

**MANUFACTURING STRATEGY IN SMALL AND MEDIUM
SCALE ENTERPRISES IN KENYA**

BY

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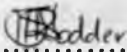


**A RESEARCH PROJECT PROPOSAL SUBMITTED IN PARTIAL
FULFILLMENT FOR THE AWARD OF DEGREE OF MASTER OF
BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI**

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DECLARATION

This research project is my own work and the best of my knowledge. It has not been presented for the award of Masters degree or any other degree in any other university.

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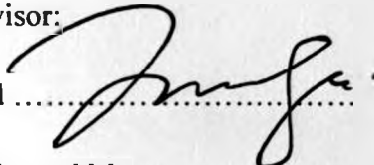
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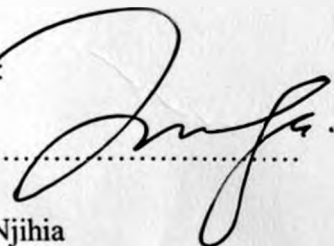
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DEDICATION

This research project is dedicated to my family especially my parents Mr. Julius M. Kilinda and Mrs. Rose N. Musyimi for above everything solely sponsoring my schooling and for instilling in me from an early age the importance of education. To my siblings, Peter Mutisya, Thomas Mutinda and Caroline Mwendu for cheerleading me all through this epic journey. Lastly, to my dear niece Roxanne N. Mutisya for always making me smile. You all remain a bundle of joy that I am forever grateful for.

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I also wish to thank my class members for the many times we sat discussing and sharing ideas for presentations, assignments and mere elaboration on lectures. Your contribution has immensely provided the profound knowledge I now hold.

Finally special thanks go to both my heavenly and earthly fathers for providing the right time for this study and encouraging me to undertake it, respectively.

ABSTRACT

In every organization, continued excellent operational performance calls for a strategic fit to exist i.e a link between its competitive strategy objective and its operations objective. This is achieved through the use competitive objectives as a translation device between strategic and operation objectives and by creating a balance between the market/customer requirement and what the organization is in the position to offer. However defining these strategies is not an easy remedy in handling the constant change in the business entities today. Firms are faced with the extensive process of separating what the firm has in terms of capabilities it can compete on and the development and implementation of these capabilities into processes that work on the available resources.

The study focusing on small and medium manufacturing enterprises in Kenya, sought to establish the capabilities the firm has at its disposal to explore on its resources, the perspective/approach the firm chose to use to satisfy/meet its customer's requirement and lastly how it used these capabilities to gain advantage over its competitors.

A descriptive survey conducted revealed that the most common four capabilities available to the firms were cost, quality, flexibility and delivery. Most firms chose to use the resource-based perspective of strategy i.e. they chose to map/align their operation resources and processes to the requirements of the market. Unlike having the market requirements exploit the operation resources capabilities as is in the case of market based perspective. The study also found that most firms could only focus on one capability at time thus the trade off model was found to be the dominant model of manufacturing capabilities among the firms.

This study recommends that for small and medium scale enterprises (SMEs) in Kenya to be competitive, they need to re-evaluate their capabilities. Benchmarking should be used to borrow best practices on the best strategies to cut cost and improve on other capabilities. Moreover more funds should be sourced in order to pursue a few or all strategies at the same time.

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CHAPTER ONE INTRODUCTION

Background of the study

Businesses often get established for various aims and/or objectives including profit maximization, survival and sustaining a high market share and customer satisfaction. However, the major aim is working at a rate that is difficult to sustain (Grant & Young, 2003). Business is marked by dynamic, rapidly changing markets and technologies. Globalization is world wide, increasing complexity and uncertainty, diversification in services, mergers, acquisitions and regulatory deregulations are top a few of the challenges faced by companies today (Grant, 1994).

Companies do not only survive but also prosper in today's fiercely competitive market, a strategic business unit (SBU) needs to have a successful strategy. Strategy has become an integral part of business, essential to be included in the management's toolbox as it provides to the management's decision-making strategic decisions and actions over time to create sustained competitive value creation. It is viewed as a firm pattern of decisions that shape the long-term capabilities of the firm or operations and their contribution to overall strategy through the mobilization of various resources, with operations (Grant & Lawrence, 2004).

The extent to which organizational success was depend on the accuracy and effects of developing business strategy and how operations strategy could be used as either to build and sustain competitive advantage and the organization.

1.1. Operations and operational strategy

Operations should be considered the heart of every organization. It is the nexus of daily actions of employees, their activities in their industry that contributes to organization's long-term strategic success. The relationship between manufacturing strategy and the organization's

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Businesses often get established for various aims and/or objectives including, profit maximization, attaining and sustaining a high market share and customer satisfaction. However as change today is occurring at a rate that is difficult to sustain (Ernest & Young, 2003) globalization of markets, rapidly changing markets and technology, fluctuations in world economy, increasing complexity and uncertainty, diversification in services, mergers, acquisitions and industry deregulations are but a few of the challenges faced by companies today (Bayus, 1994).

Porter (1980) argued that to not only survive but also prosper in today's fiercely competitive marketplace, a strategic business unit (SBU) needs to have a successful strategy. Strategy has through extensive research been established to be essential in the management's toolbox as it acts as a guideline to the management's consistency in strategic decisions and actions over time which in turn ensure continued customer value creation. It is viewed as a total pattern of decisions which shape the long-term capabilities of any type of operations and their contribution to the overall strategy, through the reconciliation of market requirements with operations resource (Slack & Lewis et al. 2004).

It is therefore in this regard that key focus was turned on the necessity and effects of developing operations strategy and how operations strategy could be used as pillars to build and sustain success for organizations in any given industry.

1.1.1 Operations and operations strategy

Operations should be considered the heart of every organization. It is the myriad of daily actions of operations, when considered in their totality that constitute the organization's long-term strategic direction. The relationship between manufacturing strategy and the organization's

operations is a key determinant of its ability to achieve long-term success or even survival (Hayes & Pisano, 2005)

Johnson et al. (2005) define an operations strategy as the direction and scope of an organization over the long-term, which achieves advantage in a changing environment through its configuration of resources with the aim of fulfilling stakeholder expectations. Therefore it may be established and implemented to steer the organization into the direction it wishes to follow in pursuit of achieving its objectives.

Logically strategies are defined according to the three management levels of an organization for efficiency and effectiveness in operations (Hofer & Schendel, 1978). They are: corporate strategy, business strategy and functional strategy (Hax & Majluf, 1991).

