determine the relationship between knowledge of each of BSC measurement perspective and its application in SMEs within the manufacturing sector in Nairobi.

1.4 Importance of the Research

The findings will contribute to performance measurement literature in the SMEs' context by providing some empirical information about the performance measures used and the level of application of the same using the balanced scorecard measurement perspectives.

The findings from an investigation into the performance measures used indicated whether they are strategic performance measures that are critical to the growth of SMEs to make them

competitive in a dynamic business environment. This will definitely benefit the relevant arm of government and other parties noting that SMEs are critical to the country's economic growth and contribute about 38 per cent of the nation's wealth; according to a recent speech by Musalia Mudavadi, Deputy Prime Minister and also the Local Government minister.

In view of the importance of the application of strategic performance measures, this study will provide an indication of the strategic positioning of manufacturing SMEs in Nairobi for success in the current competitive environment.

The findings will open opportunities for future research into factors impacting the competitiveness of small and medium-sized manufacturing enterprises.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

There has been a change of focus about what drives performance in today's business environment. Atkinson et al (2005) identify some of the elements that have caused this change as: the changing nature of work, increased competition, specific improvement initiatives, national and international quality awards, changing internal and external demands (stakeholders), accelerated technological advancement, changing organizational roles and the acceleration of globalization.

All these phenomena pose challenges to SMEs in the current complex and competitive business environment. Therefore, SMEs must develop themselves strategically so as to remain competitive, grow and prosper. As they may have to be faced with global competition, many manufacturing SMES are feeling the pressure from their major customers and prime contractors to implement new types of manufacturing practices such as just-in-time production in order to become world-class enterprises (Hendry, 1998).

SMEs usually behave in a reactive manner, therefore the level of strategic planning is poor and there are no formalized decision-making processes. This lack of explicit strategies and methodologies to support the control process leads to both a short-term vision and orientation (Garengo and Bititci, 2007). In the majority of SMEs strategy is often implicit and is the result of the goals and preferences of the entrepreneur alone.

2.2 Performance Measures and Strategy

The definition of performance measures and the setting of targets for these measures are concrete formulations of a firm's strategic choices (Wouters and Sportel, 2006). Competing on the basis of non-financial factors means that organizations need information on how well they are performing across a broad spectrum of dimensions. Performance information about markets and customers, competitive position, financial performance, customer service performance, operational performance, suppliers' performance, and so on needs to be integrated, dynamic, accurate, accessible and visible to aid fast decision-making and to promote a proactive management style leading to agility and responsiveness. The link to strategy is subtle, but powerful: measures that

are aligned with strategy not only provide information on whether the strategy is being implemented, but also encourage behaviors consistent with the strategy (Kaplan and Norton, 1992).

Accepting Mintzberg's (1998) thesis that when an organization realizes that the strategy is a function of the "pattern of decisions and actions" it takes, it then becomes clear that appropriately designed performance measures can encourage the implementation of strategy. Business performance measures are one way of providing information about where the organization is heading. Leading organizations are using their measurement systems as a means of communicating to their employees what is important. Therefore, there is need for appropriate performance measures so that performance gaps, performance shortfalls, even performance advantages are identified.

Organizations are being forced to consider quality, customer service, response and other such attributes, given that today's markets are driven more by value than cost. This has generated the need for performance measures that facilitate the control of these attributes (Bourne et al, 2000). As the pace of change continues to accelerate in the global economy it is important for firms to move beyond financial performance measures and to consider non-financial performance variables that contribute to long-term value creation (Barksy and Bremser, 1999).

Medori and Steeple (2000) outline some of the advantages and disadvantages of using non-financial measures. These measures are timelier than the traditional financial ones; the measures are very measurable and precise; they are meaningful to the workforce thus facilitating continuous improvement; they are consistent with company goals and strategies; and they are flexible and dynamic, and therefore are able to change, as market needs change. One of the main disadvantages is that there is an abundance of non-financial measures and one of the major problems is knowing which measure to use effectively (Stiver et al, 1998).

2.3 Traditional Performance Measures

Performance measurement using traditional financial performance measures is characterized by a cost accounting orientation which emphasizes selective financial indicators such as profit and return on investment (Gomes et al, 2006). Managers strive to minimize the variances from standard rather than seek to improve continually and this may lead to local optimization. The

measurement provides inadequate information for productivity measurement and improvement programs (Banker et al, 1989). Furthermore they also give misleading signals for continuous improvement and innovation (Kaplan and Norton, 1992).

Fawcet et al (1997), state that traditional financial measures have a narrow scope and do not provide understanding and integration of the critical factors (quality, responsiveness and flexibility, what customers want, the competition) that create the foundation of future business success. They are therefore are not adequate for business evaluation (Drucker, 1993).

Various authorities have put forward different classifications to appropriately describe traditional accounting performance measures such as being "Lag indicators" and "Backward looking measures"(Bourne et al., 2000) ; Cumby and Conrod, 2001). "Lag ex-post indicators" (Nixon, 1998). This implies that they have a historical focus, reporting on outcomes, which are consequences of past actions.

Bauly (1994) described them as "Static metrics". As a result they fail to facilitate responsiveness and agility (Bititci et al, 1998) because they are insensitive to changes in the internal and external environment of the firm.

Drucker (1990) asserted that they are inappropriate in modern manufacturing settings, as they said nothing about the factors, such as customer service innovation, the percent of first-time quality, and employee development that actually help grow market share and profits. They also lack the ability to guide the firm in its efforts to achieve manufacturing excellence.

In summary, these views suggest that traditional financial accounting paradigms do not reflect performance in the new economy and are, therefore, inadequate for evaluating an organization's strategic performance. According to Garengo and Bititci (2007) the majority of SMEs focus on accounting aspects, as their approach to performance measurement is traditional as it is based on financial measures.

2.4 Strategic Performance Measurement Systems

Neely (1999) states that there has been an increased interest in more strategic performance measurement systems since the late 1980s. Every company has had to redesign how it measures its business performance in accordance with a prediction made in the early 1990s by Bob Eccles

in a Harvard Business Review article titled "The performance measurement manifesto". Therefore, companies have had to align their performance measurement systems with their strategic goals.

According to Ittner et al (2003) a strategic performance measurement system is a system that provides information that allows the firm to identify the strategies offering the highest potential for achieving the firm's objectives and aligns management processes, such as target setting, decision-making and performance evaluation, with the achievement of the chosen strategic objectives.

Gates (1999) defines strategic performance measurement as a system that ''translates business strategies into deliverable results. According Gates, it combines financial, strategic, and operating business measures to gauge how well a company meets its targets.

Strategic performance measurement systems are based on the strategic options adopted by organizations and help them to build organizational capabilities to sustain their competitiveness (Mohamed et al, 2008). They are based on organizational objectives, critical success factors, and customer needs and monitor both the financial and non-financial aspects (Manoochehri, 1999). They change dynamically with the strategy and they meet the need of specific situations in manufacturing operations and are long-term oriented as well as simple to understand and implement (Santori and Anderson, 1987).

