

**ANALYZING KENYA'S SUGAR INDUSTRY COMPETITIVENESS  
THROUGH PORTER'S DIAMOND MODEL**

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## DECLARATION

This project report is my original work and has not been submitted for a degree in any other institution of learning.

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Special thanks to the chief executives and departmental heads of various sugar firms who had faith in me and granted me hearing despite their tight work schedules. To my parents and family thanks for allowing me some time off from you to concentrate on my studies. May God bless you always.

## **DEDICATION**

Dedicated to my entire family, my late sister Rachael and friends for their constant encouragement and support for which I shall always be grateful.

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## ABBREVIATIONS

KSB.....	Kenya Sugar Board
KESREF.....	Kenya Sugar Research Foundation
COMESA.....	Common Market for Eastern and Southern Africa
WTO.....	World Trade Organization
FTA.....	Free Trade Area
EAC.....	East African Community
KSA.....	Kenya Sugar Authority
MOA.....	Ministry Of Agriculture
KARI.....	Kenya Agricultural Research Institute
TCD .....	Tonnes of Cane per Day
GDP.....	Gross Domestic Product
TRQ.....	Tariff Rate Quota
GOK.....	Government of Kenya
R&D.....	Research And Development

## ABSTRACT

Organizational survival is dependent on the ability of the organization to adapt to a changing environment. Thus for an organization to meet its objectives, it has to provide goods and services driven by the whims of the target market. Porter (1990) developed the Diamond model of analysis that incorporates four major determinants; factor conditions, demand conditions, related and supporting industries and firm strategy, structure and rivalry in gauging competitiveness at various levels including specific industries. In other words, some industries, in a particular country, have strong diamonds, while others have weak ones. In addition to these four determinants of competitiveness, there are two indirect facets including chance and government.

The Diamond model by Porter forms the conceptual framework that was used to study the sugar industry in Kenya. This study focused on analyzing the Kenyan sugar industry within the conceptual framework on Porter's Diamond model and involved a cross-sectional survey on the state of operations among the existing seven millers in the Kenyan sugar industry. Primary data was collected through the use of semi-structure questionnaires administered on the CEOs or departmental heads of the companies through personal interviews to record responses relating to the various variables in the sugar industry.

The questions were divided into several sub-headings with the first one specifically targeted at gathering data about the general background of the firms. The subsequent sub-headings looked at aspects of competitiveness and strategies employed and the challenges facing their attainment. The final sub-headings of the questionnaire consisted of mainly closed questions, which sought information on the determinants of Porter's Diamond model as a tool to testing industry competitiveness.

Upon the conclusion of information gathering, analysis of data was done to determine if any relationships exist (and the strength of such relationships) between industry characteristics such as services offered and socio/economic factors such as age of



company, size determined by number of employees and type of ownership. This was done using simple percentages.

These findings point to a major weakness on the determinant of factor conditions while demand conditions and chances is quiet strong. This technically means that the state of extreme variations in the state of the determinants cannot allow for an effective operation of the Kenyan sugar industry as one Diamond. One weak determinant pulls down the performance of the rest on the diamond.

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# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the study

Globally the corporate world is increasingly going through radical shifts and trends brought about by factors such as technological changes, entry of new competitors as well as growing internal challenges. As such, corporate planners and strategists are always faced with the challenge of ensuring sustainable existence of a firm and survival over time. In such a shifting business environment, the only cushion is the ability of the firm to align its strategies with the environment in order to gain and sustain the much needed competitive edge over its rivals (Pearce and Robinson, 2005).

The dynamism in the operational environment makes it necessary for organizations to constantly change their strategies and tactics so as to achieve competitive advantage (Ansoff, 1987). As the Kenyan economy becomes more open and trade becomes liberalized, the market place becomes more sophisticated the competitive arena will continue to become vibrant. Pearce and Robinson (1997) pointed out that the environment is constantly changing and so it makes it imperative for organizations to continuously adapt their activities in order to assure survival. Firms must also develop the core competencies needed to manage threats and exploit emerging opportunities better than that of the competition.

Ansoff and McDonnell (1990) see proactive approach to threats and opportunities as the only way for a firm to succeed. Kenyan firms are already encountering such situations as result of the opening up of trade platforms such as the COMESA FTA and the EAC common market and globalization. Most organizations and across all sectors in Kenya have as a result adopted several strategies in dealing with the challenging conditions brought about by globalization and liberalization (Kibera and Wairuingi, 1998). Firms must continuously align their strategies to the changing competition (Johnson and Scholes 2003). Strategic responses involve changes in a firm's strategic behaviour to ensure success in the ever changing environment (Ansoff, 1987). Without timely shifts in strategy and tactics firms would find it difficult to open make strategic maneuvers.

## **1.2 The sugar industry in Kenya**

The development of the sugar industry in Kenya started with private investments at Miwani in 1922, followed by Ramisi Sugar Company in 1927. After independence, six additional companies were established namely; Muhoroni in 1966, Chemelil in 1968, Mumias in 1973, Nzoia in 1978, South Nyanza in 1979, West Kenya in 1981 and Soin in 2006. KSB(2005) says the establishment of these mills as parastatals was driven by a national desire to accelerate socio-economic development, address regional economic imbalances, increase Kenyan citizen participation in the economy, promote indigenous entrepreneurship and promote foreign investment through joint ventures.

Obado (2005) points out that this desire was expressed in the Sessional Paper No.10 of 1965 on African Socialism. Despite these investments, self sufficiency in sugar has remained elusive over the years as consumption continues to outstrip supply. Domestic sugar consumption levels are higher than total local sugar production in Kenya. Hence, self-sufficiency in sugar supply for Kenya remains elusive for the increasing population. Murgor (2008) observed that consequently Kenya has remained a net importer of sugar with the country on average importing 220,000 tonnes of the commodity per annum to bridge the deficit between production and consumption. There however exists potential for Kenya to become and retain self sufficiency in sugar production and also produce surplus for export.

Sugarcane is one of the most important crops in Kenya alongside tea, coffee, maize and horticultural crops. It directly supports over 250,000 small-scale farmers who supply over 85% of the cane milled by sugar companies. An estimated 6million Kenyans, about 20% of the total population, derive their livelihood directly or indirectly from the sugar industry. Domestic production of sugar saves the country in excess of US\$250 million (Ksh 20billion) in foreign exchange annually. Apart from economic contribution of the sugar industry to the nation, there are many social benefits accruing to the communities living in the sugar belt. Sugar companies and some out-grower institutions have embraced principles of social corporate responsibility and have invested in social amenities including schools, roads and bridges, health facilities, sporting facilities.

### **1.3 Statement of Problem**

The business environment in Kenya has drastically changed since the 1990s and the most visible of these changes has been economic reforms which led to liberalization and privatization of state owned companies (Obado, 2005). Ciano (2006) concluded that the influence of liberalization leads to increased competition from imported goods and services pitted against the local customers who were dependant on KPLC. He observed that in 10 years, the Kenya electricity sector went through major reforms with eventual entry of many players.

Kibera and Wairuingi (1998) say most organizations in Kenya have adopted several strategies in dealing with the challenges brought about by globalization and liberalization. A similar scenario faces the Kenyan sugar industry where sugar-manufacturing firms have remained largely uncompetitive in both local as well as regional markets. Several studies have been conducted on the competitiveness of millers in the Kenyan sugar industry including Okunyanyi (1999); Obado (2005); Jowi (2006) and Murgor (2008) but little work has been done to establish the actual competitiveness of the entire Kenyan sugar industry as a single functional system. This study went beyond the competitive strategies currently employed by the individual sugar millers and looked at the industry as a single operational system. Apart from millers, the industry as a system has other facets such as government that are critical to the operations of the industry in terms of policy formulation and implementation.

