

**OPERATIONS STRATEGY AND PERFORMANCE AMONG MOTOR  
VEHICLE ASSEMBLERS IN KENYA**

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Requirements of the Award of Master in Business Administration, School of  
Business, and University of Nairobi**

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**DECLARATION**

This research project is my original work and has not been submitted for a degree award at the University of Nairobi or any other university.

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## **DEDICATION**

I dedicate this work to my wife Marysheila and my children Sekai and Amara, from you I draw my strength and inspiration.

## **ACKNOWLEDGEMENT**

I am grateful and thankful to the almighty God for good health and for bringing me this far.

To my supervisors, I sincerely thank you for their guidance, encouragement and patience in reading, correcting, re-reading and refining this work.

Special thanks also go to my lecturers and fellow students in the MBA class for their ideas, support and encouragement during the study.

Finally, I would like to recognize the invaluable contribution from my colleagues in the office and friends in general.

May God bless you all.

## **ABSTRACT**

Competitiveness of organizations is mostly dependent on their ability to perform well in dimensions such as cost, quality, delivery, dependability and speed, innovation and flexibility to adapt itself to variations in the environment. This study was motivated by the need to establish the effect of the operations strategies on the performance of the motor vehicle assemblers. The study collected data using semi-structured questionnaires and interviews from the motor vehicle assemblers in Kenya. The data was analysed using both descriptive statistics and the inferential statistics. The study found that motor vehicle assemblers are facing stiff competition which has made them adopt some operations strategies to remain competitive in the market. The companies have adopted strategies on quality production, costs control, reliability, flexibility and innovativeness. The study found that the strategies have greatly improved profits, efficiency, quality of services to the customers, market share and the employee satisfaction. However, the companies face challenges such as the second hand imports, competition, delivery constrains, unfriendly policies and regulations, long lead times, high inventory cost among others.

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## ABBREVIATIONS

AMT	-	Advanced Manufacturing Technology
AVA	-	Associated Vehicle Assemblers
CKD	-	Complete Knocked Down Kits
CMC	-	Cooper Motor Corporation,
COMESA	-	Common Markets for East and Southern African Countries
EA	-	East Africa
GM	-	General Motors
GMEA	-	General Motors East Africa
KVM	-	Kenya Vehicle Manufacturers
R & D	-	Research and Development
SPSS	-	Statistical Package for Social Sciences

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background to the Study**

The twin processes of trade liberalization and globalization have brought about a scenario where today's business environment is dominated by competition that has continued to result in diminishing defined markets. Manufacturing success and survival is becoming more difficult to sustain and as a result, creating new forms of competitive advantage is becoming a major area of concern for management as the competitive environment continues to change rapidly and unpredictably. Market uncertainty and frequent introductions of new products has created a growing need for responsive manufacturing systems (Collins, 1993).

Competitiveness of organizations is mostly dependent on its ability to perform well in dimensions such as cost, quality, delivery, dependability and speed, innovation and flexibility to adapt itself to variations in demand (Lee, 2003). Organizations compete in different ways and some of them decide to carry out trade-offs in their competitive dimensions in order to emphasize on one or two key areas of strength as explained by the trade-off model that was first introduced by Skinner (1969).

#### **1.1.1 Operations strategy**

Strategy refers to a plan of action designed to achieve a particular goal. In modern economies, global rivalry is an important factor that corporate management does not put in the back burner. This increased level of competition requires that top leadership involves department heads in strategy formulation sessions. As a result, strategy identification and formulation remains a collective effort, making sure that corporate executives hear the feedback of department chiefs, segment heads and business unit leaders (Hill, 1993).

According to Slack and Lewis (2000), operations strategy is 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 and also as a tool that helps to define the methods of producing goods or a service offered to the customer.

The objective of operations strategy in operations management processes and operations management system is to make fundamental plan for the planning process coordinated by the larger organizational goals. The purpose of operations strategy is to support and complement the company's overall strategic objectives. It is the basic problem of the system of production, operation processes and production operations. This includes product selection, plant location, facility layout and production. On the other side operations of organization and elements of competitive advantage forms the nature of the operations strategy of the basic fundamental plan, including long-term goal of the system of production, operation processes and production operations, the direction and focus on the basic course of action, the basic steps and a series of guiding ideology and decision-making principles. In general operations strategy can be viewed as a function of the overall strategy system which guides management solve, support and cooperate with enterprises to gain competitive advantage in the market within the field of operations management functions (Johne, 1999)

### **1.1.2 Kenya's Motor Vehicle Assembly Industry**

The Automotive industry in Kenya is primarily involved in the retail and distribution of motor vehicles. There are a number of motor vehicle dealers operating in the country, with the most established being Toyota (East Africa), Cooper Motor Corporation, General Motors East Africa, Simba Colt (now Simba Corporation) and DT Dobie. There are also three vehicle assembly plants in the country, which concentrate on the assembly of pick-ups and heavy commercial vehicles. The established dealers face intense competition from imported second-hand vehicles, mainly from Japan and United Arab Emirates. These imports now account for about 70% of the market (KMI Reports, 2000-2006).

The last decade witnessed a significant decline in the number of new vehicles sold in the country. There has been a steady recovery in the last four years, but the numbers achieved still fall far short of the numbers recorded a decade ago. In 2004, the leading

motor vehicle assemblers recorded sales of 9,979 units (Makembo, 2011). The Kenya Motor Industry Association (KMI), the representative body of the corporate participants in the motor industry, has been lobbying hard to reverse this trend. Some of these measures have helped the industry recover from its lowest point in 2000, when only 5,869 units were sold. On their part, the companies themselves have become more innovative in responding to customer needs. Some of the measures that KMI has been advocating include: implementation of strict criteria on importation of second hand vehicles, incentives to promote local assembling of commercial vehicles and export incentives aimed at encouraging car manufacturers to expand operations in the region (Makembo, 2011).

The motor vehicle assembly industry in Kenya consists of four distinct categories of participants. The first category consists of the three assemblers: Kenya Vehicle Manufacturers (KVM), Associated Vehicle Assemblers (AVA), and General Motors East Africa (GMEA). The first two firms are contract assemblers while General Motors (EA), is a franchise holder as well as an assembler. GMEA is the only assembler that does not contract assembly services to anyone else. All of the assemblers have a government shareholding together with some of the major franchise holders in Kenya. The second category consists of 13 franchise holders, better known in Kenya as importers of the completely knocked- down- kits (CKDs). They hold licenses to import and assemble and distribute motor vehicles on behalf of principle car manufacturers in Japan France, Italy, United Kingdom, Germany and others (Mwangi, 2007).

The third category is the auto ancillary sub sector comprising a variety of independent SMEs who supply the industry with assembly and replacement parts. The fourth category consists of body fabricators who play quite a vital role in subcontracting in the motor vehicle industry in Kenya. The service and repair sub-sector constitutes a fifth category that, while vital for the industry, is not directly linked into the assembly or auto ancillary sub sectors. In Kenya, this latter category employs perhaps, the largest number of the small enterprise workers in the motor vehicle industry (Kenya Association of Manufacturers, 2006 (Mwangi, 2007).

## **1.2 Statement of the Problem**

An effective manufacturing strategy must take into account the distinctive competencies of a firm that will give it a competitive advantage over its competitors. However, there has been a heated debate concerning the parameters of performance that are critical to an organization between those who argue that a manufacturing organizations can excel in all the dimensions of competitive priorities and those who oppose saying that organizations ought to compete only on those dimensions they feel strong in.

Previous studies have been conducted in Kenya on operations strategy, for example, Mbeche and Nyamwange (2003) conducted a study on the manufacturing strategies pursued by large manufacturing firms in Kenya as a way of remaining afloat in the turbulent global environment. This study found out that regardless of a company's characteristics, in order for companies to gain and maintain competitiveness they should pursue the right strategies, which include, high quality, low cost, time/speed, innovativeness and flexibility. Although the study talked about manufacturing strategies it did not look at the operations strategies among motor vehicle assemblers.

Ndungu et al, (2008) conducted a study which indicated that the slow growth in the motor vehicle assembly industry in Kenya has been attributed to various factors including; competition from second hand dealers, environmental challenges, and a reduction in spending by key clients, especially the corporate sector, which due to market place dynamics now keenly monitor spending. This study also states that these challenges are expected to affect the market share of the automotive industry if adequate measures are not taken. The study did not focus on the operations strategies and performance of the industry.