With the business environment having evolved dramatically over the last four decades, performance management and evaluation has become the focus in recent years. Almost every aspect of organizations and management has had to change accordingly and more appropriate measurement tools developed to enhance business competitiveness. Recent years have seen the development of a number of frameworks and models for performance measurement. Performance measurement models or approaches that have evolved since the 1980s are: the Strategic Measurement And Reporting Technique (SMART), the Performance Matrix, the Performance Pyramid, the Business Excellence Model, the Performance Pyramid System, the Balanced Scorecard, the Results and Determinants Framework, the Cambridge Performance Measurement Systems Design Process, the Macro Process Model, the Integrated Performance Measurement Systems (IPMS), the Performance Prism and the Six Sigma.

Their main purpose being to help organizations build organizational capabilities to sustain continuous improvement and hence competitiveness by incorporating a very wide range non-financial measures which include among others: customer satisfaction, quality and delivery, the business's products processes (cycle time and waste), direct personnel measures (Hudson et al, 2001), and measures of intellectual capital and measures that reflect intangible assets.

The research findings of Hudson et al 2000 undertaken to evaluate the appropriateness of strategic performance measurement system development processes for SMEs indicate a discontinuity between current theory and the requirements of practitioners in small companies. One of the recommendations they make is that the relevance of existing approaches needs to be established and appropriate processes for the design and implementation of strategic performance measurement for SMEs identified. A set of requirements for a SME focused strategic performance measurement development process is then specified.

2.5 Benefits and Conditions of Effective Strategic Measurement

The benefits of strategic performance measurement are outlined in literature. Key among them being the alignment of the goals of the individual with the critical success factors (CSFs) of the firm, requirement that an organization defines its CSFs and communicate them to its sub-units, provision of effective utilization of the management by exception concept, provision of prompt performance feedback for prompt corrective action to be taken, provision of objective measures performance and facilitation of the decentralization of decision making.

The necessary conditions for effective strategic performance measurement are that the firm’s CSFs must be clearly identified and included in the system so that the manager can effectively achieve the CSFs. The areas of responsibility and authority should be well defined and the standards of performance, including the time dimensions for which the standards apply, should be predetermined.

Managers must be trained to use the results of the reporting system, reports must be made available on a timely basis, general content and details of the reports must be relevant to the manager’s responsibility and authority. The reports should highlight items requiring management attention including evidence of good performance, improving performance, as well as performance below acceptable levels.

2.6 The BSC and Strategic Performance Measurement

An important issue in regard to strategic performance measurement and SMEs is the enabling role that can be played by the balance scorecard (BSC) to align performance measures and strategy based on the four perspectives of the BSC namely; financial perspectives, customer perspectives, internal process perspectives and innovation and learning/growth perspectives.

The Balanced Scorecard (BSC) is a strategic performance management tool for measuring whether the smaller-scale operational activities of a company are aligned with its larger-scale objectives in terms of vision and strategy. It focuses not only on financial outcomes but also on non-financial inputs of these. The BSC helps provide a more comprehensive view of a business, which in turn helps organizations act in their best long-term interests. The underlying rationale is that organizations cannot directly influence financial outcomes, as these are "lag" measures, and that the use of financial measures alone to inform the strategic control of the firm is unwise.

Organizations should instead also measure those areas where direct management intervention is possible. Clear definitions of each perspective, which constitute the main characteristics of key performance indicators in manufacturing, are given by various authorities as financial, customer, internal business process and innovation and learning/growth.

2.6.1 Financial Perspective

Financial measures remain an important dimension within the BSC. Financial performance measures indicate whether a company's strategy, implementation, and execution are contributing to bottom-line improvement. They indicate how well a company is performing with respect to its profitability targets (Decoene and Bruggeman, 2006). They have to do with a firm’s performance and resource management. Financial performance measures are retrospective performance measures that reflect the results of past managerial actions and an exclusive reliance on them causes organizations to sub-optimize (Kaplan and Norton, 1996).

From a financial perspective, return on equity, return on assets, cash flow, earnings per share, sales, earnings before income tax (EBIT), sales/ total assets, return on capital employed, fixed costs, labour costs, scrap, rework, revenue growth, profit margins, cash flow and net operating income are performance measures generally agreed on.

2.6.2 Customer Perspective

"The Customer is King" is a common adage in business circles. Customer-related measures indicate a company's success in attracting and retaining its targeted customers (Decoene and Bruggeman, 2006). The importance of the customer cannot be overemphasized. According to the findings of a study by Appia-Adu and Singh (1998) of UK SMEs, there is a positive effect of customer orientation on SME performance.

Various authorities have expounded on what it means to be a customer-oriented firm as one, which emphasizes on evaluating and addressing customer needs and which disseminates information about the customer throughout the organization. This implies that customer information is collected and used by the business to develop strategies to meet customer needs. It implies a culture of being responsive to the customer and putting the customer's interests first, while not excluding those of all other stakeholders such as owners, managers, employees, in order to develop a long-term profitable enterprise.

In their study Appia-Adu and Singh (1998) concluded that SME practitioners that were able to inject customer-oriented measures into their business had a distinct possibility of achieving a competitive edge. They were more likely to be more profitable as they are not only driven to develop new products but develop better value and quality products to relative to their competitors, which is vital for achieving and maintaining superior performance. This would further lead to retention/sales growth and repeat purchases resulting in lower customer acquisition costs, the outcome being improved profitability.

Some of the most common customer measures incorporated are: customer retention, customer acquisition, customer satisfaction, number of new customers referred by existing customers, sales to new customers, number of complaints from customers, identify emerging needs of existing customers, price sensitivity surveys, % sales from new products, returns by customers and break even time for new products, customization of products according to customer needs and response time for 'specials'.

2.6.3 Internal Business Process Perspective

Internal business process measures indicate the level of a company's performance with respect to activities that are critical to meet customer and financial objectives (Decoene and Bruggeman,

2006). They also indicate what the firm must do internally to meet its customers' expectations. The core competencies and the critical technologies are identified and measured to ensure market leadership (Thakkar et al, 2007).

They have to be carefully designed by those who know the internal processes of the firm most intimately, as they should be derived from the firm's unique vision and mission statement/strategy. A decision is then made about what processes and competencies the firm must excel at and measures specified for each. The measures address the issues of cost, quality, efficiency, productivity, employee skills and other characteristics of goods and services.

General internal business process perspective measures specific to manufacturing are: output per employee or per labour-hour, time spent on each stage of product development, time to process an operation, number of errors per unit, production volume, number of incidents/ accidents/ and illness rate, measures of rework, downtime, idle time and scrap.

2.6.4 Innovation/ Learning and Growth Perspective

Innovation and learning/ growth measures indicate a company's success in developing the personnel and systems necessary for growth and product improvement in the long run. It is the foundation perspective upon which all the other three perspectives lie (Kaplan and Norton, 2000). They indicate a firm's ability to respond to changes in technology, customer attitudes and the economic environment.

Many managers concede that this perspective is their weakest link in the application of performance measurement based on the BSC and simply label it employee or people perspective (Marr and Adam, 2004). Kaplan and Norton (2004) have recently articulated the principal components of the innovation and learning/growth perspective as consisting of the intangible assets of the organization namely: human capital (employees' skills, talent, and knowledge); information capital (databases, information systems, networks, and technology infrastructure); organization capital (culture, leadership, employee alignment, teamwork, and knowledge management).