Porter (1998) noted that factor conditions, demand conditions, related and supporting industries as well as firm strategy, structure and rivalry form determinants that create the national environment through which companies or industries are born and learn how to compete. Each of these four attributes defines a point on the diamond of national advantage; the effect of one point often depends on the state of others. Weakness in any one determinant will constrain an industry's potential for advancement and adjustment. But the points of the diamond are self-reinforcing: they constitute a system. The question therefore was that what is overall competitiveness of the Kenyan sugar industry? And are players in the Kenyan sugar industry operating effectively as a single system?

#### **1.4 Objective of the study**

This study sought to analyze the competitiveness of the Kenya sugar industry using Porter's Diamond Model. It involved mapping each players against the determinants laid out by the model.

#### **1.5 Value of the study**

The importance of this study lay in the establishments of how individual players in the industry are working in terms of gaining competitiveness other than make general inferences based on just sections of the industry. This will help sugar industry managers and its stakeholders to appreciate the effects factors that determine the viability of an industry and reforms required to stay competitive in a market arrangement.

The study is useful in testing the applicability of the Diamond model on an industry of a developing economy such as the Kenyan one since past studies have been conducted on advanced nations.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter starts by looking at competitive advantage generally as a concept and as opined by various scholars using various models. It then delves into the concept of industry analysis before specifically looking at Michael Porters Diamond Model making inferences to past, recent as well as tracing the basis of the model.

### **2.2 Competitive Advantage**

Porter (1985) says competitive advantage is having an edge over rivals in attracting customers and defending against competitive forces. Competitive strategy hinges on a company's capabilities, strengths and weaknesses in relation to market characteristics and the corresponding capabilities, strengths and weaknesses of the competitors (Jowi, 2006). The goals of competitive strategy is to find a position in the industry where a company can best defend itself against the competitive forces or influence them in its favour (Porter, 1980). Formulating and implementing the right competitive strategies is a significant contributor to profits however there is no single right strategy that firms can apply to become competitive and thus rise above competition (Ndung'u, 2006).

Pearce and Robinson (2005) highlight that the ever changing environment continually provides opportunities and threats to organizations. To ensure survival and success, firms need to develop capabilities to manage threats and exploit the emerging opportunities promptly. Competitive strategy is a broad formula of how a business is going to compete, what its goals should be and what policies will be needed to carry out these goals (Porter, 1980). Wacuka (2006) says competitive strategy is the means that a firm can use to achieve competitive advantage in the market. It consists of approaches and initiatives the firms undertake to attract customers and fulfill their expectations better than the competitors. The objective of the competitive strategy is to kick off the socks off rival companies by doing a better job of satisfying buyers' needs and preferences (Thompson, Strickland and Gamble, 2007).



Lawrence and Lorsch (1967) pointed out that effective strategic management should be characterized by; a clear business strategy and vision for the future, a strategic direction endorsed by senior managers taking into account partners and other shareholders, a system of governance and several levels that ensure you coordinate everything even when there are competing goals and priorities in the enterprise. A similar school of thought emanated from Thompson and Strickland (1993) who said the strategic manager's main role is to develop a business concept and forming a vision of where the organization needs to be headed in effect giving the organization sense of purpose.

Historically, strategic management as a discipline began in the 1950-1960s. Chandler (1962) is among the earliest contributors to the evolution of strategic management and recognizes the importance of coordinating the various aspects of management under one all encompassing strategy. It is Selznick (1957) who brings along the argument that organizations need to match their internal operations with the happenings in the external environment. Porter (1985) then identified five factors that determine the nature and degree of competition in an industry; bargaining power of buyers; threat of substitutes; bargaining power of suppliers; rivalry among existing competitors and threat of new competitors. To a large degree, these five market forces collectively determine the ability of a firm, whether large or small, to be successful. To succeed in building competitive advantage, a company must aim at providing buyers with what they perceive as superior value; prices lower than competitors' for equivalent benefits as well as provision of unique benefits that more than offset premium price.

Porter (1990) later developed the Diamond model that incorporates four major determinants in gauging competitiveness at various levels. These four sources of competitive advantage can produce a fertile soil to build an internationally competitive industry in a country. In other words, some industries, in a particular country, have strong diamonds, while others have weak ones. In addition to these four determinants of competitiveness, there are two indirect facets including chance and government.

### **2.3 Industry Analysis**

Classical theories of international trade opined that comparative advantage is haboured within the factor endowments that a nation may be lucky inherit including population size, labour, natural resources and land. Since the 1930s and 1940s, the traditional approach to analysis of industries was the structure-conduct-performance (SCP) model (Brown,1995).According this approach, firm and industry behavior depend on industrial structure, so once industrial structure is classified, conduct and performance becomes readily deduced. In the 1960s and 1970s, a number of economists began to find problems with the SCP approach leading to the adoption of new industrial economics. The most common problem in the SCP approach was the endogeneity question. In the SCP context the endogeneity question referred to a school of thought that the performance of an industry depended on conduct and structure.

Brown (2005) said this did not go down with many scholars because the argument by this approach was that industry structure shapes performance and that the industry structure is predetermined (exogenous) and that managers and entrepreneurs only passively respond to industrial environment. This is inconsistent with the business people who endeavor to shape their industrial environ to meet their needs. Another hitch with the SCP approach was that it did not say much about the evolution of industrial markets.

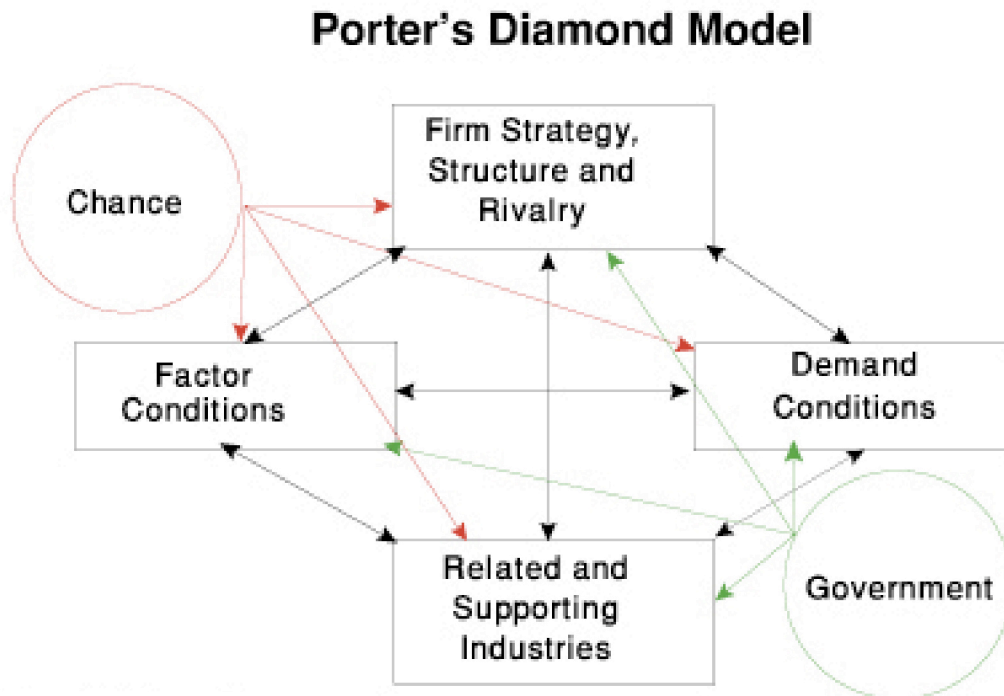
Porter (1980) was among the new industrial economists who held that the market economy evolves through interplay of firms and policy makers, who attempt to control economic evaluation. He then developed the five-forces industry analysis which advanced the theory that there are five forces that determine competition in an industry. Porter(1998) later modified the five-forces model and argued that a country can create new advanced factor endowments to attain competitive advantage through four main determinants; factor conditions, demand conditions, related and supporting industries and firm strategy, structure and rivalry. Yetton.P.,Craig.J.,Davis.J., and Hilmer.F.,(1992) said the four determinants, which interact together in a diamond, are the forces that provide the pressures, incentives and capabilities for firms to undertake such improvement and innovation. Individually and as a system these four determinants create the context within which a nation's firms are created and compete. This diamond is mutually reinforcing.