Another study conducted by Makembo (2011), indicated that the Kenyan motor vehicle market has developed some peculiarity because of its skewed characteristics which allow for the importation of cheap used vehicle from different countries. Cheap used vehicle imports are getting even more popular to Kenyan motorists because they offer low income households the possibility of vehicle ownership and a high level of personal mobility, increasing social welfare benefits. Although this study focused on motor

vehicle market development, the researcher did not look at the operations strategies in market development.

However, little has been done, specifically addressing the operations strategies in the motor vehicle assembly industry, in Kenya. Previous studies have mainly focused on the manufacturing and marketing in the industries. This research study sought to survey the operations strategies of the motor vehicle assembly industry in Kenya, by answering the following questions: what are operations strategies and performance among motor vehicle assemblers' in Kenya? Do motor vehicle assembly companies prioritize operations strategies? What challenges are faced by motor vehicle assembly industry in implementation of operations, in Kenya? What is the relationship between Operation strategies and performance?

### **1.3 Research Objectives**

The objectives of the study were;

- i. To establish the Operations strategies among motor vehicle assemblers in Kenya.
- ii. To determine whether the motor vehicle assembly industry companies prioritize operations strategies
- iii. To establish the challenges faced by motor vehicle assembly industry in implementation of operations, in Kenya
- iv. To determine the relationship between Operation strategies and performance among motor vehicle assemblers in Kenya.

### **1.4 Value of the Study**

The study is a further contribution to research work in the motor vehicle industry. It adds to the already existing body of knowledge. The result of this study may be of use to the following:

Firstly to the industry, this study will provide an insight into the industry and provide vital information necessary for decision making.

Secondly, it will create awareness on how operation strategies will be beneficial to the future organizational development of players in the motor vehicle manufacturing industry.

Thirdly, this study will get a deeper understanding of the sector to be able to come up with the necessary policy guidelines and regulations.

And lastly, academicians will benefit from the study as it will not only present a source of reference, but also provide a platform for further research.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents literature related to the motor vehicle industry .It consists of the following sub-sections; literature review, operations strategy, cumulative model of competitive priorities, dimensions of competitive priorities, competitive priorities and operations.

Slack and Lewis (2002) assert that a company may try to articulate its position in the market in a number of ways. It might compare itself with a competitor, or alternately, it might associate with the needs of a particular customer group. Either way they finish up defining market positions in terms of a number of competitive priorities. Krajewski and Ritzman (2004) define competitive priorities as the operating advantages that the firm needs to outperform competitors. A firm is composed of many processes that must be coordinated to provide the overall desirable outcome for the customer. A customer-driven operations strategy reflects a clear understanding of the firm's long-term goals as embodied in its corporate strategy. It also requires a cross-functional effort by marketing and operations to understand the needs of each market segment and to specify the competitive priorities.

### **2.2 Operations strategy**

An organization's operations function is concerned with getting things done; producing goods and/or services for customers. All business organizations are concerned with how they will survive and prosper in the future. A business strategy is often thought of as a plan or set of intentions that will set the long-term direction of the actions that are needed to ensure future organizational success. However, no matter how grand the plan or how noble the intention, an organization's strategy can only become a meaningful reality, in practice, if it is operationally enacted (Barney, 1991).

According to Skinner (1969), an organization's operations are strategically important precisely because most organizational activity comprises the day-to-day activities within



the operations function. 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 an organization's strategy and its operation is a key determinant of its ability to achieve long-term success or even survival. Organizational success is only likely to result if short-term operations activities are consistent with long-term strategic intentions and make a contribution to competitive advantage. The relationship between operations and the other business functions is similarly important. The objective of the operations function is to produce the goods and services required by customers whilst managing resources as efficiently as possible. This can lead to conflicts within an organization. Strategy can be considered to exist at three levels in an organization;

Firstly, there is the corporate level strategy which is the highest level of strategy. It sets the long-term direction and scope for the whole organization. If the organization comprises more than one business unit, corporate level strategy will be concerned with what those businesses should be, how resources (e.g. cash) will be allocated between them, and how relationships between the various business units and between the corporate centre and the business units should be managed. Organizations often express their strategy in the form of a corporate mission or vision statement (Slack & Lewis, 2002).

Secondly, there is Business level strategy primarily concerned with how a particular business unit should compete within its industry, and what its strategic aims and objectives should be. Depending upon the organization's corporate strategy and the relationship between the corporate centre and its business units, a business unit's strategy may be constrained by a lack of resources or strategic limitations placed upon it by the centre. In single business organizations, business level strategy is synonymous with corporate level strategy (Hill, 1993).

The third level of strategy is the functional level strategy: The bottom level of strategy is that of the individual function (operations, marketing, finance, etc.) These strategies are concerned with how each function contributes to the business strategy, what their

strategic objectives should be and how they should manage their resources in pursuit of those objectives (Hill, 1993).

### **2.2.1 Operations and Performance**

The strategy literature has also proposed a direct link between strategy and a firm's performance. The idea that strategy supports a firm's performance has been the focus of several studies (Prajogo and Sohal, 2006). Some of the studies have examined several individual dimensions of strategy on firm's performance (White, 1996). A quality strategy that allows a firm to achieve both high design and conformance quality will lead to the attainment of a higher reputation in the market place, cost reduction, and higher productivity that can translate into higher sales growth and increased market share.

A low cost strategy leads to improvements in efficiencies that a firm can use to reduce its price and all things being equal achieve an increase in sales growth and market share. A firm that develops a strategy that allows it to achieve volume and mix flexibility while keeping costs low and quality high will be able to respond faster to market changes and thus achieve higher performance. And finally, a firm with reliable and on-time deliveries can expect greater customer satisfaction that can potentially lead to increased sales growth and market share (Prajogo and Sohal, 2006)

### **2.4 Cumulative Model of Competitive Priorities**

Nakane (1986) put forward the cumulative model first. He proposed that Japanese enterprise followed a pre-arrange sequence in the development of competitive capability. Similar to Hall's research, he suggested that manufacturers should pursue a step-wise progression through the capabilities, which are offered as a typical goal progression: quality, dependability, cost, and then flexibility. In other words, firms should first concentrate on the quality before the realization of the progressive capability objective (Hall,1987). As discussed in cumulative model perspective, modern manufacturing systems allow for improvement in more than one manufacturing capabilities which in a general way states that improvement in certain capabilities can amplify certain other capabilities (Schmenner & Swink, 1998).

In this perspective, the cumulative model provides a distinct approach to explain relationships between competitive capabilities. The capability to produce at a low cost could be supported by achieving good performance on other capabilities. Thus, depending on the sequence and the emphasis placed on the improvement of different capabilities, successful sequences of supportive strategic capabilities are so-called performance improvement paths (Clark, 1996: and Hayes & Pisano, 1996).

## **2.5 Competitive Priorities and Operations**

The consideration of customer's needs has particular significance in shaping the objectives of all operations in a firm. The fundamental purpose of operations is to create goods and services in such a way that meets the needs of the customers. Whatever customers find important, therefore, the operation should also regard as important. If customers for a particular product or service prefer low prices to wide range, then the operation should devote more energy to reducing its cost than to increasing the flexibility which enables it to provide a range of products or services. The needs and preferences of customers shape the importance of operation objectives within the operation (Imai, 1986). Slack (2007) advises the application of the Sandcone theory in operations. This theory holds that dimensions in competitive priority should be prioritized in a particular order. Building a stable Sandcone needs a stable foundation of quality, upon which one can build layers of dependability, speed, flexibility and cost. This theory suggests that moving on the second priority for improvement does not mean dropping the first and so on. According to the theory, the first priority should be quality, since this is a precondition to all lasting improvement. Only when the operation has reached a minimally acceptable level in quality should it then tackle the next issue, that of internal dependability. Importantly though, moving on to include dependability in the improvement process will actually require further improvement in quality. Once a critical level of dependability is reached, enough to provide some stability to the operation, the next stage is to improve quality and dependability further.

A firm can increase quality and speed with which goods and services are developed without increasing costs. One way of doing this is to identify and eliminate all non-value-

added activities. Poorly designed production equipment and process layouts that lead to worker injuries also contribute to waste. Time is also wasted when managers and professionals attend meetings, write and then revise reports, and exchange memos. Waste can also be found in the way a firm designs, develops and supports products (Assink , 2006).