The most common measures incorporated are: employee capabilities, motivation, and empowerment, employee satisfaction and employee turnover rate, employee skill level assessments, employee productivity statistics and performance appraisal reports, gender ratios,

percentage internal promotions, technology growth, computer systems, and organizational culture.

2.6.5 Strategy Mapping with the BSC

A strategy map is the best tool to operate a BSC (Kaplan and Norton,). A strategy map is a communication tool used to tell a story of how value is created for the organization. It shows a logical, step-by-step connection between strategic objectives in the form of a cause-and-effect chain. Improving performance in the objectives found in the innovation and learning/growth perspective enables the organization to improve its internal process perspective objectives, which in turn enables the organization to create desirable results in the customer and financial perspectives.

2.7 Nature of SMEs

SMEs are often less endowed in human, financial, and technological resources than their larger counterparts. Nevertheless they have advantages in terms of flexibility, reaction time, and innovation capacity that make them central actors in the new economy (Raymond et al, 2006).

Key characteristics differentiate SMEs from the larger enterprises. Their organizational structures tend to be flat and flexible and the management personalized, with little devolution of authority. They have severe resource limitations in terms of management and manpower, as well as finance. They therefore tend to have high innovatory potential and a reactive, fire-fighting mentality. They also have informal and dynamic strategies. They rely on a small number of customers, and therefore operate in limited markets.

Garengo et al (2005) state that among the factors that seem to constrain performance measurement in manufacturing SMEs in addition, to lack of financial and human resources are wrong perception of the benefits of performance measurement system implementation and short-term strategic planning. And yet research has shown that SMEs with strategic performance measurement systems outperform the competition. ()

SMEs are often suppliers of goods and services to larger organizations (Singh et al, 2008). Increasingly, they have felt the impact of the quality programs imposed on them. The lack of

product quality from SMEs adversely affects the competitive ability of the larger organizations (Quazi et al, 1998).

For SMEs in manufacturing to achieve sustainability and competitive advantage in the tough economic and complex dynamic, market environment in which regulatory bodies are playing a major role, then they have to have effective strategic and operational control. The SMEs must have a clear understanding of their objectives and the methods for efficiently and effectively attaining them (Olve et al, 2003). So a key driver of effective strategic and operational control is the ability to recognize, measure and react to critical success factors. So the way a business articulates and actions its CSFs is a major determinant of success (Olve et al, 2001). Effective performance management is predicated on action aligning with strategy, and that the strategy articulates a balanced set of objectives and the critical success factors which represent or drive these objectives (Kaplan and Norton, 2001).

2.8 Kenyan Manufacturing Sector

Kenya has a large manufacturing sector that serves both the local market and exports to the East African region. Until the early 1990s, the Kenyan government pursued a strategy of import-substitution industrialization (ISI) in the manufacturing sector but there has now been a shift to export oriented manufacturing as the thrust of Kenya's industrial policy (Muhoho R., 2006).

ISI sought to stimulate local manufacturing capacity by blocking manufacturing imports from abroad. International financial institutions have criticized it severely for facilitating the development of inefficient firms that do not have to compete with their foreign counterparts. In accordance with the conditions delineated in the various structural adjustment programmes (SAPs), therefore, the government of Kenya has since replaced ISI with a strategy of export-oriented industrialization (EOI). The latter is premised on the idea of stimulating manufacturing industries by engaging in competition and free trade. It has been criticized for not taking into account the possibility that highly competitive foreign manufacturers will depress nascent Kenyan firms if they are granted access to Kenya's markets through trade liberalization.

The Kenyan manufacturing sector comprises of the formal manufacturing sector which represents roughly 13 percent of GDP in spite of employing less than 1.5 percent of the workforce; and a large and fast growing informal manufacturing sector which employs roughly

40 percent of the workforce. More than three quarters of all manufacturing workers are employed in the manufacturing sector. However, firms in the informal sector tend to be very small and unproductive.

According to a 2004 survey conducted by the Kenya Institute for Public Policy Research and Analysis (KIPPRA) and the Regional Program on Enterprise Development in the Africa Private Sector Group at the World Bank, Kenyan manufacturing firms have a weak competitive edge over their counterparts in the region but appear to be at a significant competitive disadvantage to strategic competitors like China and India.

The key constraints to their growth and competitiveness are plants and equipment that are outdated, overvalued and inefficiently used and a workforce with a low level of quality of production and technical training. In addition, the cost of inputs is high as a result of poor infrastructure and power rationing which has led to high prices of locally manufactured products thereby further limiting their competitiveness in the regional markets and hampering the sector's capacity utilization. Thus the effective demand for locally manufactured products is very low and has been made worse by the ban on fish exports to European Union and reduction of quota allocation for Kenyan garments to the United States of America.

The effective demand continues to shift more in favour of relatively cheaper imported manufactured items. However, the recent introduction of the EAC Customs Union provides Kenya’s manufacturing sector, the most developed within the region, a greater opportunity for growth by taking advantage of the enlarged market size, economies of scale, and increased intraregional trade.

Increased trade openness has facilitated the rapid growth of a few internationally competitive firms and a rise in total exports. The average firm, however, is less internationally competitive and is now less likely to export. With economic recovery and access to new markets through AGOA, COMESA and EAC, total exports have grown in the last few years. Firm data show, however, that since 1999 the average firm has become less likely to export. This suggests that the average firm is unable to compete internationally, and that the rise in exports is being driven by a few firms. Only firms in the textile sector have on average shown export growth, probably because of AGOA.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

The research design was a survey conducted on a sample of manufacturing small and medium sized enterprises (SMEs) in Nairobi. This design borrowed from the balanced scorecard perspectives whereby the four perspectives of measurement were explored. Like in Sousa et al (2006), the balanced scorecard (Kaplan and Norton, 1993) perspective was adopted because of its simplicity, general acceptance among practitioners and researchers, and its close association with strategy (Kaplan and Norton, 1996). Thus the research instrument and variables were been structured around the four perspectives of the balanced scorecard (BSC): financial perspective, customer perspective, internal process perspective and innovation and learning/growth perspective. The study relied on primary data collected using a structured questionnaire with closed-ended questions.

3.2 Population, Sample Frame and Sampling Procedures

The target population of study was all the manufacturing companies in Nairobi. The manufacturing SMEs in Nairobi constituted the sampling frame. SMEs are defined by a number of factors and criteria, such as location, size, age, structure, organization, number of employees, sales volume, worth of assets, ownership through innovation and technology.

The research adopted the definition of SMEs by KIRDI (1997) that define SMEs as employing between 5-49 people. The firms were in two categories; category A with between 5-19 employees and category B with between 20-49 employees.

According to the KIRDI (1997) directory there are 740 category A and B firms in Nairobi in five large sub-sectors namely: Food, beverage, tobacco, textile and apparel and leather products; Wood and wood products, paper production, printing and publishing; Chemicals, petroleum, rubber and plastics; Non- metallic mineral products except petroleum products; Metal industries, fabrication of metal products, machinery and equipment.