Wu (2006) says these determinants create the national environment in which companies are born and learn how to compete with each point of the diamond and the diamond as a system --affects essential ingredients for achieving international competitive success in the industry; the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes opportunities that companies perceive and the directions in which they deploy their resources and skills; the goals of the owners, managers, and individuals in companies; and most important, the pressures on companies to invest and innovate. When a national environment affords better ongoing information and insight into product and process needs, companies gain a competitive advantage. When national environment pressures companies to innovate and invest, companies both gain a competitive advantage and upgrade those advantages over time Porter (1998).

## **2.4 Conceptual Framework**

This study used the Diamond model by Porter as a guide in trying to define the structure and performance of the sugar industry in Kenya. Porter (1998) argues that a country or sector can create new advanced factor endowments to attain competitive advantage through four main determinants; factor conditions, demand conditions, related and supporting industries and firm strategy, structure and rivalry (Fig.1). The determinants create the national environment in which companies are born and learn how to compete through attributes that both individually and as a system constitute the diamond of national advantage.

Figure 1: Porter's Diamond Model Illustrated



Adapted from QuickMBA website <http://www.quickmba.com>

The first determinant is *factor condition* where the nation's position in factors of production, such as skilled labour or infrastructure, necessary to compete in a given industry. Factors are basic or advanced, generalized or specialized. The most significant and sustainable competitive advantage results when the specialized and advanced factors needed to compete in a particular industry are present (Yetton, P., J. Davis and P.L. Swan, 1992). Porter (1998) argued that the most important factors of production are those that involve sustained heavy investment and are specialized. Basic factors such as pool of labour or raw material source do not constitute an advantage in knowledge intensive industries. To support competitive advantage, a factor must be highly specialized to an industry's particular needs. These factors are scarcer and, more difficult for foreign competitors to imitate –they require sustained investment to create. Nations succeed in industries where they are particularly good at factor creation.

The second determinant is *demand conditions* where nations gain competitive advantage in industries where the home demand gives their companies a clearer or earlier picture of emerging buyer needs, and where demanding buyers pressure companies to innovate faster and achieve more sophisticated competitive advantage than other foreign rivals (Porter,1998). Home demand helps build competitive advantage when a particular industry segment is larger or more visible in the domestic market than foreign markets. The larger market segments in a nation receive the most attention from the nation's companies; companies' accord smaller or less desirable segments a lower priority. Local buyers can help a nation's companies gain advantage if their needs anticipate or even shape those of their nations-if their needs provide ongoing "early warning indicators" of the global market trends.

The third determinant is *related and supporting industries* where internationally competitive home based suppliers create advantages in downstream industries in several ways. First they deliver the most cost-effective inputs in an efficient, early rapid and sometimes preferential way. Porter (1998) says far more significant is that home based related and supporting industries provide in innovation and upgrading-an advantage based on close working relations. Suppliers and end users located near each other can take advantage of short lines of communication, quick and constant flow of information, and on going exchange of ideas and innovations. Companies have the opportunity to influence their suppliers' technical efforts and can serve as test sites for research and development work, accelerating the pace of innovation.

Fourthly the determinant of *firm strategy, structure and rivalry* means that national circumstances and context create strong tendencies in how companies are created, organized, and managed as well as what the nature of domestic rivalry will be. Smit (2010) says the main emphasis here is that the strategies and structures of firms depend heavily on the national environment and that there are systematic differences in the business sectors in different countries that determine the way in which firms compete in each country and ultimately their competitive advantage.

No one managerial system is universally appropriate and companies must constantly work to fit within the prevailing times. Porter (1998) concluded that strategy describes the types of actions firms utilize to achieve both long-range and short-range goals. These are often low-cost, differentiation, focus strategies or some combination thereof. Other common strategies include growth, maintenance or restructuring activities. Growth strategies would be associated with higher competitiveness because the ability to pursue growth internally or externally would be indicative of overall business health.

Structure refers to the industry composition. This describes the degree to which an industry is concentrated or dispersed, competitive or monopolistic, or global or domestic. A more crowded structure would indicate multilevel competition and therefore greater competitiveness. Rivalry indicates both the number of players and the level of competition among firms in an industry. Greater rivalry in an industry would lead a firm to higher levels of competitiveness vis- a- vis its rivals. Rivalry is thought to be the most comprehensive of the three factors, as it often indicates the underlying strategy and structure of the competitors.

The *government* is yet another determinant where the government sets up policies, rules, and regulations in industry activities. It is directly responsible for improving the wellbeing of citizens, as well as achieving economic and political stability or social benefits Porter (1998). Government can influence all the four general determinants either positively or negatively. As Porter (1990) pointed out, government can affect factor conditions by imposing subsidiary policies, capital market regulations, and educational policies. It can also influence domestic demand conditions by establishing product standards or regulations that direct customer needs. Barragan (2005) observed that a paternalistic government that protects indigenous firms from foreign firms is not encouraging increases in productivity or quality. Thus, when the free market does take place, these firms are not prepared for that challenge.

On the other hand, a government that is working to reduce bureaucratic red tape and facilitate the process of opening a new business will encourage the entrepreneurial spirit. Similarly, government encouragement of joint ventures with foreign firms will facilitate the transfer of technology. Competition laws, tax policy, and other regulatory statutes can affect both supporting industries and firm structure and strategy. One example of government policy is the economic form. Studies support that market-controlled economies are more efficient in improving productivity and innovation than those under government protection (Blumental, 1999). Wu (2006) in his study on the competitiveness of the Chinese automobile industry using Porter's Diamond model concluded that by controlling the entry of foreign firms into China, leveraging the foreign firm's desire for market access into technology transfer, and then partnering these foreign firms with centrally sanctioned domestic firms, the central government gives dramatic advantage to a chosen few business groups.

*Chance* is also another determinant that may affect or benefit a nation or industry. Barragan (2005) says chance is the likelihood that external events such as war and natural disasters can affect or benefit a country or industry, but these events are entirely out of the control of the governments or managers within the industries. Examples of chance events include pure invention, breakthroughs in basic technologies, wars, economic crisis, and major shifts in foreign market demand. Porter (1998) said they create discontinuities that can unfreeze or reshape industry structure and thus play an important role in shifting competitive advantage in many industries. Porter (1990) proposed that firms promote continuous innovation and improvement, and endeavor to seize opportunity resulting from chance events.

Lastly the determinant of *clusters* also plays a role in the diamond model. Porter (1998) says a cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. The geographical scope of a clusters range from a single city or state to a country or even a network of neighbouring countries. Clusters can take various shapes depending on their depth and sophistication.