## **2.6 Dimensions of Competitive Priorities**

Over the years, various contributions have been made as to what constitutes competitive priorities. Competitiveness of manufacturing industries is mostly dependent on its ability to perform well in dimensions such as cost, quality, delivery, dependability and speed, innovation and flexibility to adapt itself to variations in demand (Carpinetti, Gerolamo, & Dorta, 2000). While alignment of the manufacturing function with strategic priorities is core to competitiveness, the continuous improvement of the manufacturing function plays a very important role in the quest of competitiveness in the long run. Four widely accepted competitive priorities are cost, delivery, quality and flexibility. Phusavat and Kanchana (2008), identified the following competitive priorities: quality, cost, delivery, flexibility, customer-focus and innovation which have been adopted in this study.

### **2.6.1 Quality**

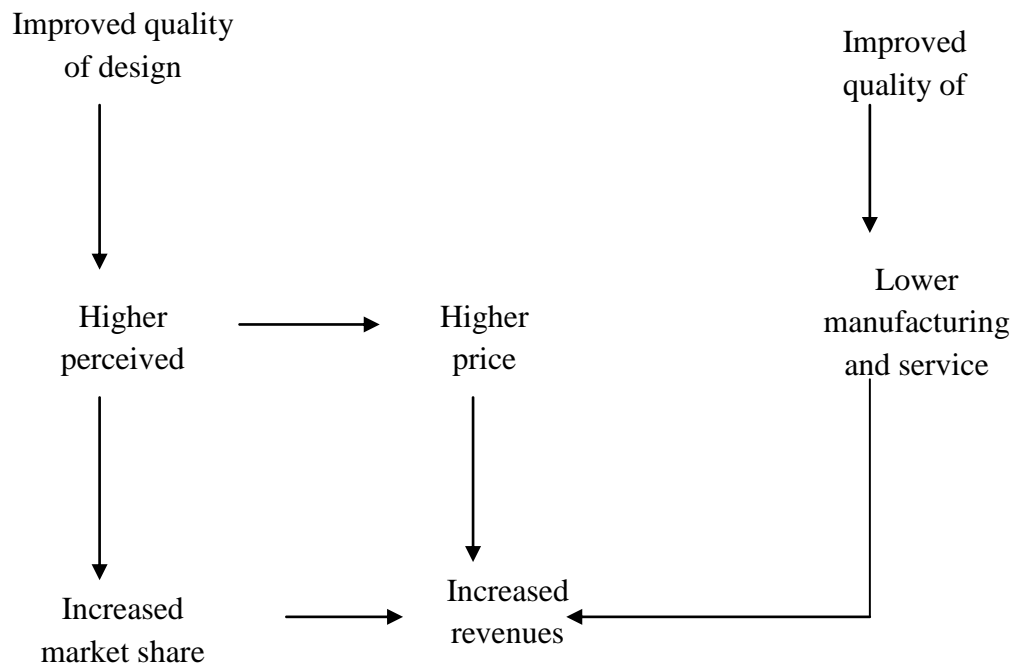
Quality has proved to be an ever mutating concept, partly because people view quality in relation to differing criteria based on their individual roles in the production-marketing value chain. Additionally, the meaning of quality continues to evolve as the quality profession grows and matures. Neither consultants nor business professionals agree on a universal definition. According to Dale (2003), quality possesses various characteristics. He observes that quality is not negotiable and an order, contract or customer which is lost on the grounds of non-conforming product and / or service quality is much harder to regain than one lost on price or delivery terms. In a number of cases, the customer could be lost forever; in simple terms the organization has been outsold by the competition. Secondly, quality is all-pervasive. There are a number of single focus business initiatives which an organization may deploy to increase profit. However, with the improvements made by companies on their mode of operation, reduction in monopolies, government

legislation, deregulation, changes in market share, mergers, takeovers, collaborative joint ventures, there is less distinction between companies than there was some years ago. Third, quality increases productivity.

Nyamwange (2003) found that quality affects operations of manufacturers. He found that the quality of raw materials is encountered when procuring raw materials from outside the country and that lack of skilled human resource hinders the pursuit of quality. He asserts that systems have to be set to have the right quality but if the senior management cannot support this, it becomes impossible.

Cost, productivity and quality improvements are complimentary and not alternate objectives. Fourthly, quality leads to better performance in the market place. Quality is an important source of competitive advantage; the net effect of improved quality of design and conformance is increased profits as illustrated in Figure 1 below

**Figure 2. 1 Quality and Profitability**



Source: Adapted from: The PIMS Letter on Business Strategy, no.4 (Cambridge, MA; Strategic Planning Institute, 1986)

A product's value in the marketplace is influenced by the quality of its design. Improvements in design will differentiate the product from its competitors, improve a firm's quality reputation, and improve the perceived value of the product. These factors allow the company to command higher prices and achieve a greater market share, which in turn lead to increased revenues that offset the costs of improving the design. Phusavat and Kanchana (2007) assert that an organization that is committed to quality must apply it at six levels: low-defect rate, performance quality, product durability, environmental aspect, certification and product reliability. Customer-driven performance standards should be used as bases for goal setting, problem solving, performance appraisal, incentive compensation, non financial rewards, and resource allocation. At the process level, organizational units are classified as functions or departments such as marketing, design, product development, operations, finance and purchasing.

### **2.6.2 Cost**

Slash and Lewis (2002) define cost as any financial input to the operation that enables it to produce its products and services. Firms choose to compete on either price or on things other than price. To companies that compete directly on price, cost will be clearly their major performance objective. The lower the cost of producing their products and services, the lower can be the price to their customers.

According to Hill (1993), costs can be categorized into three broad parts: Operating expenditure, Capital expenditure and Working capital. Operating expenditure are the financial inputs to the operation needed to fund the ongoing production of product and services. This category includes various other dimensions. Labour costs entail the costs of employing people with particular skills which vary between different areas in any country. Labour costs can be expressed in two ways. The 'hourly cost' is what firms have to pay workers on average per hour. The 'unit cost' is an indication of the labour cost per unit of production (Slack, Chambers & Johnston, 2007).

A study conducted by Nyamwange, (2003) found that cost is one of the major challenges faced by manufacturing industries in designing, and implementing operations strategies. This study found that constant price fluctuations make it hard to control costs, poor

infrastructure in Kenya makes it hard to transport raw materials and that the cost of power, petroleum products and fuel materials makes the production costs very high.

Inventory costs represent a significant population of total production costs. The higher the average inventory level, the higher the total production cost. Typically, inventory related costs include item costs, ordering (process setup) costs, holding costs, and stock out or shortage costs (Schroberger & Knod, 1997). Item costs are the purchase prices of things a firm buys or the cost of something it manufactures. Ordering costs are the costs incurred when placing an order for an item purchased from a supplier. Process setup costs include those costs incurred when changing the production process from one to another. These costs tend to be reasonably constant each time they are incurred for a particular product regardless of the quantity purchased or manufactured. Holding costs are the expenses incurred when items are kept in inventory.

Secondly, capital expenditure includes all the financial inputs to the operation that funds the acquisition of the facilities which produce its products and services. It includes the money invested in acquisition of land, buildings, machinery, vehicles and other fixtures. Brush (1999) observes that usually the funding for facilities is in the form of a lump sum ‘outflow’ investment followed by a series of smaller inflows of finances, in the form of either additional revenue or cost savings.

Third is the working capital. This includes all the financial inputs needed to fund the time difference between regular outflows and inflow of cash. In most operations, payments must be made on the various types of operating expenditure which are necessary to produce goods and services before payment can be obtained from the customers (Riise et al, 2007).

### **2.6.3 Flexibility**

Zhang et al. (2003) define flexibility as “the ability of the organization to manage production resources and uncertainty to meet various customers’ requests”. In the same sense, Kathuria and Partovi (2000) state that “flexibility gives manufacturing plants the ability to introduce new designs or new products into production quickly, adjust capacity

rapidly, customize products, handle changes in the product mix quickly, and handle variations in customer delivery schedule”.

According to Stevenson and Spring (2007), every manufacturing firm has to be flexible by meeting its customer demands and coping with changes in uncertain business environment which is characterized by increasingly sophisticated consumers that demand customized products and short lead times. Thus, flexibility should be considered at each functional strategy level and at the corporate strategy level for the whole company. Likewise, it could be concluded that different situations of uncertainty and various environmental factors should be managed based on specific types of flexibility in order to improve the performance of a given firm.