1.1.2 Manufacturing strategy in small & medium scale firms

The statistical definition of SMEs varies by country, and is usually based on the number of employees or the value of assets. The lower limit for small-scale enterprises is usually set at 5 to 10 workers and the upper limit at 50 to 100 workers. The upper limit for “medium-scale” enterprises is usually set between 100 and 250 employees. Small- and medium-scale enterprises (SMEs) are a very heterogeneous group. They may either be in service or manufacturing industries. In the manufacturing industries their operation from textile and clothing manufacturing, fish processing, chemical processing, capital goods and spare parts production, ceramics and glass processing to iron and steel processing among others. These firms operate in very different markets and social environments. Due to the nature of the size of these firms, they may not have defined strategies. Nevertheless they have some guidelines that shape up their operations and therefore implicitly having strategies.

Manufacturing strategy a form of functional strategy is a pattern of decisions by the manufacturing function that guides structural and infrastructural choices to support the overall firm objectives and it consists of two components: process and content (Hayes & Wheelwright, 1984). Manufacturing strategy content refers to the competitive capabilities and the strategic

decision categories, while manufacturing strategy process focuses on the development and implementation of manufacturing strategies in order to increase the competitive capabilities.

Competitive priorities as they are commonly referred are intended capabilities. In other words priorities are capabilities that operations management wants to have in the future, or capabilities on which emphasis should be placed in the future. The firm explores these capabilities to create a competitive front and gain an edge in the market for its products (Ward et al., 1996; Swink &Way, 1995).

However as manufacturing systems evolve from industrial to post-industrial, competitive capabilities change, i.e, response time emerges as an important dimension of competition (Blackburn, 1991); the emphasis that customers place on capabilities change and ultimately the ways organizations achieve these capabilities also change, i.e., there is a transition from economies of scale to economies of scope (Hayes &Pisano, 1994).

Small and medium scale manufacturing firms while embracing the diversity and importance of operations and providing customer satisfaction and competitiveness are faced with the problem of which resources and capabilities should strategically be paired to yield the highest profits or returns. In other words does the underlying manufacturing strategy perspective provide the appropriate systems to develop competitive capabilities that will satisfy customer needs and improve performance? (Ward et al., 1994), more importantly how does the firm prioritize its capabilities and does the dimension of strategy in place flexible to accommodate environmental changes in terms of quick response to customer demands for customized, high quality products (Skinner, 1969).

1.2 Statement the Problem

Manufacturing strategy formulation may to a large extent be perceived to be an action for bigger companies with wider market scope and assured longer succession. However as there is general acceptance that strategies should be defined and this done according to the management levels in the organization, a manufacturing strategy in the operational level should be defined in order to

ensure that the organization is able to make optimum use of its resources and compete effectively in the market.

Due to the nature of the operations and size of Small scale firms they may not have defined strategies. Nevertheless they have some guidelines that shape up their operations and therefore implicitly having strategies. Defining these strategies is not an easy remedy in handling the constant change in the business entities today. An extensive process of separating what the firm has in terms of capabilities it can compete on and the development and implementation of these capabilities is involved (Skinner, 1969).

In Kenya, few researches have been done in the area of manufacturing and operations strategy in general. Richu's (2005) survey on operations strategy practices of private security firms and found out that the industry ranked competitive priorities in the order of good quality, flexibility, low cost and finally speed. However, the study failed to show how practices on each priority could be enhanced and used to influence the level of customer attraction and satisfaction the firm currently had. Okeri(2006) conducted a case study on KPLC on operations strategy and its contribution to performance. He found that KPLC entrenched operations strategy only to a small extent in all dimensions and as a result the company does not enjoy the benefits of operations strategy and as a result it has not developed the competencies necessary to outdo its competitors.

Similar to this study, Grobler (2007) using an example from the manufacturing literature conducted a study on the dynamic view of strategic resources and capabilities where he sought to demonstrate the usefulness of a dynamic analysis of the development and management of strategic capabilities and resources in manufacturing. His study aimed to present dynamic resource/capability systems as a means to understand an issue from manufacturing strategy. While Grobler (2007) found that resource-based analyses do not neglect characteristics of markets, competition, customers, etc. rather the approach emphasizes a mutual dependency between external and internal perspectives on strategy.

Prior studies done led to the need for further research to be done to clarify what use there is both to SMEs and other larger firms on the use of 'competitive objectives' as the translation device

between strategic and operations objectives in other words how exactly do these capabilities help in achieving the firm's objectives. The study also sought to examine the perspective firms take on manufacturing strategy and if there was any direct relationship with the manufacturing systems employed and the effect they would supposedly have on the firm's operational performance i.e is there a concept of an 'ideal' of 'greenfield' operation against which to compare current operations. The research therefore sought to answer: of what importance do manufacturing strategies have on the operations of SMEs.

1.3 The Objectives of the Study

The study was guided by the following objectives:-

1. To determine the capabilities the firm exploits to gain advantage over competitors
2. To determine the underlying manufacturing strategy perspective.
3. To determine the model of manufacturing strategy employed.

1.4 The Importance of the Study

This study will be of importance to the organizations as it will serve as an eye opener to the existing relationship between the disposable resources and capabilities, how they can improve performance by efficiently combining strategic resources and capabilities and finally embrace the choices available to them in relation to the model of manufacturing capabilities most applicable and profitable to them. The researchers will base this study as a basis for further research on manufacturing strategy in other industries aside from the small and medium enterprises whereas the academicians will add it to the already existing knowledge base on the concept of operations strategy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Concept of operations strategy

Strategy in its simplest of terms is concerned with matching a firm's resources and capabilities to the opportunities that arise in the external environment. A widely accepted definition is offered by Johnson et al. (2005), who define strategy as the direction and scope of an organization over the long-term, which achieves advantage in a changing environment through its configuration of resources with the aim of fulfilling stakeholder expectations.

Close to this definition is Slack and Lewis et al. (2004) who view operations strategy as the total pattern of decisions which shape the long-term capabilities of any type of operations and their contribution to the overall strategy, through the reconciliation of market requirements with operations resources. From this definition it is clear that operations strategy acts as a mediator or a loop between what the customers want and what the firm is able to deliver.

The organization is divided into three (top, middle and lower) levels of management. According to Johnson et al (2005) Corporate Strategy - is concerned with the overall purpose and scope of the business to meet stakeholder expectations. This is a crucial level since it is heavily influenced by investors in the business and acts to guide strategic decision-making throughout the business. Corporate strategy is often stated explicitly in a "mission statement". Business Unit Strategy - is concerned more with how a business competes successfully in a particular market. It concerns strategic decisions about choice of products, meeting needs of customers, gaining advantage over competitors, exploiting or creating new opportunities etc. Functional Strategy - is concerned with how each part of the business is organized to deliver the corporate and business-unit level strategic direction. It therefore focuses on issues of resources, processes, people etc.

For the purposes of this study, focus is turned on functional strategy as it deals with relatively restricted plan providing objectives for specific function, allocation of resources among different operations within that functional area and co-ordination between them for optimal contribution to

the achievement of the strategic business unit and corporate-level objectives. Examples include marketing strategies, diversification strategies, technology strategies, manufacturing strategy etc. (Lingham, 2009).