Most clusters include end-product or service companies; suppliers of specialized inputs, components, machinery and also often include downstream industries; producers of complimentary products, specialized infrastructure providers; government and other institutions providing specialized training, education, information, research, and technical support and standards setting agencies. Government agencies that significantly influence a cluster form part of it.

Bell (2005) found that firms inside a cluster innovate at a greater level than the ones outside because better communication and more efficient supply chain management enhance the learning and knowledge creation processes. Poudier and St John (1996) and Bell (2005) find out that firms inside the cluster innovate in greater levels than the ones outside the cluster. Porter and Stern (2001) argue that related industries concentrated in geographical regions improve the innovation process. The networks established within the cluster also increase communication (Podolny and Page, 1998; Porter, 1998). This flow of communication among firms nurtures the learning process (Powell, Koput, and Smith-Doerr, 1996) and creates knowledge.

Wu (2006) says these determinants create the national environment in which companies are born and learn how to compete with each point of the diamond and the diamond as a system --affects essential ingredients for achieving international competitive success in the industry; the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes opportunities that companies perceive and the directions in which they deploy their resources and skills; the goals of the owners, managers, and individuals in companies; and most important, the pressures on companies to invest and innovate.

Smith (2010) says it is important to recognize that when the Diamond Model was proposed by Porter (1990), it represented a substantially different paradigm to assess the competitiveness of a country. Previous theories such as, Absolute Advantage Theory (Smith, 1776) and the Comparative Advantage Theory (Ricardo, 1817) focused on each country's factors of production: land, labour cost, capital, and natural resources.



According to Adam Smith, the wealth of nations was determined by the total output of production, given specific resources. As modified by Ricardo, the opportunity cost of resource deployment, not simple productivity, would determine the advantage for one country in comparison with another. In either case, however, a country was seen to be more competitive than another based fundamentally on the factors of production or endowments it enjoyed. Barragan (2005) pointed out that the problem is that when this theory found support in the eighteenth and nineteenth century, only lower skills were necessary for competition. In those days, natural resources and factors of production were the main source of competitive advantages (Porter, 1990). However, as increased technological innovation and globalization of the markets have taken place, theories based primarily on factor endowments can not explain either the success of some countries that lack natural resources, or the poor performance of countries that have enormous natural endowments.

Porter (1990) argues that productivity is the main factor for international competitiveness and that the standard of living of a country's population can be improved as a direct result of increases in that factor. Productivity relies on increasing workers' skills, developing technologies, producing quality products, and reducing costs. At the national level, productivity can be increased when the industries in a particular country "upgrade" themselves to improve efficiencies. For instance, an increase in technology can boost productivity and at the same time, can facilitate the production of differentiated products with much added value for customers. Porter (1990) explains that a country should focus on some industries that can be highly successful, because it is not possible to be highly competitive in every industry.

To lay the theoretical underpinnings of this interplay of country and industry competitiveness issues, Porter (1990) developed The Diamond Model which consists of four national determinants of competitive advantage in a particular industry. These four sources of competitive advantage can produce a fertile soil to build an internationally competitive industry in a country. In other words, some industries, in a particular country, have strong diamonds, while others have weak ones.

When a national environment affords better ongoing information and insight into product and process needs, companies gain a competitive advantage. When national environment pressures companies to innovate and invest, companies both gain a competitive advantage and upgrade those advantages over time (Porter, 1998). In his part, Grant (2000) concluded that Porter's diamond model is largely a bridge between strategic management and international economics. He analyzed industry competitiveness through the major determinants and the contribution of particular industries to national competitiveness. Wu (2006) in his study on the competitiveness of the Chinese auto industry focused on addressing the importance of government power as well as the contribution of multinational enterprises in China's automobile industry and pointed out that some scholars have applied and/or modified this diamond model to analyze either industry or national competitiveness in the past decade.

Many studies have analyzed national competitiveness using the original or modified diamond model. Since Porter's Diamond model includes primarily national factors and since globalization results in a growing extent of regional (and even global) integration, Dunning (1993) proposed to consider international factors when analyzing industry or national competitiveness. Wu (2006) pointed out that following this trend, Rugman and D'Cruz (1993) developed a double-diamond model where one angle of a national diamond is dependent on another nation's diamond. Cartwright's (1993) study on New Zealand's economy developed a multi-linked diamond for small, export-dependent nations where all determinants of national competitiveness are linked to global sourcing.

Although the diamond model was originally developed for national competitive analysis, Porter also provided industry case analyses in his sample nations, in order to show that the model can be approached at the industry level. Other scholars thus have used this model to analyze specific industry competitiveness. A recent study by Barragan (2005) tested the power of the double-diamond model in Mexico's automobile industry. Barclay and Gray (2001) provided a case study of the information service industry in Barbados.

Wu (2006) pointed out that two scholars Moon and Lee (2004) looked at the competitive performance of two multinational enterprises using the diamond model and proposed an enlarged diamond through foreign direct investment integration in all determinants. Smit (2010) further observes that diamond framework and its determinant on clusters and competition (Porter 1998b, 2000, 2004) is not about trade, patterns of trade, gains from trade, but is rather a general framework for analyzing country-specific sources of advantage that enhance the international competitive advantage of firms. It thus provides the link between firm and country-specific sources of competitive advantage those firms leverage to gain international competitive advantage. Country-specific advantages are not the same as comparative advantage. Country-specific advantages emphasize location as a source of international competitive advantage for firms, whereas comparative advantage emphasizes the sectoral composition of trade between countries.

## **2.5 Critiques of Porter's Diamond Model**

According to Grant (1991) Porter has built “a bridge between strategic management and international economics” because economists usually study a country as a whole with macroeconomic indicators such as: interest rate, inflation rate, while strategic management or international management scholars study firms, managers, and national cultures. He points out that the competitive advantage of nations (1990) focuses on clusters or industries as the unit of analysis, but at the end these industries are the actors that promote the country's competitiveness.

Smit (2010) says Porter's work on the Diamond framework and his work on clusters and competition (Porter 1998, 2000, 2004) is not about trade, patterns of trade, gains from trade, but is rather a general framework for analyzing country-specific sources of advantage that enhance the international competitive advantage of firms. Porter's (1990) He argues that Diamond framework thus provides the link between firm and country-specific sources of competitive advantage that firms leverage to gain international competitive advantage. Country-specific advantages are not the same as comparative advantage.

Barragan (2005) in his study floated two basic critiques regarding how Porter's model could be used to study a country's competitiveness: one the "doubled diamond" as compared with the single national diamond posited by Porter (Rugman and D'Cruz, 1993) and the role of Multinational Enterprises (MNEs) as empowering developing countries rather than constraining their growth (Dunning, 1993; Rugman and D'Cruz, 1993; Clancy, O'Mally, O'Connell, and Van Egeraat, 2001; O'Mally and O'Connell, 2001; Oz, 2002). Yetton.P.,Craig.J.,Davis.J., and Hilmer.F., (1992) in a study on the applicability of the model on the Australian economy concluded that Porter has not articulated a theory of national competitive advantage. Rather, it is a theory about the competitive advantage of firms and industries within nations, though even the emphasis on nations (physical proximity) is progressively watered down.