Manufacturing Sector	**Number of SMEs in sub-sector (N_1)**	**Number to be sampled (N)**
Food, beverage, tobacco, textile and apparel and leather products	188	25
Wood and wood products, paper production, printing and publishing	186	25
Chemicals, petroleum, rubber and plastics	111	15
Non- metallic mineral products except petroleum products	29	5
Metal industries, fabrication of metal products, machinery and equipment	165	22
Other industries	61	8
Total (N_T)	**740**	**100**

KIRDI (1997) Categorization table

The number of manufacturing SMEs in the sub sectors varies considerably. In order to obtain the number from each stratum in the population proportionate sampling was used using the formula:

$N= N_1 / N_T$ X 100%

Where:

N= Number of SMEs to be sampled from the sub sector

N_1= Number of SMEs in the sub sector

N_T= Total number of SMEs in Category A and Category B

The sample size of 100 was based on an infinite population assumption. Using a sample size which was approximately 10 percent to 20 percent of the population

3.3 Data Collection Methods and Instruments

The data collection instrument was a questionnaire delivered in person to the respondents who were the owners of the businesses or their representatives. In many instances the owners were represented.

The instrument addressed the two research objectives. The first section of the questionnaire sought general information about the particular enterprise such as the name of the business, which manufacturing sub-sector the business belonged to, the number of employees in the firm and the range of the previous year's profit.

The second section had close-ended questions based on a six point Likert scale from 0 to 5 (whereby 0= not sure, 1= strongly disagree, 2= agree, 3= neutral, 4= agree and 5= strongly agree) to indicate the level of agreement to statements about performance measures.

The third section also had close-ended questions based on a scale of 0 to 5 (whereby 0 = not at all, 1= to a very low extent, 2 = to a low extent 3 = moderately 4 = to a high extent and 5= to a very high extent) to indicate level of application of BSC measurement perspectives.

3.4 Data Analysis Methods

The study adopted the use of descriptive and inferential statistics in the analysis of the data. Descriptive statistics was employed in the first and second sections of the questionnaire. According to Cooper and Schindler (1999), descriptive statistics have often been used in exploratory studies.

The third section of the study was analyzed using inferential statistics whereby comparisons were developed using one-way analysis of variance (ANOVA) between and within groups to determine the relationship between knowledge of each BSC measurement perspective and its application in manufacturing SMEs.

The data collected in the questionnaire was coded and run in Statistical Package for Social Sciences (SPSS version 17). The decision was made based on the following hypotheses:

H_{01}: There is no difference in means between knowledge and application of the financial measurement perspective in the BSC

H_{A1}: There is difference in means between knowledge and application of the financial measurement perspective in the BSC

H_{02}: There is no difference in means between knowledge and application of the customer measurement perspective in the BSC

H_{A2}: There is difference in means between knowledge and application of the customer measurement perspective in the BSC

H_{03}: There is no difference in means between knowledge and application of the internal business process measurement perspective in the BSC

H_{A3}: There is difference in means between knowledge and application of the internal business process measurement perspective in the BSC

H_{04}: There is no difference in means between knowledge and application of the innovation/learning and growth measurement perspective in the BSC

H_{A4}: There is difference in means between knowledge and application of the innovation/learning and growth measurement perspective in the BSC

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATIONS

4.1 Introduction

This chapter presents the data analysis and interpretations about the application of strategic performance measures in manufacturing SMEs in Nairobi using the BSC measurement perspectives. Out of the 100 questionnaires sent out, 96 were duly completed and returned making this a response rate of 96 percent.

4.2 Sector of the SMEs Activity

The SMEs in the study could be grouped into five manufacturing sub-sectors according to the KIRDI (1997) categorization as presented in table 4.1 below.

Table 4.1 SMEs Sector of Operation

Manufacturing Sub-sector	Frequency	Percent
Food, Beverage, Tobacco, Textile, Apparel, Leather Products	16	16.7
Wood, Paper Production, Printing and Publishing	15	15.6
Chemicals, Petroleum, Rubber and Plastics	17	17.7
Non-Metallic mineral Products except Petroleum Products	1	1.0
Metal, Fabrication of metal products, Machinery & Equipment	30	31.3
Other industries	17	17.7
Total	**96**	**100**

Majority of SMEs used in the study were from the Metal, Fabrication of metal products, Machinery & Equipment sector as represented by 31.3 percent of the total 96 firms. The next major categories were in Chemicals, Petroleum, Rubber and Plastics and Other Industries and Food, Beverage, Tobacco, Textile, Apparel and Leather products in that order. The 17.7 percent of the SMEs that were from other industries not specified in the questionnaire were in moulding, drugs and medicine, detergents, antiseptics, water industry, PVC coated products, automotive spare parts and services, power generation and petrol engine products, transport, electrical appliances, fibre glass fabrication, solar products, plumbing and hardware export.

4.3 Number of the Employees in the SMEs

The respondents were requested to state the number of employees that the SMEs employed. The findings as shown in table 4.2 below are that 32.3 percent of the SMEs had more than 40 employees, 25 percent had between 11 to 20 employees, and 19.8 percent had below 10 employees while 11.5 percent had between 21 to 30 employees.

Table 4.2: Number of Employees SMEs had

Number	Frequency	Percent
10 and Below	19	19.8
11 to 20	24	25.0
21 to 30	11	11.5
31 to 40	11	11.5
More than 40	31	32.3
Total	**96**	**100**

4.4 Range of Previous Year's Profit

When the data collected was analyzed on the basis of the previous financial year's profit, the findings were as illustrated in Table 4.3 below. 23.9 percent of the total firms studied had a profit of up to KShs 500,000.

Table 4.3: SMEs' Previous Financial Year's Profit

Amount of Profit (KShs)	Frequency	Percent
100,000 and Below	3	3.1
100,001 to 500,000	23	23.9
500, 001 to 1,000,000	20	20.8
1,000,001 to 1,500,000	11	11.5
1,500.001 to 2,000,000	14	14.6
2,000,001 to 2,500,000	7	7.3
More than 2,500,000	18	18.6
Total	**96**	**100**

4.5 Performance Measures used in Manufacturing SMEs

The study sought to establish the performance measures used and the extent of their application in manufacturing SMEs in Nairobi. The majority of the firms had a large percentage of their performance measures in the financial perspectives category.

Table 4.4 Ten most common performance measures

Performance Measures	Percentage of firms with performance measures	Performance measure from BSC Perspective
1. Measures of changes in sales	93%	Financial perspective
2. Measures of relevant product attributes	92%	Internal business process perspective
3. Measures of cash flow	90%	Financial perspective
4. Measures of sales	88%	Financial perspective
5. Measures of incoming materials quality	88%	Internal business process perspective
6. Measures of unit production costs	88%	Financial perspective
7. Measures of cost of production	88%	Financial perspective
8. Measures of continuous improvement in processes	88%	Internal business process perspective
9. Measures of cost vs budget	85%	Financial perspective
10. Measures of a business with a clear business strategy	84%	Internal business process perspective

4.5.1 Financial Perspective Measures

Observations show that majority of the top most common measures are financial in nature, with measures of changes in sales and cash flow in 93 percent and 90 percent of the firms respectively. Of the SMEs surveyed, on average 88 percent of them had measures for unit production costs, cost of production and cost vs. budget. It is evident that the method of measuring performance in SMEs is focused on financial metrics, which according to Bourne et al., 2000, are lag indicators as they report on outcomes, the consequences of past actions. This heavy reliance on financial indicators promotes short-term behaviour that sacrifices long-term value creation for short term performance (Barksy and Bremser, 1999).