2.2 Manufacturing strategy

The concept of manufacturing strategy began to receive some coverage in the operations management literature following the seminal work of Wickham Skinner (1969) in which he delineated the role that manufacturing strategy can play in the formulation and implementation of corporate strategy.

Skinner (1969) explored manufacturing strategy as a key area of concern and as a tool of competition in a manufacturing industry. He argued that to understand manufacturing strategy one had to separate the process of manufacturing strategy development from its content. Manufacturing strategy in this case is used in different ways: sometimes referring to the process of manufacturing strategy, while other times it refers to the content of manufacturing strategy. The process manufacturing refers to the developing and implementing manufacturing strategy, whereas content often refers to the dimensions of manufacturing strategy, such as cost, quality, flexibility and delivery.

For any business to succeed it is inevitable that its business and manufacturing strategies should be “linked” (Garvin, 1993; Hill, 1983; Skinner, 1969; Wheelwright, 1984). According to Skinner (1969), this lack of linkage continues to be the first most serious problem and the main weakness in manufacturing in the corporate strategy. The lack of linkage in strategic models may in a large part be attributed to the ambiguity surrounding the essence of manufacturing strategy.

Due to this invisible yet “important to note” gap created, manufacturing strategy has been tasked with dealing with uncertainties both internally and from the external environment. As such, the position theory of strategic management allows the firm to choose a competitive strategy that would be most appropriate given the surrounding of the firm in the industry and the market conditions (Porter 1980).

2.3 Market versus resource-based perspective of strategy

The necessity for developing a comprehensive strategy has been emphasized over the years by different philosophers. Based on the evidence supporting the general usefulness of strategies, many approaches to strategy making and implementation can be identified (Mintzberg et al., 1998). The two important approaches to strategic management, on both the corporate and the functional levels (for instance, manufacturing strategy), are: the market-based and the resource-based perspective.

Market-oriented strategy development analyses the company from an external perspective. Performance is expected to depend primarily on the market situation. Based on the “structure-conduct-performance” paradigm, performance and competitive behaviour are driven by the market structure (Bourgeois and Astley, 1979). Profits are the result of either advantageous competitive situations or restricted competition (e.g. monopolies). Strategies are formulated following a comprehensive analysis of the environment.

The resource-based perspective holds as a main principle that the success of organizations is only secondarily determined by the position in the market. From this “resource-conduct-performance” perspective, the primary determinant of success is the bundle of resources and capabilities that characterizes an organization (Wernerfelt, 1984; Penrose, 1959; Selznick, 1957).

Strategic resources are those resources that are necessary to achieve and defend market positions, i.e. resources can only be considered strategic if they are perceived at the marketplace by customers and/or competitors. Strategy development, from a resource-based perspective, is characterized by a continuous assessment of the possibilities to apply these resources and the capabilities resulting from them to changing environments (Mahoney & Pandian, 1992) and to focus management’s attention on these resources that are necessary for success (Mishina et al., 2004).

2.4 Manufacturing resources

According to Wernerfelt (1984) resources are assets which a firm possesses, controls or to which it has access. Resources make it feasible for an organization to achieve its goals. Some resources could be considered strengths in one industry and weaknesses in a different one (Barney, 1991) Resources may be categorized into three groups: Tangible or physical capital resources (Williamson, 1975), intangible resource (Tomer, 1984) and human capital resources (Becker, 1964). Intangibles frequently can be found coupled with tangibles (for instance, number of staff coupled with level of staff experience).

Tangible resources are assets that can be observed and quantified (Wernerfelt, 1984). They include: financial resources such as cash, securities, borrowing capacity and physical resources such as plant, equipment, land, mineral reserves (Williamson, 1975). Tangible resources are the easiest to identify and evaluate: financial resources and physical assets are identified and valued in the firm's financial statements,

These statements however, do not account the value of all the firm's' assets because they disregard some intangible resources. The value of tangible resources is constrained because they are hard to leverage-it is difficult to derive additional business or value from tangible resource. They can also have unique intangible attributes such as quality control processes, unique manufacturing processes and technology that develop over time and create competitive advantage.

Compared to tangible resources, intangible resources are a superior source of core competencies. In fact, in the global economy, "the success of a corporation lies more in its intellectual and systems capabilities than in its physical assets, moreover, the capability to manage human intellect-and to convert it into useful products and services- is fast becoming the critical executive skill of the age" (Tomer, 1984). The intangible resources include: technology, patents, copyrights, trade secrets, reputation (brands, relationships) and culture.

Because intangible resources are less visible and more difficult for competitors to understand, purchase, imitate or substitute for, over time they become more important to the firm than tangible assets and firms prefer to rely on them rather than on tangible resources as the foundation for their capabilities and core competencies and they therefore serve as a better source for competitive advantage. Another benefit is that, unlike tangible resources, their use can be leveraged (Wernerfelt, 1975).

According to Becker (1964) human resources or human capital are the productive services human beings offer the firm in terms of their skills, knowledge, reasoning, and decision-making abilities in other words they are the expertise and effort offered by a firm's employees. In essence these human resources are: skills/know-how, capacity for communication and collaboration and motivation

Becker (1964) argues that human resources do not appear on corporate balance sheets for the simple reason that people are not owned: they offer their services under employment contracts. Identifying and appraising the stock of human resources within a firm is complex and difficult. Human resources are appraised at the time of recruitment and throughout the period of employment, e.g. through annual performance reviews.

2.5 Manufacturing capabilities

Capabilities are the content component of a manufacturing strategy and they are the modes of behavior that an organization is able to perform in order to support its strategy. They are activities a firm is good at doing (Anderson, 1983). A firm's capabilities are created by the complex interaction of its resources combined with implicit or explicit knowledge about the effective combination of these resources (Amit & Schoemaker, 1993).

The competitive priorities as they are commonly referred to, have been identified as the dimensions of manufacturing strategy (Swamidass & Newell, 1987), as a consistent set of goals for manufacturing (Leong et al., 1990) or as strategic preferences in which a firm chooses to compete in the market (Hayes and Wheelwright, 1984). They are cost (price), quality, flexibility

and delivery (Ferdows & De Meyer, 1990; Hayes and Wheelwright, 1984; Kathuria, 2000; Ward & Duray, 2000).

2.5.1 Cost

Competing based on cost means offering a product at a low price relative to the prices of competing products. Competing in the marketplace requires low-cost production. Specifically, inventories have been the focus of cost reduction for manufacturers and are one of the justifications for the just-in-time (JIT) system. In order to keep manufacturing competitive, firms also have to emphasize materials, labor, overhead, and other costs (Li, 2000). A low-cost strategy can result in a higher profit margin, even at a competitive price and low cost does not imply low quality.