Nyamwange (2003) found that some of the companies have small capacity installed and therefore the only flexibility they have is to work overtime during the weekends. To attain and maintain flexibility is very expensive and some customer specifications that were not anticipated may be too hard to meet, at very short notices.

#### **2.6.4 Reliability**

The two main dimensions of delivery performance are delivery reliability and delivery speed (Ward & Durray, 2000). Delivery reliability is sometimes referred to as dependability or on-time delivery and concerns the ability to deliver according to a promised schedule or plan. Noori and Radford (1995) observe that although dependability may revolve around delivery, this is only one aspect. Another is honoring legal and moral contracts with customers as well as suppliers.

Dependability is the other half of total delivery performance along with delivery speed. For example, theoretically, one could achieve high dependability merely by quoting long delivery times. In which case the difference between the expected delivery time and the time quoted to the customer is being used as an insurance against lack of dependability within the operation. However, firms that try to absorb poor dependability inside long lead-times can finish up being poor at both (Krajewski & Ritzman, 2004). There are two reasons for this. First, delivery times tend to expand to fill the time available, Attempting



to discipline an operation to achieve delivery in two weeks when three are available is unambitious and allows the operation to relax its efforts to use all the available time. Second, long delivery times are often as a result of slow internal response, high-work-in-progress, and large amounts of non-value-added time. All these tend to cause confusion, complexity and lack of control, which are the root causes of poor dependability. Good dependability can often be helped by fast throughput, rather than hindered by it.

Dependability = due delivery time – actual delivery time

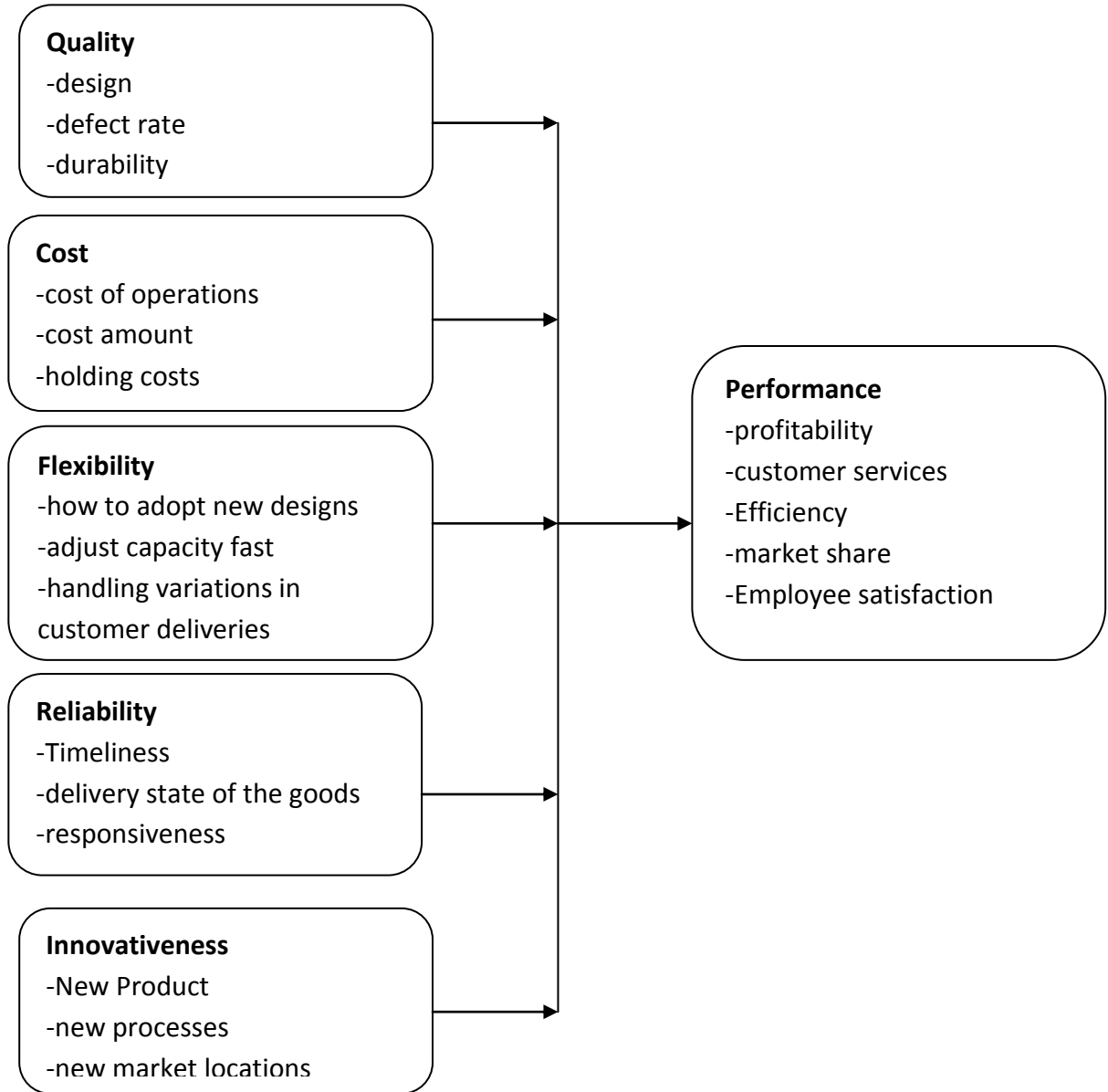
### **2.6.5 Innovativeness**

In today's highly dynamic and competitive business environment, companies are exposed to severe challenges with meeting the ever-increasing market and customer needs and expectations, coping with sophisticated regulations and requirements, and facing technological obsolescence. According to Assink (2006), innovation has a connotation of newness, success, and change and can be defined respectively as the generation, development, and adaptation of an idea or behavior, new to the adopting organization. In another view, Kumar et al. (2000), define innovation as something that is invented for the first time and is a commercial success.

Johannessen et al., (2001) categorize innovation into three types; namely: product innovation, process innovation, and market innovation. According to Langley et al. (2005), as opposed to minor innovations that comprise small-scale alterations to existing products, major product innovations involve a completely new set of attributes, form a new product category, and induce behavioral changes on behalf of the users. Although new products have been regarded as the "cutting edge" of innovation in the marketplace (Tidd et al., 2005), innovations in processes have proven to have a significant strategic effect in competitiveness. According to Johne (1999), innovation provides the means for safeguarding and improving quality and for saving costs. He also maintains that process innovation is important in both the supply of the core product as well as in the support part of any offer.

## 2.7 Conceptual framework

The study has hypothesized the relationship of the variables as shown in the following diagram. These variables include quality, cost, flexibility, reliability, innovativeness and performance.



**Independent variables**

**Dependent variable**

Source; Author 2013

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter is a blueprint of the methodology that was used by the researcher to find answers to the research questions. In this chapter the research methodology is presented in the following order, research design, target population, sampling procedure, data collection methods, instruments of data collection and the pilot study. The section also explains how data was analyzed to produce the required information necessary for the study.

### **3.2 Research Design**

This study adopted a survey research design. This is simply a data collection tool for carrying out survey research. Pinsonneault and Kraemer (1993) defined a survey as a means for gathering information about the characteristics, actions, or opinions of a large group of people. Surveys can also be used to assess needs, evaluate demand, and examine impact (Salant & Dillman, 1994). Surveys are capable of obtaining information from large samples of the population. “They are also well suited for gathering demographic data that describe the composition of the sample” (McIntyre, 1999, p. 74).

This study used face to face interviews as well as questionnaires. The questionnaires were both open ended and closed.

### **3.3 Population.**

The target population for this study was the motor vehicle assembly firms. These firms include; Toyota East Africa, Cooper Motors Corporation, General Motors East Africa, Simba Colt Motors and DT Dobie. According to Kenya Motor Industry report, July 2013, number of motor vehicle assembly firms present was 5, (KMI 2013). The respondents from these firms were the senior staff from Engineering, Manufacturing, Finance, Sales and After-sales departments. This was because the departments are actively involved in the operations strategies of the firms. The researcher distributed two questionnaires per firm.