4.5.2 Customer Perspective Measures

In 67 percent of the firms performance measures were developed by managers and only 45 percent of the firms agreed that customers had an input in developing performance measures. Although 84 percent of the firms had measures for existing customers and 75 percent had measures for new customers. 68 per cent had measures for lost sales and customers. 71 percent agreed that customer needs were placed ahead of the owners and 77 percent customized products according to customer requirements. Nevertheless only 67 percent carried out customer surveys regularly and 59 percent routinely or regularly measured customer service.

Firms should strive to be more attentive to customers needs by letting them have an input in developing measures and customer satisfaction surveys should be carried as a matter of routine. An improvement in customer satisfaction will not only increase business profits, but also facilitate business development.

4.5.3 Internal Business Process Perspective Measures

Majority of the firms had measures of continuous improvement in processes and measures to do with in-process quality were also agreed upon as being very important for the success of the firm. Most have a clear business strategy and agree that their performance measures were derived from strategy. This agrees with McAdam and Bailey, 2002, that performance measures should be derived from strategy. Nevertheless, 40 percent of the firms did not agree that the firm should have performance measures for management performance. An identical percentage did not have a developed strategy map which is ideally a management function.

Firms should ensure that their operational processes can meet customer demands both the current and in the future. Within the manufacturing sphere, this implies an emphasis on reduction in time delays, incomplete work orders and reductions in service time to increase efficiency and achieve customer satisfaction.

4.5.4 Innovation and Learning/Growth Perspective Measures

73 percent of the firms surveyed agreed that they had data on employees' competencies, capabilities and skills. From observations it emerged that 67 percent of them regularly carried out employee satisfaction surveys and 75 percent of the firms surveyed agreed that performance measures provided adequate information for improvement programmes. However, a paltry 48 percent provided training to employees measures on product quality.

The innovation and learning/growth perspective is the basis of BSC (Kaplan and Norton, 1996). According to them it and can become the motivating force for the previous three perspectives achieving excellent performance for the firm. Manufacturing SMEs should provide opportunities for their employees to learn and grow, to focus on their occupation skills, and to acquire secondary skills, which would translate into a more competitive firm. Resources should also be set aside for technological advancement and general improvement of the firms systems and procedures.

4.6 Knowledge and Application of BSC Measurement Perspectives

Questions were asked to find out how the businesses rated their application of performance measures in the groups of BSC measurement perspectives in order to determine the extent of application. The study then sought to establish association between the knowledge and application of various BSC measurement perspectives. The study conducted a one-way analysis for each individual BSC measurement perspective at 95% confidence level ($p \leq 0.05$).

4.6.1 Application of Financial Perspective Measures

A one-way ANOVA was conducted to determine the relationship between knowledge about financial perspective measures and its application in SMEs. Table 3 indicates that there was a statistically insignificant difference in the category of regular measurement of operational cost within $p= 0.362$, $p= 0.360$ in the regular measurement of revenue growth category, and also in the category of regular measurement of return on investment within $p= 0.161$. The categories regular measurement of labour cost and regular measurement of earning before tax of also

registered statistically insignificant differences within p= 0.435 and p= 0.063 respectively. The category of regular measurement of scrap and re-work and scrap was statistically insignificant within p= 0.816. It therefore implies that SMEs inspite of their knowledge of BSC financial perspective there is a gap between knowledge and application of the same.

4.6.2 Application of Customer Perspective Measures

The one-way ANOVA was conducted to explore the relationship between knowledge about BSC customer perspective measures and its application its in the SMEs (Table 4). It was found that there was a statistically insignificant difference in the speed of response to customers category within p= 0.07, inclusion of new customer requirements in product design within p= 0.056 and goods returned to customers category within p= 0.230. The categories of number of new customers p=0.428 and customer retention/Repeat sales showed that there was statistically insignificant difference within p= 0.428 and p=0.508 respectively. It, therefore, follows that the SMEs do not apply the knowledge they have on BSC customer perspective measures.

4.6.3 Application of Internal Business Process Perspective Measures

A one-way ANOVA was carried out as shown Table 5. It found that there was a statistical significant difference within the time spent on each stage of product development category where p= 0.013. However, there was a statistical insignificant difference in the determination of number of errors category within p= 0.360, the dependent variable of output per employee or per labour hour within p= 0.227 and category of measures of rework within p= 0.118. Also in the categories of occurrence of injuries/accidents and measures of downtime or idle time within p= 0.617 and p=0.503 respectively. From the observations above, it can be implied that the SMEs do apply their knowledge on internal business process perspective measure with regard to time spent on each stage of product development category. However, other measures such as output per employee or per labour, measures of rework, occurrence of injuries/accidents and measures of downtime or idle time were applied to a less extent.

4.6.4 Application of Innovation/Learning and Growth Perspective Measures

A one-way ANOVA was conducted to investigate the relationship between knowledge about BSC innovation/learning perspective and its application in the SMEs Table 6. It was found that

there was a statistically insignificant difference within the employee performance category within p= 0.054, training provided to employees on product quality within p=0.161, the measures of skill level category within p= 0.483 and also the measures of technological improvement category whereby p = 0.316. However, the categories of skills improvement activities and training and also employee satisfaction surveys showed statistically significant differences within p= 0.044 and within p= 0.001 respectively. It, therefore, follows that the SMEs do not apply the knowledge they have on innovation/learning and growth perspective measures with regard to employee performance, their skill/ training level and technological improvement. But they do apply measures of skills improvement activities and training and employee satisfaction surveys.

CHAPTER FIVE: SUMMARY AND RECOMMENDATIONS

5.1 Summary of Conclusions

The aim of the study was to establish the performance measures used in the small and medium-sized manufacturing firms in Nairobi and to determine the extent of application of performance measures using the balance scorecard measurement perspectives. The study targeted 100 manufacturing SMEs listed in the KIRDI (1997) directory. Responses were received from 96 firms representing a response rate of 96 percent. Primary data was collected through a questionnaire with close-ended questions that enabled the collection of quantitative data.

The study found that the most common performance measures in manufacturing SMEs in Nairobi were financial in nature. However, the existence of measures from the internal business process and the innovation and learning/growth perspectives and their application was not very obvious.

The findings indicated overall, that there was a gap between the knowledge of customer perspective measures, internal business perspective measures and innovation/learning and growth perspective measures and their application in SMEs in Nairobi. These generally concur with Sousa et al (2006) findings, on performance measures adopted by English SMEs, that there was a gap between the theory/knowledge of performance measures and the practice.

5.2 Recommendations

The study recommends that manufacturing SMEs in Nairobi should supplement the traditional financial measures with non-financial measures: customer perspective measures, internal business perspectives measures and innovation and learning/growth measures.

Since value is created through customers, manufacturing SMEs may need to interrogate how they view these elements as a major aspect of their performance measurement. Business managers may also need to identify the critical internal business processes which the firm must excel at and hence identify the infrastructure that the organization must build to create long- term growth and improvement (Kaplan and Norton, 2000) of its people, systems and organizational structure.