Noble (1997) suggests that cost-efficiency is associated with low-cost product, low work-in-process inventories, production flow, reduction overhead, and so forth. According to Ward and Duray (2000) to develop cost as a competitive priority, the operations function must focus primarily on cutting costs in the system, such as costs of labor, materials, and facilities. Companies that compete based on cost study their operations system carefully to eliminate all waste. They might offer extra training to employees to maximize their productivity and minimize scrap. Also, they might invest in automation in order to increase productivity. Generally, companies that compete based on cost offer a narrow range of products and product features, allow for little customization, and have an operations process that is designed to be as efficient as possible.

2.5.2 Quality

To compete on quality means the firm should be able to produce in accordance with specification and without error. According to Koufteros et al. (2002), product quality is defined as the extent to which the manufacturing enterprise is capable of offering products that will fulfill customers' expectations. With a similar concept, Vickery et al. (1997) view product quality as the ability to manufacture a product whose operating characteristics meet performance standards. Product



quality is also defined as fitness for use and includes product performance, reliability, and durability (Tracey et al., 1999).

Flynn et al. (1994) suggest that it is difficult to measure precisely the dimensions of the quality construct in an objective fashion. They propose that perceived quality market outcomes focus on management's perception of the plant's product quality and customer service, relative to its competition.

2.5.3 Flexibility

An increasing number of manufacturing managers recognize that achieving low cost and high quality is no longer enough to improve or sustain their firms' competitive advantages as such there arises a need for a firm to have the ability to change operations as the market dictates or so as to meet the market requirements and demand.

Flexibility is defined as the ability to respond to changes and to accommodate the unique needs of each customer as well as deal with environmental uncertainties (Narasimhan & Das, 1999). In addition, Yusuf et al. (2003) suggest that having the ability to vary capacity, respond to rapid changes in demand, and mass customize at the cost of mass production is critical in today's business.

Upton (1994) contended that according to the ambiguity of definition, flexibility can be categorized by three attributes: dimensions-identification of what is to be changed; time horizon-identification of how frequently changes or adaptations will occur; and elements-identification of the ways of being flexible that are needed for a given dimension of change and time horizon.

2.5.4 Delivery

In recent years, even as cost and quality have become baselines by which competitiveness is measured, time and delivery performance have turned out to be increasingly important as a vital differentiator. Indeed, delivery performance has become the focal point of many firms' competitive strategies (Fawcett et al., 1997). Delivery may be defined as competition on the

basis of quick and reliable deliveries of products and services in accordance with promises made to its customers (Nobel, 1997).

Making delivery a competitive priority means competing based on all time-related issues, such as rapid delivery and on-time delivery. Rapid delivery refers to how quickly an order is received; on-time delivery refers to the number of times deliveries are made on time. When delivery is a competitive priority, the job of the operations function is to critically analyze the system and combine or eliminate processes in order to save time. Often companies use technology to speed up processes, rely on a flexible workforce to meet peak demand periods, and eliminate unnecessary steps in the production process (Nobel, 1997).

2.6 Models of competitive priorities

It is unlikely that any single organization can excel simultaneously at all of the four operations performance objectives. However, a firm may choose to compete in one, some or all of these competitive priorities and as such, within a particular industry, different firms differ in the emphasis given to each capability (Hayes & Wheelwright, 1984). There are mainly three models a firm may choose to prioritize its capabilities The trade-offs model, the cumulative capabilities model and the rigid-flexibility model.

2.6.1 The Trade-off model

Organizations need to choose which performance objectives they will give priority to. This may result in having to 'trade-off' less than excellent performance in one aspect of operations in order to achieve excellence in another. Fig 1.1 below shows an illustration of the priorities the company would trade-off in favor of the other. For example in order to excel in cost priority the company would have to compromise on its product quality.

Fig 1.1 The trade off model



(Source: Porter 1980)

The concept of trade-off in operations objectives was first proposed by Skinner (1969) but was also echoed by some other prominent authors in the business and manufacturing operations literature (e.g.; Porter, 1980, 1985; Hayes and Wheelwright, 1984; Hill, 1995). Skinner (1969) argued that operations could not be 'all things to all people'. Its main proposition is that no manufacturing system or unit can perform equally well and outstandingly enough to create competitive advantage across all manufacturing capabilities. In order to achieve a significant competitive edge firms must recognize the existence of these trade-offs and limitations.

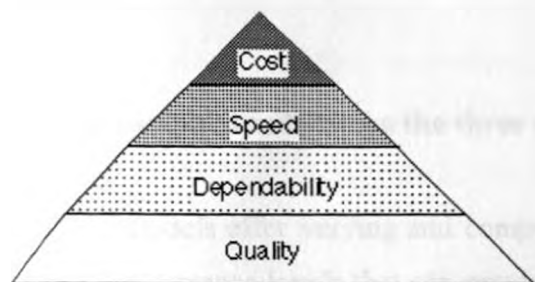
Organizations should thus align their structural and infrastructural resources accordingly to best fit the performance niche identified by the organization's business and operational strategies. A key concept is that this model's ultimate focus is on the study of manufacturing performance at the marketplace, industry level of analysis, and not only on internal improvements over time. The trade-offs model main proposition is summed up by Hayes and Wheelwright (1984) price, quality, dependability and flexibility. It is difficult (if not impossible), and potentially dangerous, for a firm to try to compete by offering superior performance along all of these dimensions simultaneously, since it will probably end up second best on each dimension to some other company that devotes more of its own resources to developing that competitive advantage".

2.6.2 The Cumulative Capabilities model

According to this model a certain level of quality must be reached before making effort to improve dependability, and dependability is a prerequisite for cost efficiency, and flexibility can be improved only after the former three capabilities are achieved. Ferdows, et al (1986) and De Meyer, et al. (1989) further verified this model based on their comparative studies of USA,

Japanese, and European manufacturing firms. Ferdows and De Meyer (1990) modified the cumulative model to suggest what they called the “sand-cone” model. They argued that cost efficiency remains the ultimate goal of most manufacturers, and that cost improvements are an ultimate consequence of resources and management efforts invested in the improvement of quality, dependability, and flexibility.

Fig 1.2 The Cumulative capabilities model



(Source: Ferdows and De Meyer, 1990)

Ferdows and De Meyer (1990) argue that certain operational capabilities enhance one another, enabling operations excellence to be built in a cumulative fashion. As the model's figure above (Fig 1.2) illustrates, each lower layer must be extended in order to support any increase in any higher layer. This is to say; to build cumulative and lasting manufacturing capability management attention and resources must go towards enhancing in the order of quality, dependability, flexibility, and cost efficiency. As in the cumulative model, quality must be the prerequisite of other capabilities. They claim that operational capabilities developed in this way are more likely to endure than individual capabilities developed at the expense of others.