### **3.4 Data Collection**

Primary data was collected using questionnaires that were developed based on the objectives of the study. The questionnaire items were both open ended as well as closed ended. The closed ended questions allowed for specific type of responses while in the open ended type the respondents may state responses as they wish. The questionnaires were administered to the respondents through drop and pick method and also by email. They were given time to fill, after which the filled up questionnaires were collected after a period of three days. The questionnaire was divided into four sections, i.e. Section A, B, C, and D. Section A collected data on respondents' general information e.g. their position, department and their experience. Section B addressed objective one, which is the operations adopted by Motor vehicle assembly industry assembly in Kenya, Section C addressed objective two, which is to determine whether the motor vehicle assembly industry companies prioritize operations strategies, while Section D addressed objective three, which is to establish the challenges faced by motor vehicle assembly industry in implementation of operations and also the relationship between operations strategies and performance.

### **3.5 Data Analysis**

Completed questionnaires were edited for completeness and consistency. Data collected was then analyzed both qualitatively and quantitatively. Descriptive statistics were used to analyze the data. They consisted of mean scores, standard deviations, frequencies and percentages. Also, inferential statistics e.g. correlation were used. Correlation was used to test the relationship between the quality, cost, flexibility, reliability and innovativeness. The study used a chi-square to test whether the factors have identical distribution functions with respect to performance.

## **CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS**

### **4.1 Introduction**

This chapter presents the data findings and presentations. The chapter has demographic information, the level of competition, findings on prioritization, adoption of strategies, strategies used by the motor vehicle assemblers, challenges facing motor vehicle assemblies, performance of the motor vehicle assemblers and the correlations of the operations strategies with the performance of the motor vehicle assemblers.

### **4.2 Demographic information**

The respondents were asked to indicate the names of the motor vehicle assemblers they worked for. The study found that more respondents were from Generals motors (EA) limited (22%), Toyota Kenya limited (22%), CMC motors (22%) and Simba Colt motors(22%). Other respondents for the study were drawn from DT Dobie (11%).

The respondents who took part in this study held different managerial positions of motor vehicle assemblers in Kenya. They included general managers; parts inventory managers, commercial general managers, warehousing managers, division service managers and sales managers. Thus the data for this study was drawn from persons who had good and reliable information of their respective companies on operations strategies.

The data collected for this study was sourced from personnel in different departments in different motor industries in Kenya. The departments of interest included the departments of parts (37.5%), heavy commercial division (25%), finance (12.5%), commercial (12.5%) and the ones for manufacturing, purchasing and supply chain (12.5%).

The researcher requested the respondents to indicate the duration they had worked for their organizations. The findings shows that most of the respondents who took part in study had worked in their companies for a period between 2-5 years (44%), 33% had worked with their companies for a period between 6-10 years and the rest had worked with the companies for more than 10 years.

Further the respondents were asked to indicate the extent of competition in the motor industry. The study found that majority of the managers (78%) of the motor vehicle industries are facing stiff competition from their competitors while some of the managers (22%) experience moderate competition in the market.

### **4.3 Prioritization of operations strategies**

This section discusses how the company prioritized the operations strategies. The data was collected using a five-point likert scale where 1 represented no priority, 2 low priority, 3 average priority, 4 high priority and 5 very high priority. The data was analysed using mean and standard deviation. According to the scale those variables which had a mean value of more than 4.5 represented very high priority, those with mean close to 4.0 high priority, those with mean values close to 3.0 average priority while those which had a mean close to 2.0 represented low priority. Standard deviation was used to indicate the extent of consensus of the respondents on the variables

#### **4.3.1 Prioritization of Quality**

The study collected data on how the different companies prioritized aspects on quality in their companies.

**Table 4. 1 Prioritization of Quality**

	N	Mean	Std. Dev
Value for money	9	4.6	0.7
Performance quality	9	4.7	0.5
Low defect rates	9	4.6	0.5
Quality service	9	4.3	0.5
Product reliability	9	4.8	0.4
After-sale service	9	4.3	0.5
ISO certification	9	3.6	1.5

The information contained in table 4.1 shows that the motor vehicle assemblers have put very high priority on the value for money (M=4.6), performance quality (M=4.7), low

defect rates (M=4.6) and product reliability (M=4.8).The quality of service has been highly prioritized (M=4.3), after sale services (M=4.3) and ISO certifications (M=3.6).The standard deviation for the ISO certification was 1.5, meaning there was no consensus in the responses of the respondents.

#### **4.3.2 Prioritization of Cost**

The study collected data to determine how the companies prioritized the aspect of costs. The findings are shown in table 4.2.

**Table 4. 2 Prioritization of cost**

	Mean	Std. Dev
Manufacturing costs	4.4	0.5
Inventory costs	3.7	0.9
Cost of machinery and fixtures	3.3	0.9
Value added	3.9	0.8
Finance costs	4.0	0.7

The findings shown in table 4.2 shows that manufacturing costs (M=4.4), inventory costs (M=3.7), value added (M=3.9) and finance costs (M=4.0) were highly prioritized. This could be because the costs are variable in nature and so they kept on changing with respect to the level of performance of the companies. However, the study findings shows that cost of machinery and fixtures were accorded an average priority (M=3.3). This could be due to the fact that they are fixed costs and are mainly incurred once and also their values are not affected by the level of activity of the company.

#### **4.3.3 Prioritization of Reliability**

The study collected data on how different motor vehicle assemblers prioritized aspects of reliability. The findings are shown in table 4.3.

**Table 4. 3 Prioritization of Reliability**

	Mean	Std. Dev
Manufacturing lead time	4.4	0.7
On time delivery from suppliers	4.2	0.8
Due date performance to customers	4.3	0.7
Frequency of ordering	4.3	0.9

The findings shown in table 4.3 shows how companies have prioritized aspects of reliability. According to the findings shown, the motor vehicle assemblers place high priority on the lead time spent on the manufacturing processes (M=4.4). The companies have also highly prioritized the on time delivery from suppliers (M=4.2), due date performance to customer (M=4.3) and the frequency of ordering (M=4.3). In general, the motor vehicle assemblers seem to give priority to aspects of reliability.

#### 4.3.4 Prioritization of Flexibility

Flexibility is a key factor in management. This is because the natural events are not discrete but assume different directions at different times and places. The results on how the companies prioritized issues on flexibility are shown in table 4.4.

**Table 4. 4 Prioritization of Flexibility**

	Mean	Std. Dev
Ability to adopt varying demand values or product mix	4.1	0.8
Ability to operate different levels of output	3.9	0.9
Ability to quickly introduce new production processes or product lines	3.8	1.0
Ability to expand or redesign the system	3.9	1.1
Ability to adopt organizational changes	3.9	0.9
Ability to change delivery schedules	3.9	0.6

The findings presented in table 4.4 shows how companies addressed aspects on flexibility. According to the results motor vehicle assemblers adopting varying demand values or product mix (M=4.1) and operating different levels of output at the same time



(M=3.9) have been highly prioritized. The motor vehicle assemblers have highly prioritized on how to introduce new processes and product lines (M=3.8).

#### **4.4 Adoption of operations strategies**

All the motor vehicle assemblers considered and reviewed their operations strategies. According to the findings, the motor vehicle assemblers have prioritized operations strategies. The study collected data on the extent of adoption of the operations strategies. The results are shown in table 4.5.

**Table 4. 5 Adoption of operations strategies**

	Mean	Std. Dev
Quality	4.9	0.3
Costs	4.3	0.7
Flexibility	3.4	0.7
Reliability	4.6	0.7
Innovativeness	4.0	0.9

The information contained in table 4.5 shows the extent of adoption of the operations strategies in different motor vehicle assemblers. From the findings, the motor vehicle assemblers have adopted strategies on quality to a very great extent (M=4.9). Also to a very great extent, the companies have adopted strategies on reliability (M=4.6). Other strategies such as those on cost (M=4.3) and innovativeness (M=4.0) have been adopted to a great extent. Those strategies on flexibility have been adopted to an average extent (M=3.4).

#### **4.5 Effect of the operations strategies on the performance of the organizations**

The study collected data from the respondents on the effect of the adopted strategies on the performance of the different companies. The findings are shown in table 4.6.