5.3 Limitations of the Study

There was no major challenge against conducting the study as there was cooperation from all we approached. Nevertheless the focus of the study was limited to firms in Nairobi's Industrial Area. This in a way limits generalization of the results.

5.4 Suggestions for Further Research

The study recommends that further studies be done on the application of the strategic performance measures in large-scale enterprises so as to augment this study since the large and small scale enterprises have different characteristics and the application of the strategic performance measures might differ.

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APPENDICES

Appendix I: Introduction Letter

University of Nairobi,
School of Business,
MBA Office,
P.O. Box 30197,
Nairobi.

Dear Sir/ Madam,

RE: INTRODUCTION LETTER

I am a postgraduate student undertaking a Master of Business Administration degree from the University of Nairobi. I am currently carrying out a research proposal project as part of the requirements for the completion of the degree. The research proposal topic is: **Application of Strategic Performance Measures in Small and Medium-sized Manufacturing firms in Nairobi: The Case of Balance Scorecard Perspectives.**

Your firm has been selected to be part of this study. I would therefore like to request for your assistance in completing the attached questionnaire to enable me complete the research.

The information you provide will be treated with strict confidentiality and will only be used for academic purposes. A copy of the research report will be made available at your request. Your cooperation in this exercise will be highly appreciated.

Yours faithfully,

Pamela M. Chimwani

Appendix II: Questionnaire

An investigation of the extent of application of strategic performance measures in manufacturing small and medium-sized enterprises in Nairobi: a case of the balance scorecard measurement perspectives.

SECTION A: COMPANY BACKGROUND

1. Name of Business _____

2. Indicate the Sector of activity

[ ]. Food, beverage, tobacco, textile and apparel and leather products

[ ]. Wood and wood products, paper production, printing and publishing

[ ]. Chemicals, petroleum, rubber and plastics

[ ]. Non- metallic mineral products except petroleum products

[ ]. Metal industries, fabrication of metal products, machinery and equipment

[ ]. Other industries (please specify) _____

3. Number of employees

[ ] Below 10

[ ] 11 to 20 employees

[ ] 21 to 30 employees

[ ] Between 31 to 40 employees

[ ] more than 40 employees

4. Please indicate the range the previous financial year profit of your business?

[ ] Below Ksh100,000

[ ] Kshs100,001 to 500,000

[ ] Kshs500,001 to 1,000,000

[ ] Kshs1,000,001 to 1,500,000

[ ] Kshs 1,500,001 to 2,000,000

[ ] Kshs 2,000,001 to 2,500,000

[ ] over 2,500,000

SECTION B: PERFORMANCE MEASURES

5. To what extent do you agree with each of the statements below (please rank on a scale 0 to 5 where 0 = not sure, 1= strongly disagree, 2 = agree, 3 = neutral, 4 = agree and 5= strongly agree).

	Not sure	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
The Business has a clear strategy						
Performance measures are derived from strategy						
Business' measures address the need for continuous improvement in processes						
Performance measures encourage behaviors consistent with the strategy						
Management uses appropriate performance measures to communicate the organization's strategy and direction						
The Business benchmarks on performance measures						
Performance measures are based customer needs						
The business measures all the relevant product attributes e.g. quality						
The organization carries out periodic assessment of the relevance of performance measures						
There is consistency of both decision making and action						
The Business measures delivery times						
The Business measures in-process quality						
The Business measures unit production costs						
The Business measures cost vs. budget						
The Business measures incoming materials quality						

New performance measures are developed whilst deleting obsolete measures						
Performance measures are developed by managers						
Performance measures are developed by customers						
The business has developed a strategy map						
The business has data on employees competencies, capabilities and skills						
Employee satisfaction surveys are regularly carried out						
Customer satisfaction surveys are carried out regularly						
There are measures for management performance						
Performance measures provide adequate information for improvement programs						
Customization of products according to customers requirements						
The business has measures for waste of materials						
The business has measures of sales						
The business has measures of changes in sales						
The business has measures of cost of production						
The business has measures of existing customers						
The business has measures of new customers						
The business has routine/ regular measures of customer service						
The business has measures of lost sales/customers						
In the business customer's needs come first ahead of the owner						
The business has measures of time delays						
The business has measures of incomplete work orders						

The business has measures of downtime and idle time						
The business has measures of rework and scrap						
The business has measures of selling costs						
The business has measures for voluntary terminations						
The business has measures for involuntary terminations						
The business has measures of capital employed						
The business has measures of return on investment						
The business has measures of cash flow						
The business has measures of social responsibility						
The business has measures of suppliers' satisfaction						
The business has measures of regulators' satisfaction						
The business has measures of return on equity						
The business has measures of occurrence of accidents/incidents/breakdowns						
The business has measures of gender equality						

SECTION C: APPLICATION OF BSC MEASUREMENT PERSPECTIVES

6. Please rate how your Business' application of performance measures in the following groups of perspectives? (Scale 0 to 5 where 0 = not at all, 1= to a very low extent, 2 = to a low extent 3 = moderately 4 = to a high extent and 5= to a very high extent).

	Not at all	To a very low extent	To a low extent	Moderately	To a high extent	To a very high extent
I) Financial perspective measures						
Regular measurement of return on investment						
Regular measurement of earnings before income tax						
Regular measurement of labour costs						
Regular measurement of scrap and rework						
Regular measurement of revenue growth						
Regular measurement of operational costs						
II) Customer perspective measures						
Number of complaints from customers						
Goods returned by customers						
Number of new customers						
Customer retention/ repeat sales						
Inclusion of new customer requirements in product design						
Speed of response to customers						
III) Internal process perspective measures						

Output per employee or per labour-hour						
Time spent on each stage of product development						
Determination of number of errors						
Determination of number of injuries/accidents						
Measures of downtime and idle time						
Measures of rework						
IV) Innovation and learning/growth perspective measures						
Training provided to employees on product quality						
Measures of skills level						
Surveys of employee satisfaction/attitudes						
Employee performance						
Measures of technological improvement						
Skills improvement activities and training						

Appendix III: Tables of Results

Table 1: Agreement with the Performance Measures Statements

	Not Sure	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
Business has a clear strategy	0	0	2	13	31	50	4.3	0.7924
Performance measures derived from strategy	1	0	2	15	32	46	4.2	0.9147
Business' address the need for continuous improvement in processes	1	0	2	9	42	42	4.3	0.8491
Performance measures encourage behaviors consistent with strategy	3	0	5	15	42	31	3.9	1.0936
Management uses appropriate performance measures to communicate the organization's strategy and direction	0	1	5	19	37	34	4.0	0.9288
Business benchmark on performance measures	2	1	3	15	42	33	4.0	1.0310
Performance measures are based on customers' needs	0	2	1	16	28	49	4.3	0.9205
Business measures all the relevant product attributes	0	0	4	4	30	58	4.5	0.7675
Organization carries out periodic assessment of the relevance of performance measures	4	3	7	13	35	34	3.8	1.3084
Consistency of both decision making and action	2	1	6	14	32	41	4.0	1.1231
Business measures delivery times	2	1	4	17	29	43	4.1	1.1073
Business measures in-process quality	3	0	3	10	34	46	4.2	1.0888
Business measures unit production costs	1	0	4	7	30	54	4.4	0.9190
Business measures cost vs budget	3	1	1	9	31	51	4.3	1.0978
Business measures incoming materials quality	0	1	2	9	28	56	4.4	0.8293
New performance measures are developed whilst deleting obsolete measures	8	3	6	20	33	26	3.5	1.4582
Performance measures are developed by managers	3	3	5	21	29	35	3.8	1.2481
Performance measures are developed by customers	3	7	10	33	21	22	3.3	1.3112
Business has developed a strategy map	4	5	4	25	24	34	3.7	1.3558
Business has data on employees' competencies, capabilities and skills	4	2	4	16	34	36	3.9	1.2522
Employees satisfaction surveys are regularly carried out	3	4	12	24	32	21	3.5	1.2562
Customer satisfaction surveys are carried	4	2	7	19	25	39	3.8	1.3192