2.6.3 The Rigid-Flexibility model

This model was first proposed by Collins and Schmenner (1993). Similar to the cumulative capabilities models, this model also establishes that trade-offs can be avoided. Contrary to the cumulative capabilities models, however, the proponents of this idea argue that it is not necessary for organizations to follow a certain sequence in the development of capabilities in

order to achieve “rigid-flexibility”. All an organization has to do is concentrate on building “discipline” and “simplicity” in processes and procedures.

Since this concept is also offered as an alternative to the trade-offs and cumulative capabilities models, it is appropriate to assume that the main focus of this model was to study the relationships between manufacturing capabilities at the industry, marketplace levels, and not only as means of achieving internal improvements over time.

2.6.4 A comparison between the three models

The three models offer varying and competing views on how a manufacturing organization can achieve performance levels that can provide it with a competitive edge in the industry. Hugen and Anderson (1988) consider that the various objectives can be improved simultaneously because they do not oppose each other and they can be reached in a concerted way. So, based on the experience of Japanese manufacturers, it has been noted that some firms tend to simultaneously achieve acceptable performance levels in the various manufacturing objectives, thus eliminating trade-offs (Hayes and Pisano, 1994).

In spite of the theoretical arguments and the empirical evidence against the trade-off model, it is still considered that it can be applied in certain circumstances. Some authors maintain that it is possible to combine the trade-off and sand cone models as they offer complementary approaches. However the manufacturing capabilities will depend on the technology used. If the factory operates below the technological frontier of its manufacturing possibilities, it can improve in all the objectives simultaneously. When it reaches the frontier, trade-offs occur. But if the frontier moves, there will be further room for simultaneously achieving the objectives (Clark, 1996; Schmenner and Swink, 1998).

The cumulative capabilities and the rigid-flexibility models overlap on a “compatibility” perspective. These two models put forth the argument that high levels of performance can eventually be attained on a number of manufacturing performance measures simultaneously. In order to achieve this outcome, both models propose similar approaches: strong focus on quality-

related programs, supplier involvement, just-in-time (JIT) production, workforce commitment and involvement amongst others. The key difference in the two models is that the cumulative capabilities model prescribes a sequential precedence, a predetermined order in the sequence of the development of manufacturing capabilities, whereas the rigid-flexibility model does not.

2.7 Summary

Operations strategy is defined as a reconciliation of the market needs with the firm's capabilities and resources. The success of any particular business strategy depends not only on the ability of operations to achieve excellence in the appropriate performance objectives or priorities, but crucially on customers valuing the chosen competitive factors on which the business strategy is based. Matching operations excellence to customer requirements lies at the heart of any operations based strategy.

The manufacturing strategy is designed to steer the operations of a company into the direction of achieving its overall strategy. This is done by focusing on the competitive capabilities and the strategic decision categories and also developing and implementing strategies in order to increase the competitive capabilities (Hallgren & Olhager, 2006).

In as much as this sounds easy to handle the management is face with tasks of finding an "ideal greenfield" operation against which to compare current operations for the firm to evaluate progress towards achieving the organization's objectives. This is can be achieved by establishing the 'fit' is the alignment between market and operations capability i.e. are the operations resources and processes are aligned with the requirements of its markets or have the market requirements moved to exploit operations resource capabilities (Slack & Lewis, 2003).

Importance is drawn on how well a firm should be in formulating a strategy that will combine the resources available to the firm and the capabilities it can pursue to yield the most returns on investment. The study thereby seeks to identify the capabilities the firm can explore to create a competitive front and gain an edge in the market for its products. It will also try and shed some

light on how the model of competitive capabilities or dimensions of strategy prioritize these capabilities and finally define to what extent the underlying manufacturing strategy perspective develops appropriate systems to develop competitive capabilities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a descriptive design with an exploratory view which sought to provide an insight and expand the understanding of the manufacturing capabilities used in firms. The study's aim was to establish which and how these capabilities affected the operations and thus defining the what, where and how much of the operations phenomenon.

3.2 Population of the study

The study focused on small and medium scale enterprises (SMEs). The population interest however being manufacturing SMEs listed under Kenya Management Assistance Programme (KMAP), the Kenya Industrial Estates (KIE) Limited and "Jua Kali" associations. The list provided for thousands of SMEs however this was narrowed down to firms that had been in operation for at least five years and fell under any of the manufacturing industrial categories as defined by the industrial area of Kenya. A total of 1051 enterprises qualified for inclusion in the study.

3.3 Sampling

Some industrial categories have more firms than others, systematic sampling which provides equal probability of selection (EPS) and avoids errors caused by selection bias and random sampling was employed to select "every 5th" firm from the alphabetically listed firms until a new list of 210 firms was generated which was a fifth (1/5) of the original list. Given the time frame for the study this size was considered appropriate to offer required information.

3.4 Data collection

Primary data was collected by use of questionnaires from manufacturing or operational managers and deputy operational managers in the firms that had such posts. In the firms where the organizations had no operational level, internal records of the firm were used to acquire the necessary information for the study. Face to face interviews were used on circumstances where the respondents were pressed for time. A letter of introduction and the questionnaires were hand delivered to some firms while others were sent an attachment to the managers email addresses. Follow up calls were made on areas that respondents requested for clarification and this yielded accuracy in answers given. The questionnaire was pretested on 10 randomly selected respondents thus enhancing the validity of the data.

3.5 Data analysis

Data was analyzed by the use of descriptive statistics such as percentages, charts and tables. Statistical Package for Social Sciences (SPSS) was used as an aid in the overall analysis. The study used SPSS because of its ability to cover a wide range of the most common statistical and graphical data analysis and is very systematic. Computation of frequencies in tables and charts was used in data presentation. In addition, the study used standard deviation and mean scores to present information pertaining to the objectives of the study. The information was presented and discussed as per the objectives and research questions of the study.

3.6 Limitations of the study

The researcher encountered quite a number of challenges related to the research and most particularly during the process of data collection. During the study the researcher traveled for long distances before accessing different manufacturing SMEs to access the respondents. In addition some of the respondents had to be pushed to assist with data while others declined entirely to respond to the questionnaires. Many follow up calls had to be made to remind them. Time allocated for the study was insufficient as the researcher was studying part time and collecting data at the same time. However the researcher tried to conduct the study within the time frame that was specified. The resources available to the researcher were also limited.

CHAPTER FOUR

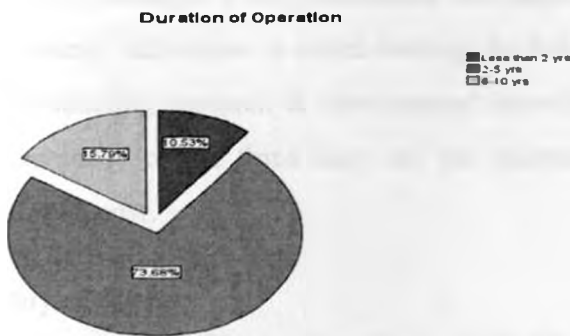
RESULTS, ANALYSIS AND DISCUSSIONS

4.1 Introduction

In this chapter the results of the findings are presented, analysed and discussed. The findings are summarised and presented in the form of proportions, means and tables. Consequently, the findings are analysed and interpreted in line with the objectives of the study which were: to determine the capabilities the firm exploits to gain advantage over competitors, to determine the underlying manufacturing strategy perspective and to determine the model of manufacturing strategy employed.