Secondly, (Dunning, 1993; Rugman and D'Cruz, 1993; Clancy, O'Mally, O'Connell, and Van Egeraat, 2001; O'Mally and O'Connell, 2001; Oz, 2002). Yetton.P.,Craig.J.,Davis.J., and Hilmer.F., (1992) observed that the Diamond theory is not complete in two key respects. It does not adequately deal with dynamics, such as, how new successful firms emerge and what might be done to encourage this, and it mis-describes or omits important types of firms such as those in non-traded sectors and resources. Put another way, Porter could be seen as promoting a theory for refocusing American or European firms on the essentials of global manufacturing in or near large markets, given that many of the ingredients of the diamond are already in place for them.

The use of Porter's diamond model to focus on a country's competitiveness globally does not take the attributes of a country's largest trading partner into account, is not applicable to most of the world's smaller nations (Cartwright, 1993) and ignores the role of multinational organizations in influencing the competitive success of nations (Dunning 1992, 1993). Rugman (1990) suggests an extension of Porter's diamond to include the attributes of the largest trading partner of the home country within this 'double-diamond' approach. Smit (2010) points out that Porter demonstrates that competitiveness depends on both domestic and foreign diamonds.

The 'double-diamond' concept has led to generalized double-diamond and multiple-diamond approaches (Dunning 1992, 1993; Bellak and Weiss 1993; Cartwright 1993; Moon, Rugman and Verbeke 1995), which can be viewed as extensions of and adjustments to the single-diamond model. These extensions attempt to explain the international competitive advantage of smaller or less industrialized countries and the influence of multinational activities on national diamonds. Criticism from the management school thus advances Porter's central thesis that countries, like firms, are somehow in competition with one another. Porter's (1990) view that the traditional and new trade theories are inadequate to explain modern trade patterns has resulted in more severe criticism from the economic school. According to Waverman (1995), the diamond is so general that it tries to explain all aspects of trade and competition, but ends up explaining nothing.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This study focused on analyzing the Kenyan sugar industry within the conceptual framework on Porter's Diamond model and its determinants namely; related and supporting industries, firm structure and strategy as well as the role of the government in ensuring competitiveness in an industry.

### **3.2 Research Design**

The study involved a cross-sectional survey on the state of operations among players in the Kenyan sugar industry using the Porter's Diamond model as a tool. Thus, this study focused on analyzing related and supporting industries, firm structure and strategy, and the role of government with regard to overall competitiveness of the industry.

### **3.3 The Population**

All the seven sugar manufacturing firms in operation as at January 2009 constituted the population of the census study. (Appendix B). All the sugar firms identified above were constituted in the sample for the study because the number was so few that a complete census was warranted.

### **3.4 Data Collection**

Primary data was collected through the use of semi-structure questionnaires administered on the CEOs or departmental heads of the companies through personal interviews to record responses relating to the various variables in the sugar industry. The questions were divided into several sub-headings with the first one specifically targeted at gathering data about the general background of the firms. The subsequent sub-headings looked at aspects of competitiveness and strategies employed and the challenges facing their attainment. The final sub-headings of the questionnaire consisted of mainly closed questions, which sought information on the determinants of Porter's Diamond model as a tool to testing industry competitiveness.

### **3.5 Data Analysis**

Analysis of data was done to determine if any relationships exist (and the strength of such relationships) between industry characteristics such as services offered and socio/economic factors such as age of company, size determined by number of employees and type of ownership. This was done mainly using simple percentage analysis. Based on the Diamond industry analysis model variables were identified which had the availability to influence competitiveness in the industry and mapped as percentage of the entire sample.

## CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF RESULTS

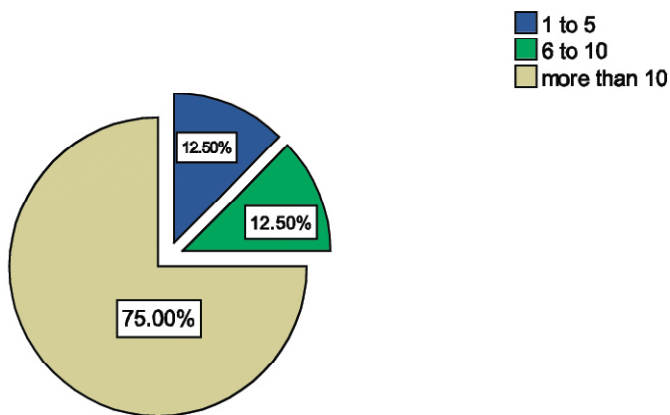
### 4.1 Introduction

This chapter deals with data analysis, findings and discussions. The data is summarized in the form of descriptive percentages and tables were incorporated where appropriate. Data was obtained from all companies included in the sample.

#### 4.2.1 Overview of the companies' characteristics

The majority (75 percent) of the millers are more than ten years old. (Fig 2). Half of the firms are limited liability companies while half are publicly owned. The entire respondent sample indicated that they have more than 50 employees, including even Miwani Sugar Company which was under receivership at the time the survey was conducted.

**Fig. 2: Age of millers**

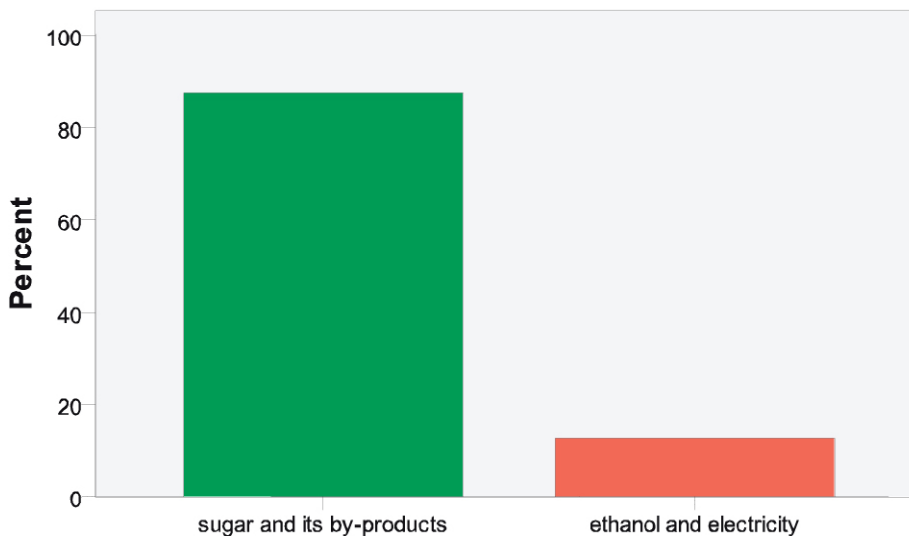




#### 4.2.2 Products offered in the sugar industry

The mainstay of the Kenyan sugar industry is the production of table sugar and related by-products such as molasses. With an exception of Mumias Sugar Company, which has diversified its products into ethanol and electricity production, the rest of the sugar firms (90 percent) involved in the survey only produce sugar and its directly related by-products like molasses (Fig 3). Most of them however indicated willingness to venture into ethanol production.

**Fig. 3: Response on product offered in sugar**



#### 4.2.3 Barriers to Industry Entry

Based on the responses (Table 1) high cost of start-up capital remains the biggest hindrance to new entrants (100 percent) in to the industry; while rules and regulations by government is considered to have the least impact on new players seeking to venture into the business. The other factors are considered general across the board. This infers to the fact the Kenya sugar industry is a very high cost sub-sector despite government efforts to support both existing and prospective players.