out regularly								
There are Measures of Management performance	2	2	6	29	29	28	3.7	1.1397
Performance measures provide adequate information for improvement programmes	3	2	3	16	38	34	3.9	1.1591
Customization of products according to customers requirements	2	1	2	17	28	46	4.1	1.0759
Business has measures for waste of materials	1	1	5	11	37	41	4.1	1.0013
Business has measures of sales	1	0	2	9	29	55	4.4	0.8763
Business has measures for changes in sales	0	0	0	7	36	53	4.5	0.6321
Business has measures of cost of production	0	0	2	9	33	52	4.4	0.7480
Business has measures of existing customers	2	0	1	12	38	43	4.2	0.9537
Business has measures of new customers	1	0	1	22	33	39	4.1	0.9162
Business has routine/regular measures of customer service	1	0	1	24	31	39	4.1	0.9299
Business has measures of lost sales/customers	7	1	5	17	33	33	3.7	1.3936
Customers' needs come first ahead of the owner	0	0	1	25	28	41	4.1	0.8501
Business has measures of time delays	5	3	4	24	33	27	3.6	1.3057
Business has measures of incomplete work orders	3	3	0	25	33	31	3.8	1.1698
Business has measures of down time and idle time	3	3	1	15	47	27	3.9	1.1227
Business has measures of re-work and scrap	3	2	5	18	43	25	3.8	1.1444
Business has measures of selling costs	0	0	1	12	44	39	4.3	0.7144
Business has measures of voluntary terminations	9	3	1	27	26	30	3.5	1.4933
Business has measures of involuntary termination	8	5	5	25	22	31	3.5	1.5284
Business has measures for capital employed	4	2	2	12	32	44	4.1	1.2381
Business has measures of return on investment	7	1	1	11	35	41	4.0	1.3646
Business has measures of cash-flow	0	0	1	9	38	48	4.4	0.7014
Business has measures of social responsibility	5	4	6	25	28	28	3.6	1.3591
Business has measures of suppliers' satisfaction	1	1	2	18	34	40	4.1	0.9719
Business has measures of return on equity	4	0	2	14	38	38	4.0	1.1417
Business has measures of occurrence of accidents/incidents/breakdowns	5	1	1	12	35	42	4.1	1.2428
Business has measures of gender equality	1	0	1	12	38	44	4.3	0.8520

Table 2: Extent of SMEs' Application of BSC Measurement Perspectives

	Not at All	V. low Extent	Low Extent	Moderately	High Extent	V. High Extent	Mean	STDEV
Financial Perspective Measures								
Regular measurement of operational cost	1	0	1	21	29	43	4.2	0.9300
Regular measurement of revenue growth	1	2	2	25	26	39	4.0	1.0619
Regular measurement of labor cost	1	2	4	26	29	33	3.9	1.0705
Regular measurement of return on investment	4	1	2	28	30	30	3.8	1.1955
Regular measurement of earnings before income tax	2	1	6	28	30	28	3.8	1.1081
Regular measurement of scrap and re-work	6	1	13	22	21	32	3.5	1.4275
Customer Perspective Measures								
Speed of response to customers	2	1	2	10	29	52	4.3	1.0433
Inclusion of new customer requirements in product design	2	4	5	20	32	33	3.8	1.2052
Customer retention/repeat sales	3	5	4	30	20	34	3.7	1.3098
Number of new customers	2	9	2	43	18	22	3.4	1.2503
Goods returned by customers	12	27	10	20	13	14	2.4	1.6503
Internal Process Perspective Measures								
Time spent on each stage of product development	9	3	6	30	20	28	3.4	1.5105
Determination of number of errors	6	7	12	21	25	25	3.3	1.4832
Output per employee or per labor hour	10	3	7	27	24	25	3.3	1.5321
Determination of number of injuries/accidents	7	11	13	16	23	26	3.2	1.6001
Measures of rework	10	9	4	30	19	24	3.2	1.5982
Measures of downtime and idle-time	11	12	7	21	21	24	3.1	1.6882
Innovation and Learning/Growth Perspective Measures								
Employee performance	5	3	4	24	33	27	3.6	1.3057
Measures of skills level	2	4	6	31	29	24	3.6	1.1750
Measures of technological improvement	6	2	7	31	26	24	3.5	1.3373
Skills improvement activities and training	9	2	4	29	30	22	3.4	1.4333
Surveys of employees satisfaction/attitudes	5	5	7	33	30	16	3.3	1.2840
Training provided to employees on product quality	11	7	5	27	24	22	3.2	1.5938

Table 3: ANOVA – Knowledge and Application of Financial Perspective Measures

		Sum of Squares	df	Mean Square	F	Sig.
Return on Investment	Between Groups	42.408	23	1.844	1.424	.131
	Within Groups	91.950	71	1.295		
	Total	134.358	94			
Earnings before tax	Between Groups	39.776	23	1.729	1.623	.063
	Within Groups	75.656	71	1.066		
	Total	115.432	94			
Labour cost	Between Groups	27.074	23	1.177	1.036	.435
	Within Groups	80.652	71	1.136		
	Total	107.726	94			
Scrap and re-work	Between Groups	35.958	23	1.563	.713	.816
	Within Groups	155.578	71	2.191		
	Total	191.537	94			
Revenue growth	Between Groups	27.972	23	1.216	1.107	.360
	Within Groups	78.028	71	1.099		
	Total	106.000	94			
Operational cost	Between Groups	21.436	23	.932	1.105	.362
	Within Groups	59.869	71	.843		
	Total	81.305	94			

Table 4: ANOVA – Knowledge and Application of Customer Perspective Measures

		Sum of Squares	df	Mean Square	F	Sig.
Goods returned by customers	Between Groups	65.419	20	3.271	1.265	.230
	Within Groups	191.381	74	2.586		
	Total	256.800	94			
Number of new customers	Between Groups	32.580	20	1.629	1.041	.428
	Within Groups	115.778	74	1.565		
	Total	148.358	94			
Customer retention/Repeat sales	Between Groups	33.457	20	1.673	.969	.508
	Within Groups	127.764	74	1.727		
	Total	161.221	94			
Inclusion of new customer requirement in Product design	Between Groups	43.127	20	2.156	1.683	.056
	Within Groups	94.831	74	1.281		
	Total	137.958	94			
Response to customers	Between Groups	31.499	20	1.575	1.623	.070
	Within Groups	71.828	74	.971		
	Total	103.326	94			