Of the 210 questionnaires distributed for this research, 114 useable questionnaires were returned giving a response rate of 54.29 percent, which was considered satisfactory for subsequent analysis. The respondents were asked to indicate for how long their organizations had been operational. From the research findings, it was established that 73.68% had been in operation for 2-5 years, 15.79 %for 6-10 years and 10.53 for less than 2 years. It was noted that there was none which had been in operational for over 10 years as shown in chart 4.1.1 below.

Chart 4.1.1 Duration of operation



Source: Research data (2012)

4.2 Evaluation on capabilities used by SMEs

The study sought to determine the capabilities the firms exploited to gain advantage over competitors using a scale of 1 to 5 (1-strongly disagree to 5-strongly agree).

4.2.1 Cost Capability

The respondents were asked to indicate to what extent cost-cutting operations related to their firms. The responses given are shown in table 4.2.1

Table 4.2.1 Cost capabilities

Indicators	N	Mean	Std. Deviation
Firm emphasizes on maximum material & capacity utilization to avoid wastage	114	4.53	.502
Fewer and standardized components are used in production	114	4.05	.829
Firm has large casual labour base to reduce production time	114	3.89	.791
The firm's production is in large volumes to reduce unit cost of products	114	3.84	.748
The firm occasionally conducts research & devpt exercises in an effort to understand & try meet its customer's needs	114	2.79	.897

Source: Research data (2012)

From the research findings, it was established that majority of the firms emphasize on maximum material & capacity utilization to avoid wastage as this had the strongest mean of 4.53. On the other hand, conducting research & development exercises had the weakest mean of 2.79. This implies that majority of the firms have not yet embraced this exercise as a means of cutting overall production cost.

4.2.2 Quality capability

The respondents were asked to indicate how much the quality improving operations related to their firms. The responses given are shown in table 4.2.2

Table 4.2.2 Quality capabilities

Indicators	N	Mean	Std. Deviation
Firm produces goods that meet the customer's requirements & specifications	114	4.37	.485
The firm is able to reduce defective products in subsequent production runs	114	3.53	.755
Management focuses on capturing customer emotional feedback about its products to drive improvement	114	3.37	.875
Management employs redesigning/reengineering processes to improve on its products features and characteristics	114	3.00	.862
Management conducts cross-functional training on staff to increase product knowledge on their production, benefits and features	114	2.68	.569

Source: Research data (2012)

From the research findings, it was established that most firms preferred to produce goods that met the customer's requirements & specifications as a way of improving their firm's quality standard. This is shown by the strong mean this indicator had of 4.37 Most firms also considered cross-functional training on staff as a means to increase product knowledge on their production, benefits and features was an operation that they could almost do without as it had the weakest mean of 2.68

4.2.3 Flexibility capability

The respondents were asked to indicate to what extent the operations for establishing flexibility related to their firms. The responses given are shown in table 4.2.3

Table 4.2.3 Flexibility capabilities

Indicators	N	Mean	Std. Deviation
Firm has capacity to produce large volumes of products when needed	114	3.26	.913
The organization has a wide variety of products in both single and multiple product lines	114	2.89	.916
The firm has trained staff on product design for easy transition during abrupt demand changes	114	2.79	.897
The organization has capacity to change operations to a new product line	114	2.74	.788
The organization has invested to machines that can produce different designs of products	114	2.42	.677

Source: Research data (2012)

From the research findings, majority of the firms had capacity to produce large volumes of products when needed as this had the strongest mean of 3.26 implying that they could only be flexible in terms of producing more if the market had a sudden demand increase. It was also established that most firms were not yet in a position to invest in machines that can produce different designs of products as this operation had the weakest mean of 2.42

4.2.4 Delivery capability

The respondents were asked to indicate to what extent operations taken to improve on delivery capability related to their firms. The responses given are shown in table 4.2.4

Table 4.2.4 Delivery capabilities

Indicators	N	Mean	Std. Deviation
Short and easy to manage processes are used to fasten the process as well as reduce the number of defects per production run	114	4.05	.224
Raw materials are bought in bulk to reduce time before production starts	114	3.58	.677
Suppliers deliver small lots of raw materials on a daily basis for efficient material planning	114	3.11	.856
Faster and up-to-date machines are used to reduce product time	114	3.05	.891
The firm has an in-house/outsourced inspection department for final product checks to reduce lead time and avoid sales returns	114	2.79	.836

Source: Research data (2012)

From the research findings, it was established that most organizations sought to shorten and fasten their processes as well as reducing the number of defects per production run as a means of trying to meet the deadline for product delivery. This is shown by the strong mean of 4.05 this indicator had. In contrast very few firms had in-house/outsourced inspection department for final product checks to reduce lead time and avoid sales returns as this had the weakest mean of 2.79

4.2.5 General evaluation on capabilities used in firms

The study sought to determine the most common capabilities the firms exploited to gain advantage over competitors using a scale of 1 to 5 (1-strongly disagree to 5-strongly agree). The responses given are shown in table 4.2.5

Table 4.2.5 Capabilities used to gain competitive advantage

Indicators	N	Mean	Std. Deviation
Cost Dimension	114	3.8211	.60051
Quality Dimension	114	3.3895	.41973
Delivery Dimension	114	3.3158	.36472
Flexibility Dimension	114	2.8211	.67384

Source: Research data (2012)

From the research findings, it was established that in overall cost dimension had the strongest mean of 3.8211 followed by quality with a mean of 3.3895 then by delivery with a mean of 3.3158 flexibility was the last dimension to be used to build on a capability for competition with a mean of 2.8211 This implies that most firms preferred to use cost cutting measures to lower their production cost and low cost products to attract customers and gain advantage over their competitors. Most firms as well had little or no investment on facilities and machines that could improve on their flexibility capability and as such this dimension is not a competing measure to these firms as of yet.

4.3 Evaluation on manufacturing strategy perspectives used by SMEs

The study sought to determine the underlying manufacturing strategy perspective employed by most organizations using a scale of 1 to 5 (1-strongly disagree to 5-strongly agree). Results are presented in this section.