**Table 1: Responses on barriers to entry into the industry****N=7**

<b>Barrier to Entry</b>	<b>Percentage response</b>
High cost of capital	100%
Technology Gap	75%
Lack of raw material	75%
Government Bureaucracy	75%
KSB rules and regulations	75%
Rules and regulation by government	62.5%
Other existing players	75%

#### **4.2.4 Problems facing companies in the sub-sector**

Among all the sampled companies, the most serious problem is perceived to be the high cost cane (87.5 percent). Poor road infrastructure also emerged as key challenge with 75 percent of the respondents indicating that it posed a serious threat to their operations. Most of the companies (75 percent) also identified the current government policy and regulations as stumbling block to their operations. All sample companies, both old and new, felt that demand for their products is high with 87.5 percent of them terming lack of demand as not being a serious threat. Aging factory machinery is yet another serious problem identified by millers (62.5 percent) alongside high taxation by the government (62.5 percent). Majority of the companies (62.5 percent) cited lack of funds for expansion and modernization as another major drawback with the problem being more prevalent within the state-run factories (Table 2).

**Table 2: Responses on problems faced in the industry**

N=7

<b>Problem faced</b>	<b>Very serious</b>	<b>Fairly serious</b>	<b>Not serious</b>	<b>Not serious at all</b>
Poor roads/infrastructure	75%	12.5%	12.5%	-
Competition from cheaper imports	50%	37.5%	12.5%	
Lack of research on fast growing cane varieties		50%	37.5%	12.5%
High Taxes	62.5%	37.5%		
Aging Machinery	62.5%		37.5%	
High cost of cane	87.5%	12.5%		
High cost of labour	12.5%	25%	62.5%	
Poor distributor channels		37.5%	62.5%	
Govt Policy/Regulation		75%	25%	
Demand for products		12.5%	87.5%	
Poor production technology		62.5%	37.5%	
Lack of funds	62.5%	25%	12.5%	
Competition from local rivals	50%	37.5%	12.5%	

Among the sampled companies, high cost cane (87.5 percent) emerged the biggest problem. Poor road infrastructure also emerged as key challenge with 75 percent of the respondents indicating it posed a serious threat to their operations. Most of the companies (75 percent) also identified government policy and regulations as stumbling block to their operations. Sample companies, both old and new, felt that demand for their products is high with 87.5 percent of them terming lack of demand as not being a serious threat. Aging factory machinery is yet another serious problem identified by millers (62.5 percent) alongside high taxation by the government (62.5 percent).

### **4.3 Discussion of the Porter's Diamond model determinants in the sugar industry**

This section seeks to discuss the outcomes registered when the sugar industry was mapped against the determinants as spelt out by Porter's diamond model in a bid to gauge the overall competitiveness of the industry.

#### **4.3.1 Factor Conditions**

The poor state of roads infrastructure heavily affects the operational cost in the sugar industry (Table 3). All companies either strongly agreed (87.5 percent) or agreed (12.5 percent) that the factor heavily impacted on their costs, an issue supported by the fact that a huge part of operations at the millers involves hauling cane from the fields to the factory for crushing. This reflects in the overall prices of cane which then impact on the cost of the final product leaving little headroom for consumer demand because of the high prices of sugar. Most respondents indicated that the cost of cane is also prohibitive going by the fact that much of the supply is of low sucrose content and the resultant high cost are then passed on to consumers.

In terms of capital required to enter the industry most players strongly agreed (75 percent) that a lot funds are required to make an entry. This is supported by the simple logic of the costly machinery needed to establish a milling plant, acquire land for both the factory premises and nucleus cane estate that would ensure reliable supplies to the factory. Majority (50 percent) of the companies said the existing milling factories are not operating effectively and efficiently partly due to aging majority. Further to this most millers (50 percent), especially the government owned, also said finding access to capital for expansion and modernization remains a serious challenge due to current debts that clouded their books of account.

**Table 3: Responses on factor conditions**

N=7

<b>Factor</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
A lot of capital is required to enter this industry				25%	75%
Finding raw material is tedious and expensive			25%	62.5%	12.5%
Skilled and non-skilled labour is readily available and affordable			50%	37.5%	12.5%
Sources of energy to run production is sufficient and reliable		50%	50%		
The poor state of roads increases our costs significantly				12.5%	87.5%
Technology in the industry is sufficient and helpful in production	25%	12.5%	50%	12.5%	
The milling factories are operating effectively and efficiently	25%	50%	25%		
Access to capital for expansion and modernization is easy		50%	50%		

### 4.3.2 Demand Conditions and Chances

The findings indicate that the demand for sugar and related products remains very strong in the country (62.5 percent) albeit higher than demand in the region (25 percent). The country remains a net importer of sugar with an average 220,000 tonnes of the commodity brought into the local market every year mainly from the COMESA region. This is partially attributable to high cost of capital required to enter the industry that has kept production capacity low, hence a mis-match between production and demand.

Faced with dynamism in the operating environment most companies are alive to the unavoidable quest to change for survival. Most of them both old and new see a very huge potential (75 percent) in opening new products such as ethanol to gain some form of competitive advantage. The current consumer behaviour, that is inclined towards more healthy lifestyles, is believed to be indicative of future trends and sugar companies are keen to obey the trend. Most companies say they must respond to consumer behaviour, (37.5 percent) agreed and (25 percent) strongly agreed.

**Table 4: Responses to demand conditions and chances**

**N=7**

The demand for sugar and related by products is huge in the country				37.5%	62.5%
The demand for sugar and related by products is huge in the region			37.5%	37.5%	25%
The potential of opening new product fronts such as ethanol is huge				25%	75%
Consumer behaviour for products locally points to future trends in the global markets			37.5%	37.5%	25%

### 4.3.3 Government

The influence of government actions in the industry has a big impact on the operations of the industry. Majority of companies (62.5 percent) indicated that high taxation by government added a significant cost to their business (Table 5). Half of the millers, especially parastatals, also stated that the government interferes very much with their operations in terms of interferences with management decisions. This is by virtue of the fact that they are still they are under the direct management of the Agriculture ministry which has to sanction most of the decisions they make on key matters such as production. Most respondents (50 percent) however agreed that the current government policies regulating the inflow of duty-free consignment of sugar in the industry has greatly helped them deal with the threats of cheap imports.

**Table 5: Responses on government role in industry**

**N=7**

Government interferes very much with our operations			25%	25%	50%
Taxes by government add a significant cost to our business				37.5%	62.5%
Policies by government help cushion against cheap imports			12.5%	37.5%	50%
The country's business climate is ideal for investment			62.5%	37.5%	

#### 4.3.4 Firm strategy, structure and rivalry

Most respondents(50 percent) indicated that companies that have been in the industry for longer have advantages over new ones on several grounds such as the establishment of good network of farmers to supply cane for milling (Table 6) . A majority (75 percent) also alluded to the fact that the number of players in the industry has influence on the style of operations with the sheer number of competitors putting every company on its toes to perform better or lose out. Further to that most companies (75 percent) also pointed out that the localization of firms in one region puts pressure on them to be innovative or remain behind. Due to the close proximity, consumers are ready to pick out the best alternative products and services offered by the companies and therefore tend to be hard on them.

**Table 6: Responses on firm strategy, structure and rivalry** N=7

Companies that have been in the industry for long have special advantages that others don't have	12.5%		12.5%	50%	25%
The business environment in Kenya shapes the structure, size and hierarchy of firms		12.5%	12.5%	50%	25%
The number of players in the industry has influence the style operations		12.5%	12.5%		75%
The localization of firms in one region has increased pressure in the industry to innovate			12.5%	12.5%	75%



#### 4.3.5 Related and supporting industries

A dominant view among sugar companies is that ties with researcher institutions (50 percent) have contributed to growth in the industry by ensuring the development of quality and high yielding cane varieties (Table 7). Sugarcane is the main raw material in the operations of the companies and the quality or extraction has a direct bearing the final product offered to the market.