**Table 4. 6 Effect of the operations strategies on the performance of the organizations**

	Mean	Std. Dev
Quality	4.1	1.1
Costs	4.4	1.1
Flexibility	3.4	0.9
Reliability	4.3	1.2
Innovativeness	3.3	0.7

The information contained in table 4.6 shows that operations strategy on quality affects the performance of the motor vehicle assemblers to a great extent (M=4.1, SD=1.1). The standard deviation is 1.1 showing that there was no consensus from the respondents. Similarly operations strategies on cost (M=4.4, SD=1.1) and reliability (M=4.3, SD=1.2) affected the performance of the motor vehicle to a great extent. The respective SD value indicates lack of consensus showing that the effects of the strategies affected the performance of the companies differently. The operations strategies on flexibility (M=3.4) and innovativeness (M=3.3) had moderate effects on the performance of the motor vehicle assemblers.

#### **4.6 Strategies used by the motor vehicle assemblers**

The study collected data on the strategies used to promote performance of the motor vehicle assemblers. The findings are presented in the following sections.

##### **4.6.1 Strategies used on quality**

The respondents provided information on the measures taken under the strategy of quality production. The findings are provided in table 4.7.

**Table 4. 7 Strategies used on quality**

	Yes	No
Hiring skilled personnel	88.9	11.1
Continuous improvement	88.9	11.1
Customer involvement	55.6	44.4
Developing quality standards	88.9	11.1
Adherence to government legislation	88.9	11.1
Collaborative ventures	66.7	33.3
Product testing and demonstration	88.9	11.1

The results findings found in table 4.7 shows some strategies which the motor vehicle assemblers have adopted to improve on the quality of their services and their products. According to the findings, the companies hire skilled personnel (88.9%), focus on customer involvement (55.6%), continuously embark on improvement (88.9%), develop quality standards (88.9%), adhere to government legislation on standards (88.9%), collaborate on ventures (66.7%) while others have concentrated on product testing and demonstration (88.9%).

#### **4.6.2 Strategies used on costing**

The respondents provided information on the strategies used to ensure that the companies were cost efficient. The results are shown in table 4.8.

**Table 4. 8 Strategies used on costing**

	Yes	No
Collective bargaining agreements	66.7	33.3
Sub-contracting non core functions	66.7	33.3
Lock in strategies with suppliers	66.7	33.3
Mass production	66.7	33.3
Competitive bids from suppliers	88.9	11.1
Adherence to tax laws of the country	100.0	0.0

The information presented in table 4.8 indicates that the motor vehicles have adopted the following strategies to make their costing more efficient. The findings shows that 66.7% of the companies have used collective bargaining agreements, 66.7% have sub-contracted non core functions and approximately 66.7% have locked in strategies with other suppliers. Others strategies used include mass production (66.7%) and having competitive bids from suppliers (88.9%). All the motor vehicle assemblers adhere to the tax laws in Kenya.

#### **4.6.3 Strategies used on flexibility**

The study collected data on the strategies used to ensure that the companies became more dynamic and adaptable to the changing business environment. The findings are shown in table 4.9.

**Table 4. 9 Strategies used on flexibility**

	Yes	No
Having additional manufacturing capacity	66.7	33.3
Temporary hirers to meet increased labour demands	77.8	22.2
Speculative inventory holding to cater for increased demand	77.8	22.2
Training and job rotation	100.0	.0
Sub-contracting non-core functions	66.7	33.3

The findings shown in table 4.9 shows that most of the companies have increased their manufacturing capacity (66.7%), temporary hires new personnel to increase labour demands (77.8%) and 77.8% keep speculative inventory to cater for any sudden increase in demand. All the motor vehicle assemblers which participated in the study do training and job rotations and approximately 66.7% sub-contract non-core functions in their companies.

#### 4.6.4 Strategies used on Reliability and innovativeness

The study sought to establish the strategies which the motor vehicles companies use to ensure that their services remain reliable to the clients. The results are shown in table 4.10.

**Table 4. 10 Reliability and innovativeness**

	Yes	No
Forward product and production planning	77.8	22.2
Product launch preparedness	88.9	11.1
Invest in human resource training	100.0	0
Embracing new technology	100.0	0
Additional temporary hires	55.6	44.4

The findings shown in table 4.10 shows that most of the companies (77.8%) do forward product and planning and 88.9% of the companies prepare before launching their products. All the companies were found to invest in human resource training and technology. Moreover, 55.6% of the companies do additional temporary hires to meet any sudden demands.

#### 4.7 Challenges facing motor vehicle Assemblers in Kenya

The study collected data on the challenges facing the motor vehicle assemblers in their operations. The data was collected using a likert scale of five points. The variables which had a mean value of above 4.5 represented “very great extent”, those variables which had a mean value close to 4.0 represented “great extent”, those which had a mean value close to 3.0 represents “moderate extent” while those which had a mean close to 2.0 represents “low extent”. The standard deviation represents was used to indicate the extent of dispersion and consensus.

**Table 4. 11 Challenges facing motor vehicle Assemblers in Kenya**

	Mean	Std. Dev
Second hand imports	4.7	0.7
Delivery constraints	2.9	0.8
Distributing/ marketing networks	2.9	0.9
Environmental challenges	1.9	0.8
Increased competition	4.4	0.7
Infrastructure	3.0	0.9
Inventory costs	3.4	1.1
Policies and regulations	3.6	0.7
Supplier reliability	2.9	1.5
Production capacity challenges	2.3	1.1
Cost of credit	3.4	1.2
Availability of skilled labour	2.0	1.1
Long lead times	3.6	0.9
Security issues	2.2	0.7

The findings presented in table 4.11 indicates that the import of second hand products has been a very great challenge to the motor vehicle (M=4.7). The companies to a great extent experience increased competition (M=4.4), unfriendly policies and regulations (M=3.6) and long lead time (M=3.6). The motor vehicle assemblers experience delivery constraints (M=2.9), strained distributing and marketing networks (M=2.9), poor infrastructure (M=3.0), heavy inventory costs (M=3.4), unreliable suppliers (M=2.9) and high cost of credit (M=3.4) to a moderate extent. Environmental, production capacity challenges, labour challenges and security challenges are experienced to very extents.

#### **4.8 Performance**

The study collected data on the effect of operations strategy on the performance of the motor vehicle assemblers. The findings are shown in table 4.12.

**Table 4. 12 Performance**

	Mean	Std. Dev
Profitability	4.6	0.5
Quality of customer service	4.6	0.7
Efficiency	4.3	0.7
Market share	4.4	0.7
Employee satisfaction	4.0	0.9

The findings on the effect of strategies adopted on the performance of the motor vehicle assemblers which participated in this study are shown in table 4.12. From the findings, the operations strategies used by the motor vehicle assemblers have affected the profitability of the companies (M=4.6) and the quality of customer services (M=4.6) to a great extent. The strategies have increased efficiency (M=4.3), market share (M=4.4) and improved employee satisfaction to a great extent. This indicates that in general the operations strategies have had a substantial effect on the performance of the motor vehicle assemblers in Kenya.

#### **4.9 Correlations of the operations strategies and performance**

The study carried out a correlations test to establish how the operations strategies related to the performance of the motor vehicle assemblers. The findings are shown in table 4.13.

**Table 4. 13 Correlations of the operations strategies and performance**

	Quality	Costs	Flexibility	Reliability	Innovativeness	p
Quality	1					
Costs	-.523	1				
Flexibility	-.329	.423	1			
Reliability	.844	-.318	-.100	1		
Innovativeness	.493	.048	-.165	.607	1	
p	.269	-.037	.773	.013	.066	1

The findings shows that only the performance of the motor vehicle assemblers was highly correlated with quality, costs, flexibility, reliability and innovativeness. According to the results, increase in quality of products (0.269), flexibility (0.773) , reliability (0.013) and innovativeness (0.066) were accompanied by an increase in performance. However, the increase in cost negatively related with performance. When the costs increased, the performance was low and vice versa.

#### **4.10 Distribution functions of the factors with regard to the performance**

The study conducted a chi-square test to determine whether there were statistical differences on how the factors affected the dependent variable. The results are shown in table

**Table 4. 14 Chi-square test on factors with regard to the performance**

Chi-Square Tests			
	Value	df	Sig. (2-sided)
Pearson Chi-Square	24.000 <sup>a</sup>	20	.242
Likelihood Ratio	21.134	20	.389
Linear-by-Linear Association	.115	1	.735
N of Valid Cases	8		

The study conducted a chi-square test to determine whether there were differences on how the factors affected the performance. The chi-square test results shown are  $\chi^2 = 24.00$  and the p-value was 0.242. This means that there were no significant statistical differences on how the factors affected the performance. Thus, the factors had identical distributions functions with regard to performance.