4.3.1 Resource based strategy perspective

The respondents were asked to indicate how much the operations relating to resource based view on strategy applied in their organizations. The responses given are summarized in table 4.3.1

Table 4.3.1 Resource based strategies

Indicators	N	Mean	Std. Deviation
The span of processes is minimized during production to help deliver goods on time as promised	114	4.32	.467
Production delivery made easier by efficient processes	114	4.32	.656
The firm's products are ranked of best quality due to fewer defects received and sales returns	114	4.00	.564

Indicators	N	Mean	Std. Deviation
Firm's production is reliable due to its ability to accommodate demand changes	114	3.68	.865
The firm has control policies to reduce the number of defects during and after production	114	3.68	.925
Production cost is reduced by the investment made on firm's facilities, machines and equipments	114	3.58	.881

Source: Research data (2012)

From the research findings, it was established that most firms following the resource based strategy used efficient processes to make production delivery easier this is a reflection of the strong mean of 4.32 this indicator had. Most firms though still employing the resource based strategy, had little investment on facilities, machines and equipments to reduce production cost as this had the weakest mean of 3.58

4.3.2 Market based strategy perspective

The respondents were asked to indicate to what extent the operations relating to the market based view on strategy applied in their organizations. The responses given are shown in table 4.3.2

Table 4.3.2 Market based strategies

Indicators	N	Mean	Std. Deviation
Production focused on a particular product line	114	3.68	.802
Production only takes place in response to customer feedback mechanism on their requirements and specifications	114	3.47	.755
Research and devpt exercises are often conducted to improve products features and characteristics	114	3.26	.913
Production is aimed at satisfying a particular customer/ market segment	114	3.11	.791
The firm chooses on the market to operate in according to the potential the market has for good operation performance	114	2.95	.829
Organization produces products according to surveys conducted on what the customers want and need	114	2.95	.891

Source: Research data (2012)

The findings showed that majority of the firms following, market based strategy perspective had production focus on a particular product line. It was established that although these firms used the marked based strategy perspective, they rarely conducted surveys to find out what the customers wanted and needed this is indicated by the weak mean of 3.05 this indicator had.

4.3.3 General evaluation on manufacturing strategy perspectives

The study sought to determine the underlying manufacturing strategy perspective employed by most organizations using a scale of 1 to 5 (1-strongly agree to 5-strongly disagree). The responses given are shown in table 4.3.3

Table 4.3.3 Manufacturing strategy perspectives

Strategy	N	Mean	Std. Deviation
Resource based Strategy	114	3.9298	.34911
Market based Strategy	114	3.2368	.46505

Source: Research data (2012)

The findings determined that most firms under the study chose to employ the resource based perspective on manufacturing strategy as this is given by the stronger mean of the two indicators of 3.9298 this implies that most firms chose to align their operations resources and processes with the requirements of its markets rather than having the market requirements exploit the operation resources.

4.4 Evaluation of the model of manufacturing strategy employed by SMEs

The study sought to determine the model of manufacturing strategy employed. The level of relationship was to be determined by how the firms focus on each dimension in relation to the other dimension(s) it is able to compete on. The responses given are shown as correlations in table 4.4

Table 4.4 Correlations

		Cost dimension	Quality dimension	Flexibility dimension	Delivery dimension
Cost dimension	Pearson Correlation	1.000	-1.000**	-.489**	.489**
	Sig. (2-tailed)		.000	.000	.000
	N	114.000	114	114	114
Quality dimension	Pearson Correlation	-1.000**	1.000	.489**	-.489**
	Sig. (2-tailed)	.000		.000	.000
	N	114	114.000	114	114
Flexibility dimension	Pearson Correlation	-.489**	.489**	1.000	-1.000**
	Sig. (2-tailed)	.000	.000		.000
	N	114	114	114.000	114
Delivery dimension	Pearson Correlation	.489**	-.489**	-1.000**	1.000
	Sig. (2-tailed)	.000	.000	.000	
	N	114	114	114	114.000

** Correlation is significant at the 0.01 level (2-tailed).

Source: Research data (2012)

From the research findings shown on table 4.4, cost dimension was found to have a very strong negative correlation of -1.000 with quality strategy. This implied that if cost was selected it automatically ruled out selection of quality strategy and vice versa. Moreover, flexibility dimension was found to have a very strong negative correlation of -1.000 with delivery dimension. This also implied that selection of flexibility automatically ruled out selection of delivery dimension and vice versa. It was evident that at 95% confidence level the capabilities employed were statistically significant $p=0.000$ (high t-values, $p < 0.05$).

This inverse relationship is experienced across the table an indication of opportunity cost between dimensions.

Therefore this data can be relied upon to make conclusions that majority of the organizations under this study used the trade-off model of manufacturing capabilities as they mostly focused on exploiting a certain dimension for its capability to gain advantage over their competitors before turning focus on or considering another dimension.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

In summary, the response rate of the study was 54.29%. The research study utilized primary data obtained from a sampled listed of manufacturing SMEs. Questionnaires that consisted of both closed and open ended questions were used to obtain the primary data. The questionnaires were administered to staff in the sampled manufacturing SMEs. Intended beneficiaries of this study were manufacturing SMEs, researchers and academicians.

The research problem was as a result of the theory concept that manufacturing strategy formulation to a large extent was perceived to be an action for bigger companies with wider market scope and assured longer succession. Due to the nature and the size of Small scale firms they may not have defined strategies. Nevertheless they have some guidelines that shape up their operations and therefore implicitly having strategies. In this regard this study was used to establish how important it would be for Small and Medium scale firms to have implicit or defined strategies.

There were three aims of the study; to establish the capabilities firms exploited to gain advantage over competitors, to determine the underlying manufacturing strategy perspective and to determine the model of manufacturing strategy employed by small and medium scale enterprises (SMEs) in Kenya.

The findings in regards to the objectives set for the study were, most firms preferred to follow the resource based perspective on strategy implementation. Through this study it was determined that the cost dimension was mainly used to gain a competitive edge over other firms. Other capabilities used were quality, delivery and flexibility in that order. It was also established that majority of the SMEs had an inverse or indirect relationship between the four dimensions therefore most of them used the trade- off model to build on bases for their capabilities.

5.2 Conclusions

Based on the above findings the following conclusions can be made: There are four most common dimensions that firms can exploit to develop competing capabilities on: cost, quality, delivery and flexibility. Firms need to evaluate which dimension is most applicable with their operations and subsequently use it as a weapon to gain advantage over its competitors. Small and Medium enterprises (SMEs) like any other large scale firms require manufacturing strategies which will define these dimensions for efficient competing capabilities.

There needs to be a balance or a line of fit between the level of market requirements and the level of operation resource capability. Whether this fit is through the alignment of operations resources and processes with the requirements of its markets or the market requirements are moved to exploit operations resource capabilities. However, SMEs and other enterprises alike would be better placed following the resource based perspective as it weighs more on better operational performance.