**Table 7: Responses on related and supporting industries** N=7

The work relation between the government, millers, regulators and researchers is strong	12.5%	25%	12.5%	12.5%	37.5%
Ties with researcher institutions have contributed to success in the industry		12.5%	12.5%	25%	50%
The link between suppliers both local and international is effective and efficient	25%	25%		25%	25%
The product distribution networks are vibrant and effective		25%	25%	50%	
The cluster grouping of firms in common zones has helped improve operations of players in the industry	25%	50%		25%	

Majority (50 percent) also feel that cluster grouping of firms in common zones has not helped improve their operations because players operated as individual entities and did not come up with meaningful work relations that would help drive performance as a unit. Most millers (37.5 percent) however feel that the existing work relation between the government, millers, regulators and researchers is strong and could only be improved to help ensure success in the industry.

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

### **5.1 Summary of key findings**

Clearly the sugar industry in Kenya is fairly mature with most of the firms (75 percent) having been in operation for more than ten years. The ownership of the firms is equally balanced between limited liability companies (50 percent) and public companies (50 percent). Of all the sampled companies, only Mumias Sugar Company has a distinction of exporting electricity to the national power grid from its 28MW co-generation facility. Production of table sugar remains the mainstay in the Kenyan sugar industry with the production of the molasses by-product also featuring across all the firms.

The poor state of roads infrastructure emerged as the single biggest factor that heavily affects the cost incurred when operating in the sugar industry in Kenya. All the companies surveyed either strongly agreed (87.5 percent) or agreed (12.5 percent) that the factor heavily impacted on their overall operational costs, a concern buttressed by the simple fact that a huge part of the millers' day-to-day operations involved haulage of cane from the growing fields to the factory for crushing. In terms of capital required to enter the industry most players strongly agreed (75 percent) that a lot capital is required to make an entry, a fact that is supported by the simple logic of huge and expensive machinery needed to establish a milling plant, acquire land for both the factory premises and nucleus cane estate that would ensure reliable supplies to the factory. According to the survey an entrepreneur requires capital of about Shs 1billion per 1,000 TCD capacity factory.

The aging state of the current production mills is another outstanding factor with the majority (50 percent) of the companies pointing out that they are not operating effectively and efficiently partly due to old equipment. Further to this most millers (50 percent), especially the government owned, also said finding access to capital for expansion and modernization remains a serious challenge due to current debts that clouded their books of account.

Reliable and affordable supply of cane raw material is also a major challenge with a majority (78 percent) of the companies raising a red flag. The poor state of road infrastructure has heavily driven up the cost of cane since the cost of transportation comprises about 35percent of the overall cost. Besides, the current payment system based on tonnage is considered injurious by the millers because much of the cane supplied contains little content of sucrose which is the main extract sort in cane.

The demand for sugar and by-products in the country remains huge with 62.5 percent of the respondents seeing future ready market for their products. Most of them, both old and new, even see a very huge potential (75 percent) in opening new products such as ethanol to gain some form of competitive advantage. This means the industry has a huge potential for growth.

A dominant view among sugar companies is that ties with researcher institutions (50 percent) have contributed to growth in the industry by ensuring the development of quality and high yielding cane varieties. Sugarcane is the main raw material in the operations of the companies and the quality or extraction has a direct bearing the final product offered to the market.

Majority (50 percent) also feel that cluster grouping of firms in common zones has not helped improve their operations because players operated as individual entities and did not come up with meaning work relations that would help drive performance as a unit. Most millers (37.5 percent) however feel that the existing work relation between the government, millers, regulators and researchers is strong and could only be improved to help ensure success in the industry. A majority (75 percent) also alluded to the fact that the number of players in the industry has influence on the style of operations with the sheer number of competitors putting every company on its toes to perform better or lose out. Further to that most companies (75 percent) also pointed out that the localization of firms in one region puts pressure on them to be innovative or remain behind.

Majority of companies (62.5 percent) indicated that high taxation by government added a significant cost to their business. Half of the millers, especially parastatals, also stated that the government interferes very much with their operations in terms of interferences with management decisions. This is by virtue of the fact that they are still they are under the direct management of the Agriculture ministry which has to sanction most of the decisions they make on key matters such as production.

## **5.2 Conclusions**

The Kenyan sugar industry clearly draws mixed variations in terms of competitiveness when mapped against the main determinants that make up Porter's diamond model. From the findings of the study each of the four the determinants brings out both the strong and weak points of the industry.

Factor conditions emerged a weak link within the diamond with most respondents (87.5 percent) concurring that the poor state of roads infrastructure heavily affects the operational cost in the sugar industry, an issue supported by the fact that a huge part of operations at the millers involves hauling cane from the fields to the factory for crushing. This reflects in the overall prices of cane which then impact on the cost of the final product leaving little headroom for consumer demand because of the high prices of sugar. Most respondents indicated that the cost of cane is also prohibitive going by the fact that much of the supply is of low sucrose content and the resultant high cost are then passed on to consumers.

The determinant on demand conditions and chances is however quiet strong in the Kenyan sugar industry with findings from the study indicating that the demand for sugar and related products is good in the country (62.5 percent) albeit higher than demand in the region (25 percent). The country remains a net importer of sugar with an average 220,000 tonnes of the commodity brought into the local market every year mainly from the COMESA region. Faced with dynamism in the operating environment most companies are alive to the unavoidable quest to change for survival.

Most of them, both old and new, see a very huge potential (75 percent) in opening new products such as ethanol to gain some form of competitive advantage. The current consumer behaviour, that is inclined towards more healthy lifestyles, is believed to be indicative of future trends and sugar companies are keen to obey the trend. Most companies say they must respond to consumer behaviour, (37.5 percent) agreed and (25 percent) strongly agreed.

Another determinant-- firm strategy, structure and rivalry also emerges as a strong and supportive link in the Kenyan sugar industry. A majority (75 percent) of respondents pointed to the fact that the number of players in the industry has influence on the style of operations with the sheer number of competitors putting every company on its toes to perform better or lose out. Further to that most companies (75 percent) also pointed out that the localization of firms in one region puts pressure on them to be innovative or remain behind. Due to the close proximity, consumers are ready to pick out the best alternative products and services offered by the companies.

Finally the determinant on related and supporting industries presents a good performance potential for the Kenyan sugar industry. From the findings of the study, a dominant view among sugar companies is that ties with researcher institutions (50 percent) have contributed to growth in the industry by ensuring the development of quality and high yielding cane varieties (Table 7). Sugarcane is the main raw material in the operations of the companies and the quality or extraction has a direct bearing the final product offered to the market. Majority (50 percent) however also feel that cluster grouping of firms in common zones has not helped improve their operations because players operated as individual entities and did not come up with meaning work relations that would help drive performance as a unit. Most millers (37.5 percent) however feel that the existing work relation between the government, millers, regulators and researchers is strong and could only be improved to help ensure success in the industry.

Based on the inferences on the determinants, it is clear that factor conditions remain the weakest link in the Kenyan sugar industry. This cannot allow for the optimal performance of the industry because it draws back the other main determinants in the diamond and compromises the industry's competitiveness leaving it weak and unable to perform optimally.