#### **4.11 Discussion of the findings**

The study findings indicate that most of the motor vehicle assemblers in Kenya are facing stiff competition from their rivals. This indicates that the motor vehicle sector in Kenya is highly competitive suggesting that managers have to embrace quality performance. According to Lee (2003), competitiveness of organizations is mostly dependent on its



ability to perform well in dimensions such as cost, quality, delivery, dependability and speed, innovation and flexibility to adapt itself to variations in demand.

The study established that motor vehicle assemblers in Kenya have highly prioritized aspects of quality by checking value for money, quality of their performance, ensuring low defect rates and making their products highly reliable. The companies have also put high priority on quality of their services, after sale services and worked to meet ISO certifications. Slack and Lewis (2002) assert that a company may try to articulate its position in the market in a number of ways thus the above are some of the ways of adjusting to quality production by the motor vehicle assemblers.

A study conducted by Nyamwange (2003) found that cost is one of the major challenges faced by manufacturing industries in designing, and implementing operations strategies. The findings on the study shows that motor vehicle assemblers have highly prioritized variable costs such as manufacturing costs, inventory costs, value-added related costs and finance costs and lowly prioritized fixed costs in most of the companies.

The study established that motor vehicle assemblers in Kenya have prioritized highly on on lead time, time delivery from suppliers, due date performance to customer and the frequency of ordering. On flexibility, the study established that motor vehicle assemblers have prioritized varying values and product mix, operate different levels of output at the same and have introduced new processes and product lines. Stevenson and Spring (2007) stated that every manufacturing firm has to be flexible by meeting its customer demands and coping with changes in uncertain business environment which is characterized by increasingly sophisticated consumers that demand customized products and short lead times.

The findings on the adoption show that the motor vehicle assemblers have adopted strategies on quality, reliability, cost, innovativeness and flexibility. These strategies have affected the performance of the companies to different extents. The study found that strategies on quality, cost and reliability have greatly affected the performance of the companies while those on flexibility and innovativeness have affected the performance of

the motor vehicles to a moderate extent. The findings agree with those of Mbeche and Nyamwange (2003), that regardless of a company's characteristics, for companies to gain and maintain competitiveness they should pursue the right strategies, which include, high quality, low cost, time/speed, innovativeness and flexibility.

The motor vehicle assemblers in Kenya have adopted strategies to improve on quality. These include hiring skilled personnel, focusing on customer involvement, continuously focusing on improvement, adhering to the government legislation on standards, collaborating on ventures and concentrating on product testing and demonstration. The above qualities were considered by Phusavat and Kanchana (2007), who assert that an organization that is committed to quality must apply it at six levels: low-defect rate, performance quality, product durability, environmental aspect, certification and product reliability. The strategies which have been adopted to ensure cost efficiency include collective bargaining, sub-contracting of non core functions, locking in strategies with other suppliers, producing in mass quantities, and adhering to tax laws.

The findings of the study showed that motor vehicle assemblers in Kenya increase the operating capacity, temporary hires personnel to increase labour demands, keep buffer inventory to deal with any sudden increase in demand, perform training, rotate employees and sub-contract non-core function in their companies to remain flexible in their operations. To ensure they remain reliable and highly innovative, motor vehicle assemblers do forward production and planning, do adequate preparations before launching their products, invest in human resource training, embrace technology in their operations and hire additional personnel to meet any sudden demand. Ward & Durray, (2000), asserted that the main two main dimensions of reliability are delivery reliability and delivery speed. Also according to Assink (2006), innovation has a connotation of newness, success, and change and can be defined respectively as the generation, development, and adaptation of an idea or behavior, new to the adopting organization.

The study found that the motor vehicle assemblers in Kenya experience different challenges in their operations. The second hand imports pose a very great challenge to the motor vehicle assemblers because the products are cheaper than the local ones thus

outdoing them. According to KMI reports (2000-2006), the imports accounted for approximately 70% of the market. The companies experience increased competition, unfriendly policies and regulations and long lead times. The motor vehicle assemblers also experience delivery constraints, strained distribution and marketing networks, poor infrastructure, heavy inventory costs, unreliable suppliers and high cost of credit to a moderate extent. The environment, capacities of production, labour and security pose no serious challenges to the motor vehicle assemblers.

The study found that operations strategies adopted have had impacts on the performance of the motor vehicle assemblers on profitability, quality of customer services, efficiency of the companies, increased market share of the companies and improved the employee satisfaction. From a general perspective, the operations strategies have had positive impact on the performance of the motor vehicle assemblers in Kenya. These findings agree with those of Prajogo and Sohal, (2006) that show direct linkage between strategy and firm's performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presents the findings and recommendations of the study. The main objective of this study was on the effect of the operations strategies on the performance of the motor vehicle assemblers. This chapter has sections on the demographic information of the respondents, the discussions of the study findings, the conclusion of the study and recommendations of the study. Lastly, there is a section on the suggestions for further studies.

### **5.2 Summary of the study**

The study found that stiff competition is a major challenge facing most of the motor vehicle assemblers in Kenya. This increased competitiveness of the organizations has made managers to revisit their operations strategies. Lee (2003) argued that the ability to do well in cost, quality, delivery of service, dependability and speed, innovation and flexibility determines the competitiveness of the organizations.

The study found that motor vehicle assemblers in Kenya have worked on cost efficiency through analysis of the value for money, performance qualities, defect rates and improving the product reliability, after sale services and working to meet the ISO certification.

The companies make cost of their operations efficient through several strategies. This include prioritizing on such things as manufacturing costs, inventory costs, value-added related costs and finance costs. Fixed costs were however lowly prioritized. Nyamwange (2003) asserted that cost is one of the major challenges faced by manufacturing industries in designing, and implementing operations strategies.

Some early scholars Stevenson and Spring (2007) stated that every firm has to be flexible by meeting its customer demands and coping with changes in uncertain business environment which is characterized by increasingly sophisticated consumers that demand customized products and short lead times. The findings showed that motor vehicle

assemblers have prioritized highly on lead time, time delivery from suppliers, due date performance to customer and the frequency of ordering. The study established that motor companies have also worked on flexibility through product mix, operate different levels of output at the same and have introduced new processes and product line.

According to the study companies have worked on the quality by hiring skilled personnel, focusing on customer involvement, continuously focusing on improvement, adhering to the government legislation on standards, collaborating on ventures and concentrating on product testing and demonstration. This is in line with Phusavat and Kanchana (2007), who asserted that an organization that is committed to quality must apply it at six levels: low-defect rate, performance quality, product durability, environmental aspect, certification and product reliability. The cost of operations is made effective by collective bargaining, sub-contracting of non core functions, producing in mass quantities, lock-in strategies with other suppliers and adhering to tax laws.

The study further found that motor vehicles companies have adopted other strategies such as increasing the operating capacity, hiring personnel to increase labour force, performing training and rotating employees and sub-contracting non-core function in their companies to remain flexible in their operations. Moreover, the firms do adequate preparations before launching their products, invest in human resource training, embrace technology in their operations and hire additional personnel to meet any sudden demand as a way of remaining highly innovative and reliable which are the main two main dimensions of reliability (Ward & Durray, 2000).

The study established that motor vehicles companies face some challenges such as second hand products which are cheaper than the local ones, increased competition, unfriendly policies and regulations and long lead times, delivery constraints, strained distribution and marketing networks, poor infrastructure, heavy inventory costs, unreliable suppliers and high cost of credit.

The operations strategies have had some positive impacts on the performance of the firms such as high profitability, quality of customer services, efficiency of the companies,

increased market share of the companies and improved the employee satisfaction. This reinforces the argument by Prajogo and Sohal, (2006) that there exists direct link between strategies adopted by the firms and their performance.

### **5.3 Conclusions**

The study concludes that motor vehicle assemblers in Kenya face stiff competition within the industry which has increased pressure on the managers to find means to remain competitive.

The study notes that motor vehicle assemblers in Kenya have prioritized quality measures by checking value for money, quality performance, ensuring low defects and making products highly reliable. Priorities on cost include manufacturing costs, inventory costs, value added costs and finance costs. Reliability has been ensured by prioritizing on lead times, time of delivery from the suppliers, due date of performance to customers and the frequency of ordering. To remain flexible, motor vehicle assemblers have a mix of products, operate different levels of output and introduced new processes and product lines.