Table 5: ANOVA – Knowledge and Application of Internal Business Process Perspective Measures

		Sum of Squares	df	Mean Square	F	Sig.
Output per employee or per labor hour	Between Groups	105.481	40	2.637	1.242	.227
	Within Groups	114.667	54	2.123		
	Total	220.147	94			
Time spent on each stage of product development	Between Groups	125.605	40	3.140	1.916	.013
	Within Groups	88.500	54	1.639		
	Total	214.105	94			
Number of errors	Between Groups	92.897	40	2.322	1.107	.360
	Within Groups	113.250	54	2.097		
	Total	206.147	94			
Number of injuries/accidents	Between Groups	96.708	40	2.418	.911	.617
	Within Groups	143.250	54	2.653		
	Total	239.958	94			
Measures of downtime and idle time	Between Groups	113.155	40	2.829	.994	.503
	Within Groups	153.750	54	2.847		
	Total	266.905	94			
Measures of rework	Between Groups	122.304	40	3.058	1.412	.118
	Within Groups	116.917	54	2.165		
	Total	239.221	94			

Table 6: ANOVA – Knowledge and Application of Innovation/Learning and Growth Perspective Measures

		Sum of Squares	df	Mean Square	F	Sig.
Training provided to employees on product quality	Between Groups	64.808	20	3.240	1.377	.161
	Within Groups	176.525	75	2.354		
	Total	241.333	95			
Measures of skill level	Between Groups	27.406	20	1.370	.991	.483
	Within Groups	103.750	75	1.383		
	Total	131.156	95			
Surveys of employees satisfaction/attitudes	Between Groups	67.700	20	3.385	2.855	.001
	Within Groups	88.925	75	1.186		
	Total	156.625	95			
Employee Performance	Between Groups	50.300	20	2.515	1.689	.054
	Within Groups	111.658	75	1.489		
	Total	161.958	95			
Measures of Technological employment	Between Groups	40.040	20	2.002	1.156	.316
	Within Groups	129.867	75	1.732		
	Total	169.906	95			
Skills of improvement activities and training	Between Groups	61.940	20	3.097	1.744	.044
	Within Groups	133.217	75	1.776		
	Total	195.156	95			

Appendix IV: LIST OF MANUFACTURING SMEs IN THE STUDY

1. AFROCHEM PRODUCTS
2. AKIYDA 2000 LTD
3. ALIKI PRINTERS & STATIONERS LTD
4. ALL GRAIN CO. LTD
5. ALLIANCE STEEL WORKS LTD
6. ARCHITECTURAL SUPPLIES LTD
7. AROM CHEMICAL INDUSTRIES
8. ASHUT ENGINEERS LTD
9. ASL
10. ASSA ABLOY EAST AFRICA LIMITED
11. ASSOCIATED PAPER & STATIONERY LTD
12. ASTRAL TECHNOLOGIES LTD
13. AUTOMATIC CONTROLS LTD
14. BESTWAY PRINTING PRODUCTION LTD
15. BHACHU WOODPRODUCTS (K) LTD
16. BLOWPLAST LTD
17. BOSKY INDUSTRIES LTD
18. BRASS & ALLIED INTERNATIONAL LIMITED
19. CANTON STEEL FABRICATORS LTD
20. CHEMIGAS LTD
21. CREATIVE MANUFACTURERS LTD
22. DAVIS & SHIRTLIFF LTD
23. DEEPA INDUSTRIES LTD
24. DHAMU ENGINEERS LTD
25. DIASTAR AUTO CARE CENTRE LTD
26. DORMAN LTD
27. EAST AFRICAN METAL WORKS LTD
28. ECONOMIC HOUSING GROUP
29. ELECTROWATTS LTD
30. ELITE TOOLS LTD
31. EQUATORIAL COATINGS LIMITED
32. ESLON PLASTICS OF KENYA LTD
33. EXOTIC WOOD PRODUCTS LTD
34. FARM ELECTRICAL AND AIR CONDITIONING ENGINEERS LTD
35. FINE WOOD WORKS LTD
36. GENERAL PRINTERS LTD
37. GERALD AUTO GARAGE
38. GILOIL COMPANY LTD
39. GOLTAB MELAMINE (K) LTD
40. GRAND PAINTS LTD
41. GURDEV ENGINEERING & CONSTRUCTION WORKS LTD
42. HUSSEINI GLASSWARE MART LTD
43. INTECH ENTERPRISES LTD
44. KAMBA MANUFACTURING (1986) LTD
45. KARACHIWALLA (NRB) LTD
46. KARSAM SERVIETTES CO. LTD

47. KENAPEN INDUSTRIES LTD
48. KIOI METALIC ENTERPRISES LTD
49. KIRLOSKAR KENYA LIMITED
50. LEATHER MASTERS LTD
51. LONGHORN KENYA LIMITED
52. MANJI FOOD INDUSTRIES LTD
53. MASTER PLATTERS LTD
54. NAIROBI POWER ENGINEERS LTD
55. NASIB INDUSTRIAL PRODUCTS LTD
56. NU-MATIC ENGINEERS LTD
57. PALSON ENGINEERING SUPPLIES LTD
58. PAN AFRICAN PETROLEUM LTD
59. PHARMACEUTICAL MANUFACTURING CO. (KENYA) LTD
60. PLASTIC & RUBBER (2005) INDUSTRIES LTD
61. PLASTICO INDUSTRIES LTD
62. POLARPHARM (K) LTD
63. POWER CONTROLS LTD
64. PREMIER SUSPENSION SYTEMS LTD
65. PROVINCIAL PARCEL CARRIERS LTD
66. R & D SOLUTIONS LTD
67. R.A.K. CERAMIC KENYA LTD
68. RAGGED MERCANTILE LTD
69. RAI PLYWOODS (K) LTD
70. RENTOKIL INITIAL KENYA LTD
71. ROBBY BIOTECH ENTERPRISE
72. SACTECH METAL FABRICATORS & STEEL WORKS
73. SAGOO HOLDINGS LIMITED
74. SAHREC ENTERPRISES
75. SILENTNIGHT (K) LTD
76. SLIPWAY ENTERPRISES KOREAN & JAPANESE SPARES
77. SPARCO AUTO SPARES
78. SPECTRA CHEMICALS (K) LTD
79. SPITECH ENG. (EA) LTD
80. STANDARD ENGINEERING WORKS LTD
81. STEAM SYSTEMS LTD
82. SUDAFRIC ENTERPRISES LTD
83. SUNGU AFRICA HERBAL RESEARCH CENTRE
84. SUPER MANUFACTURERS LIMITED
85. SWITCH CRAFT LTD
86. SYNER CHEMIE LTD
87. T.S.S. SPINNING & WEAVING LTD
88. TAWAZON CHEMICAL CO (EA) LTD
89. TEITA ESTATE LIMITED
90. TIM JOINTS LTD
91. TIMBER CORNER LTD
92. TIMBER MAKERS LTD
93. TRANSPAPER KENYA
94. UNGA HOLDINGS LTD

95. VISHKARMA INDUSTRIES LTD
96. WRIGLEY CO. EA LTD