### **5.3 Recommendations**

To revamp the competitiveness of the Kenyan sugar industry, both the government and players in the sub-sector need to urgently address the poor state of the road infrastructure in the various sugar-belts that are mainly situated within western Kenya. By virtue of the road network being critical in the movement of cane raw material, ensuring smooth movement of haulage vehicles would ensure efficiency and effectiveness in the entire chain and as such boost other determinants of competitiveness in the industry.

The restructure of the huge debts in the industry would also help spur the competitiveness of the millers in the Kenya sugar industry currently disadvantaged by aging and obsolete factory machines. The debts crisis is biggest among the government-run institutions who are unable to attract any new capital from potential strategic investors despite a huge need for modernization and expansion of their factories.

### **5.4 Limitation of study and suggestions for future research**

The study was only limited to sugar millers only. A wider study is required to incorporate other players such as jaggeries in order to confirm these findings. The sample of millers was quite small and did not allow for sufficient contrasting and verification.

### **5.5 Implication on policy and practices**

Findings of this study will benefit sugar industry managers and the Government of Kenya by providing valuable insights when sponsoring reforms in the sub-sector. It will help in prescribing guidelines and policies. The study will also be useful to academicians and scholars wishing to use it as a source of reference, or carry out further research as it contributes to existing literature in the field of gauging industry competitiveness.

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## **APPENDIX A**

### **List of firms in Kenya Sugar Industry**

1. Mumias Sugar Company
2. Muhoroni Sugar Company
3. South Nyanza Sugar Company
4. Nzoia Sugar Company
5. Chemelil Sugar Company
6. Miwani Sugar Company
7. West Kenya Sugar Company

Source: Economic Survey 2010

**APPENDIX B**  
**REQUEST LETTER AND CONSENT FORM**

September 2010

To Whom It May Concern:

Re: Competitiveness of Kenya's Sugar Industry Study

My name is Allan Odhiambo Akombo and I'm student working on my Master of Business Administration project at the University of Nairobi. I would like to request you to participate in a face-to-face interview for my research project on the competitive advantage of the Kenyan sugar industry.

The purpose of this study is to understand the competitive positions of domestic sugar manufacturers, as well as the sources of competitiveness of the entire industry, such as related supporting industries, factor conditions, demand conditions and firm strategy.

Here in Kenya today the government particularly still plays a key role in stimulating and regulating the overall market, the study is also intended to understand the contribution and limitation of current policies in the sugar industry.

Your participation will add significant value to this study on the Kenyan sugar market. The benefits of this project are primarily academic but may have both policy and practical implications. Your participation in the interview is entirely voluntary. You have the right to not participate or not answer certain questions with no consequences.

All the information received from you and your company/institution will be kept anonymous and confidential. The face-to-face interviews will take about 20-30 minutes and if you may be interested in the final findings of my research, you can contact me or my supervisor (by phone or by email) and request a copy of my project report by the end of December 2010.

I am looking forward to listening to your significant insights on the Kenyan sugar industry.

Yours truly,

Allan Odhiambo, MBA (Strategic Management) Candidate,

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Dr Wahome Gakuru, project supervisor Tel 0736779902,wagakuru@gmail.com

**APPENDIX D**  
**QUESTIONNAIRE**

**Interviewer's name**..... **Date**.....  
**Interviewee's name**..... **Questionnaire No.**.....  
**Position held**..... **Name of company**.....  
**Location**..... **Address**.....**Telephone**.....

**PART I**

Instructions:  
Please check the relevant box

1. How old is your firm/institution?
  - (a) 1-5
  - (b) 6-10
  - (c) >10
  
2. Number of employees?
  - (a) < 20
  - (b) 20-50
  - (c) > 50
  
3. Is you firm/institutional?
  - Sole proprietorship
  - Partnership
  - Limited liability Company
  - Public

**PART II**

**To Measure Competitiveness, Strategies Companies Use and Challenges Faced**

4. In your opinion what are the basic/minimum requirements needed in order to enter and operate in this business?

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5. Do your competitors offer the same kind of products/services you do?

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6. What does your company do so that it performs better than others in the industry?

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7. What are the specific barriers firms face in trying to enter this business today? **(Tick as many as are appropriate)**

- High cost of capital
- Technology gap
- Lack of raw material
- Government bureaucracy in getting licences
- Rules and regulation by Kenya Sugar Board on how business should be run
- Rules and regulation by government on how business should be run
- Companies in the industry exert influence on who can join

8. How do you cooperate with other players in the industry?

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9. How serious are the following problems to your firm? **(Rank in order of importance from 1-5 with a very serious problem being No.5 and least serious No.1)**

<b>Problem faced</b>	<b>Very serious 5</b>	<b>Fairly serious 4</b>	<b>Not sure 3</b>	<b>Not serious 2</b>	<b>Not serious at all 1</b>
Poor roads/infrastructure					
Competition from cheaper imports					
Lack of research on fast growing cane varieties					
High Taxes					
Aging Machinery					
High cost of cane					
High cost of labour					
Poor distributor channels					
Govt Policy/Regulation					
Demand for products					
Poor production technology					
Lack of funds					
Competition from local rivals					



### PART III

10. Below are statements that describe the state of the sugar industry today. Please rate the extent to which you agree or disagree with each statement on a scale of 1-5 where 1= strongly disagree and 5= strongly agree. **(Tick as appropriate)**

<b>Strongly Disagree</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Strongly Agree</b>
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**(a) Factor conditions**

		CODE				
A	A lot of capital is required to enter this industry	1	2	3	4	5
B	Finding raw material is tedious and expensive	1	2	3	4	5
C	Skilled and non-skilled labour is readily available and affordable	1	2	3	4	5
D	Sources of energy to run production is sufficient and reliable	1	2	3	4	5
E	The poor state of roads increases our costs significantly	1	2	3	4	5
F	Technology in the industry is sufficient and helpful in production	1	2	3	4	5
G	The milling factories are operating effectively and efficiently	1	2	3	4	5
H	Access to capital for expansion and modernization is easy	1	2	3	4	5

**(b) Demand conditions and chances**

		CODE				
I	The demand for sugar and related by products is huge in the country	1	2	3	4	5
J	The demand for sugar and related by products is huge in the region	1	2	3	4	5
K	The potential of opening new product fronts such as ethanol is huge	1	2	3	4	5
M	Consumer behaviour for products locally points to future trends in the global markets	1	2	3	4	5

**(c) Government**

		CODE				
N	Government interferes very much with our operations	1	2	3	4	5
O	Taxes by government add a significant cost to our business	1	2	3	4	5
P	Policies by government help cushion against cheap imports	1	2	3	4	5
Q	The country's business climate is ideal for investment	1	2	3	4	5

### 11. Firm strategy, structure and rivalry

		<b>CODE</b>				
R	Companies that have been in the industry for long have special advantages that others don't have	1	2	3	4	5
S	The business environment in Kenya shapes the structure, size and hierarchy of firms	1	2	3	4	5
T	The number of players in the industry has influence the style operations	1	2	3	4	5
U	The localisation of firms in one region has increased pressure in the industry to innovate	1	2	3	4	5

### 12. Related and supporting industries

		<b>CODE</b>				
V	The work relation between the government, millers, regulators and researchers is strong	1	2	3	4	5
W	Ties with researcher institutions have contributed to success in the industry	1	2	3	4	5
X	The link between suppliers both local and international is effective and efficient	1	2	3	4	5
Y	The product distribution networks are vibrant and effective	1	2	3	4	5
Z	The cluster grouping of farms in common zones has helped improve operations of players in the industry	1	2	3	4	5

**THANK RESPONDENT AND CLOSE INTERVIEW**