The companies have adopted strategies on quality improvement such as hiring skilled personnel, customer involvement, adhering to the government legislation on standards, collaborating on ventures and product testing. Collective bargaining, sub-contracting of non-core functions, locking in strategies with other suppliers, mass production and complying with tax regulations are some of the measures taken by the motor vehicle assemblers to improve on cost efficiency.

The companies have adopted strategies to allow dynamics and growth such as keeping extra inventory, increasing manufacturing capacity, temporal hires of personnel, constant training and occasional job rotations. The companies strive to remain reliable and innovative by doing forward production and planning, investing in human resource training, embracing technology and additional hires to meet any sudden demand.

The study concludes that the severest challenge is the importation of the second hand vehicles from overseas. Other challenges include increased competition, unfriendly

policies and regulations, long lead times, delivery constraints, strained distribution and marketing networks, poor infrastructure, heavy inventory costs, unreliable suppliers and high cost of credit.

The use of operations strategies has positively enhanced performance of the motor vehicle assemblers by increasing profits, quality of customer services, and efficiency of the companies, market share and the employee satisfaction.

#### **5.4 Recommendations**

The study found out that motor vehicle assemblers have highly prioritized on the variable costs incurred in their daily business activities. Less attention is given to the fixed costs which makes the capital of the companies. The study recommends that fixed costs be given the right attention so as to realize full impact of the cost strategy in the companies.

The study findings indicate that strategies on quality, cost and reliability have great impacts on the performance of the motor vehicle assemblers while those on flexibility and innovation impacted the performance of the companies negligibly. It is recommended that management of the companies focus more on the strategies of cost, reliability and quality to achieve higher levels of performance.

The study found that motor vehicle assemblers experience challenges from the second hand imported vehicles. It is recommended that the government introduces high levies on the imported second hand vehicles to protect the local companies from unfair competition and also offer incentives to make locally assembled vehicles affordable.

The motor vehicles companies have been found to be experiencing unfriendly policies and regulations in their business environment which in turn affects their performance. The study recommends that the government reviews the policies and the regulations in place with a view of making them friendlier to the local motor vehicle assemblers.

#### **5.5 Limitations of the Study**

This study suffers some challenges which limit the study's findings and conclusion on the scope of application. Firstly, the study collected data on the operations strategies and

their effects on the performance of the motor companies. The data collected lacked the financial strategies and their effects on the performance of the companies.

The data collected did not focus on all the operations strategies but only some of them. This limits the use of the study findings because some of the operations and their effects on the performance are not known.

### **5.6 Suggestions for Further Areas of Research**

This study was conducted on motor vehicle assemblers in Kenya. The study assumed that the assemblers were a true representation of the assembly companies in Kenya. However, there are other forms of motor assemblies that were not taken into consideration. Thus it is recommended that other similar studies be done on these companies so as to get a clearer understanding of the effect of operations strategies on the performance of the motor vehicle assemblers in Kenya. Good examples of these areas of study would include bus and truck body assemblers, motor cycle assemblers and assemblers of agricultural and construction equipment.

The study collected data and focused on the operations strategies of the companies. It is suggested that further studies be done on the financial strategies and their effect on the performance of the motor vehicle assemblers in Kenya.



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## **APPENDICES**

### **Appendix I: Letter of Introduction**

Nixon Oduor Ogolla,  
C/o University of Nairobi,  
P.O. Box 30197,  
Nairobi.  
June, 2013.

To Whom it May Concern

Dear Sir / Madam,

### **RE: REQUEST FOR RESEARCH DATA**

I am a post-graduate student in the Faculty of Commerce, University of Nairobi. I am conducting a management research on 'A survey of Operations strategy in the Motor Vehicle Assembly Industry in Kenya'.

As part of this study, I request you to assist by filling in the attached questionnaire. The information you will give is needed purely for academic purposes and will be treated with strict confidence. In no way shall your name appear in the final report.

A copy of the final report will be availed upon request.

Your assistance and cooperation will be highly appreciated.

Yours faithfully,

Nixon Oduor Ogolla

RESEARCHER

Onserio Nyamwange

SUPERVISOR

## Appendix II: Research Questionnaire

### Section A: General Profile

1. Name of company.....
2. Position held.....
3. Department .....
4. How long have you worked for your company?
  - a) Less than 1 year
  - b) 2 – 5 years
  - c) 5 – 10 years
  - d) More than 10years
5. How would you describe the competition currently faced by your company? (Please tick one)
  - a) Very stiff
  - b) Moderately stiff
  - c) Negligible

### Section B: Operations Responses

6. In determining the extent to which your organization uses quality as a competitive priority, please indicate the level of priority to which each of the following aspects are given in your organization on a scale of 1 – 5 (Where 1 - Very low priority, 2 - Low priority, 3 - Average priority, 4 - High priority and 5 - Very high priority)

	Very high priority	High priority	Average priority	Low priority	Very low priority
Products value					
Quality of service					
Low defect rates					
Performance quality					
Product reliability					
Incentive compensation					
ISO certification					

7. In determining the extent to which your organization uses cost as a competitive priority, please indicate the level of priority to which each of the following aspects are given in your organization on a scale of 1 – 5 (Where 1 - Very low priority, 2 - Low priority, 3 - Average priority, 4 - High priority and 5 - Very high priority)

	Very high priority	High priority	Average priority	Low priority	Very low priority
Labour Costs					
Inventory costs					
Cost of fixtures					
Cost of machinery					
Working capital					

8. In determining the extent to which your organization uses reliability as a competitive priority, please indicate the level of priority to which each of the following

aspects are given in your organization on a scale of 1 – 5 (Where 1 - Very low priority, 2 - Low priority, 3 - Average priority, 4 - High priority and 5 - Very high priority).

	Very high priority	High priority	Average priority	Low priority	Very low priority
Fast delivery					
On time delivery					
Dependable promises					
After sales service					

9. In determining the extent to which your organization uses flexibility as a competitive priority, please indicate the level of priority to which each of the following aspects are given in your organization on a scale of 1 – 5 (Where 1 - Very low priority, 2 - Low priority, 3 - Average priority, 4 - High priority and 5 - Very high priority).

	Very high priority	High priority	Average priority	Low priority	Very low priority
Ability to rapidly change production volumes					
Ability to operate at different levels of output					
Ability to quickly introduce new production processes					
Ability to easily expand or redesign the system					
Ability to adopt to organizational changes					





13. What tactics do you use to achieve the strategy of quality?

Hiring skilled personnel [ ]

Improvements in mode of operation [ ]

Reduction in monopolies [ ]

Adherence to government legislation [ ]

Collaborative joint ventures [ ]

14. What tactics do you use to achieve the strategy of cost?

Cost cutting [ ]

Mass production [ ]

Eradication of corruption [ ]

Adherence to tax laws of the country [ ]

15. What tactics do you use to achieve the strategy of flexibility?

Attending to customers specifications [ ]

Coping with changes in uncertain business environment [ ]

Managing resources to meet various customers' needs [ ]

Adjusting to changes in economic situations [ ]

16. What tactics do you use to achieve the strategy of reliability and innovativeness?

Adhering on product delivery times [ ]

Launching new advanced products [ ]

Coping with sophisticated regulations and requirements [ ]

Facing technological obsolescence [ ]

**Section D: Challenges Faced by the Motor Vehicle Assembly Industry in Kenya**

17. To what extent do the following challenges affect your organization? Tick appropriately using a Likert scale of 5 where 5= Very great extent, 4= Great extent 3= Moderate extent and 2= Low extent and 1= No extent at all.

	Very great extent	Great extent	Moderate extent	Low extent	No extent at all
Counterfeit goods					
Delivery constraints					
Distribution/marketing networks					
Environmental challenges					
Increased competition					
Infrastructure (roads)					
Inventory costs					
Policies and regulations					
Product characteristics					
Production challenges					
Security issues					
Others ,(specify)					
(i)					
(ii)					
(iii)					

**Section E: performance**

18. Indicate the extent of improvement on the performance of the your company on the following aspects .Tick appropriately using a Likert scale of 5 where 5= Very great extent, 4= Great extent 3= Moderate extent and 2= Low extent and 1= No extent at all.

	Very great extent	Great extent	Moderate extent	Low extent	No extent at all
Profitability					
Quality of customer services					
Efficiency					
Market share					
Employee satisfaction					

Thank you for your time.