Among the SMEs under this study, the trade- off model is still the most practiced model for prioritizing the available firm's capabilities. The emphasis these SMEs put on a capability at a time strengthens the model's proposition that no manufacturing system or unit can perform equally well and outstandingly enough to create competitive advantage across all capabilities. The firms need to step out of their comfort zone and try out the cumulative or the rigid flexibility models which allow the firm to build a foundation on a capability and pillar up the other capabilities as it expands its operations. This will probably yield better results in operational performance

5.3 Policy Recommendations

This study recommends that for small and medium scale enterprises (SMEs) in Kenya to be competitive, they need to re-evaluate their capabilities. Benchmarking should be used to borrow best practices on the best strategies to cut cost and improve on other capabilities. Moreover more funds should be sourced in order to pursue a few or all strategies at the same time thus employing other models of competitive priorities.

This could be done by acquiring loans from financial institutions such as banks, joining and benefiting from SACCOs and other micro finance institutions.

5.4 Limitations of the study

The researcher encountered quite a number of challenges related to the research and most particularly during the process of data collection. During the study the researcher traveled for long distances before accessing different manufacturing SMEs to access the respondents. In addition some of the respondents had to be pushed to assist with data while others declined entirely to respond to the questionnaires. Many follow up calls had to be made to remind them. Time allocated for the study was insufficient as the researcher was studying part time and collecting data at the same time. However the researcher tried to conduct the study within the time frame that was specified. The resources available to the researcher were also limited.

5.5 Suggestions for further research

Arising from this study, the following directions for future research in Operations were recommended: First, this study focused on the small and medium scale enterprises (SMEs) in Kenya. Therefore, generalisations cannot adequately be relied upon based on their geographical locations and markets they serve. Based on this fact among others, it is therefore recommended that a narrow based study should be done for instance SMEs in Nairobi. Similar surveys to this can be replicated in a few years to come to assess if the factors have changed as more SMEs are established in Kenya.

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APPENDICES

APPENDIX I: MANUFACTURING INDUSTRIAL CATEGORIES

- Agro-based manufacturing
- Pulp and paper production
- Wood and wood products processing
- Textile and clothing manufacturing
- Fish processing
- Chemical processing
- Capital goods and spare parts production
- Ceramics and glass processing
- Iron and steel processing
- Electrical and electronic products manufacturing
- Mechanical products manufacturing
- Construction equipment production

APPENDIX II: LETTER OF INTRODUCTION

Dear Respondent,

REF: REQUEST FOR RESEARCH DATA

I am a student at the University of Nairobi doing a research project as part of the requirements for the award of Masters degree in Business Administration (MBA).

The research project aims at finding out how the capabilities and resources available to the firm determine the manufacturing strategy perspective and manufacturing model adopted.

I kindly request you to fill in the attached questionnaire to generate data required for this study. The information collected will strictly be used for academic purposes and will be treated with confidentiality. Your name or that of your organization will not be mentioned in the report, unless, otherwise agreed.

A copy of the research findings will be made available to you upon request.

Your assistance and cooperation will be highly appreciated.

Thank you in advance.

Rhoda Nduku Musyimi (Student)

D61/63276/2010

University of Nairobi

Mr. Michael Mwangi (Supervisor)

Lecturer, University of Nairobi

APPENDIX III: QUESTIONNAIRE

This questionnaire is to collect data for purely academic purposes. All information will be treated with strict confidence.

Answer all questions as indicated by either filling in the blank or ticking the option that applies.

PART A: Demographics

1. Name of firm (*optional*).....

2. How long has the organization been operational?
 - Less than 2 years
 - 2-5 years
 - 6-10 years
 - Over 10years

Part B: Manufacturing Strategy Perspective

3. To what extent do you agree with the following statements with regards to how the management decides on its production? (Please tick in the brackets provided where appropriate)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a) Production is focused on a particular product line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Production delivery is made easier by the efficient processes employed by the firm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Production is aimed at satisfying a particular customer(a market segment) eg based on age, sex, class, lifestyle etc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Production cost is reduced by the investment made on the firm's facilities, machines and equipments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Production only takes place in response to customer feedback mechanism on their requirements and specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) The firm's production is reliable due to its ability to accommodate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
demand changes					
g) Organisation produces products according to surveys conducted on what the customers what and need	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) The firm's products are ranked of best quality due to fewer defects received and sales returns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Research and development exercises are often conducted to improve products features and characteristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) The firms has in place control policies to reduce the number of defects during and after production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) The firm chooses on the market to operate in according to the potential the market has for good operation performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) The span of process is minimised during production to help deliver good on time as promised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART C: Competing on Capabilities

4. To what extent do you agree with the following statements with regards to various operations in your department? (Please tick in the brackets provided where appropriate)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a) The firm emphasises on maximum material & capacity utilisation to avoid wastage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The firm produces goods that meet the customers' requirements & specifications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The firm has capacity to produce large volumes of products when needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Raw materials are bought in bulk to reduce time before production starts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) The firm's production is in large volumes to reduce unit cost of products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) The firm is able to reduce defective products in subsequent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
production runs					
g) The organisation has a wide variety of products in both single and multiple product lines	[]	[]	[]	[]	[]
h) Suppliers deliver small lots of raw materials on a daily basis for efficient material planning	[]	[]	[]	[]	[]
i) The firm has a large casual labour base to reduce production time	[]	[]	[]	[]	[]
j) Management focuses on capturing customer emotional feedback about its products to drive improvement	[]	[]	[]	[]	[]
k) The organisation has capacity to change operations to a new product line	[]	[]	[]	[]	[]
l) Faster & up-to-date machines are used to reduce production time	[]	[]	[]	[]	[]
m) Fewer and standardised components are used in production	[]	[]	[]	[]	[]
n) Management conducts cross-functional training on staff to increase product knowledge on their production, benefits and features	[]	[]	[]	[]	[]
o) The organisation has invested in machines that can produce different designs of products	[]	[]	[]	[]	[]
p) The firm has an in-house/outsourced inspection department for final product checks to reduce lead time and avoid sales returns	[]	[]	[]	[]	[]
q) The firm occasionally conducts research & development exercises in an effort to understand & try meet its customers' needs	[]	[]	[]	[]	[]
r) Management employs redesigning/reengineering processes to improve on its products features and characteristics	[]	[]	[]	[]	[]
s) The firm has trained staff on product design for easy transition during abrupt demand changes	[]	[]	[]	[]	[]
t) Short and easy to manage processes are used to fasten the production process as well as reduce the number of defects per production run	[]	[]	[]	[]	[]

PART D: Model of competitive priorities

3 In any organization there are four key areas of focus with regard to manufacturing strategies, this are mainly ;Cost, delivery, quality and flexibility

Given a chance how would you rank them in terms of emphasis by your organization

(starting with most emphasized)

- 1. _____
- 2. _____
- 3. _____
- 4. _____

4 If your organization were to give up on one or two competitive dimension which one would it be and why?

THANK YOU!