DETERMINANTS OF MACHAKOS COUNTY MANUFACTURING SECTOR

COMPETITIVENESS AND APPLICABILITY OF PORTER'S DIAMOND MODEL

BY

EVANS NYAKWARA NYAMBANE

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DECLARATION

This management research project is my original work and has not been submitted for another degree award of this or any other University.

Signed: …………………………………….   Date: ……………………………….

Evans N. Nyambane

D61/68255/2011

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

Supervisor: **Dr Mary Kinoti**   Signature: ………………….   Date: ………………

Senior Lecturer, Department of Business Administration

School of Business,

University of Nairobi

DEDICATION

I dedicate this study to my loving wife Phyllis Kwamboka for her support all round and to our brilliant children Michal and Jason who despite their tender ages have been very understanding and an encouragement.

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I would like to thank all those who helped me to ensure the success of this project. First and foremost my colleagues in the office specifically my boss Julius who understood the many times I excused myself from the office to undertake the study. This also applies to the employees of different companies that took time out of their busy schedule to respond to my questionnaire.

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ABBREVIATIONS

EPZ   Export Processing Zone

GDP   Gross Domestic Product

GRP   Gross Regional Product

KAM   Kenya Association of Manufacturers

KNBS   Kenya National Bureau of Standards

R&D   Research and Development

SME   Small Medium Enterprise

SPSS   Statistical Package for Social Sciences

UK   United Kingdom

USA   United States of America

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ABSTRACT

Assessing a country's competitiveness and devising policies to enhance competitiveness have become officially institutionalized tasks at both national and regional levels. This study was designed to establish the determinants of Machakos County manufacturing sector competitiveness and to assess whether those determinants can be explained by Porter's Diamond model. A descriptive census survey design was used in the study. Data was collected using semi-structured questionnaires which were administered through the drop and pick later method. 47 out of the targeted 65 respondents duly filled and returned the questionnaires for analysis giving a response rate of 72%.

The findings from the study indicate that Machakos County manufacturing sector is competitive compared to other counties with the following factors contributing to business success: access to raw materials, proximity to the City of Nairobi, proximity to the airport and low cost of production such as energy, labour, transport among others. The study further found that political stability and conducive county government policies influence business success to a moderate extent that is partly explained by the fact that counties have been in operation in Kenya for less than one year. While Porter (1990) in his well known Diamond identified four determinants of competitive advantage namely; factor conditions, demand conditions, related and supporting industries and firm strategy and rivalry, this study found that only three of those determinants can be used to explain the competitiveness of Machakos County manufacturing sector. The determinants include factor conditions (land, labour and electricity and the county's location especially its proximity to the City of Nairobi and airport), related and supporting industries (insurance companies, learning institutions, local suppliers) and firm strategies (marketing innovation, product packaging and advertising).

From the study findings, it was recommended that county government policies should be aimed at creating conducive environment for manufacturers willing to invest in Machakos County through tax breaks for business start-ups and demand stimulation. R&D institutions should be set-up within the county and collaboration encouraged with manufacturing firms so as to improve product range though new products hence making the county even more competitive.

CHAPTER ONE: INTRODUCTION

1.1 Background

Most countries in the modern world find themselves more integrated into the global economy (Young, 1985). In that scenario, the importance of competitive advantage is enormous as trade agreements have forced firms to face competition from domestic and global competitors. In general, national macro-economic factors such as exchange and interest rates or government deficits are cited by many theorists as having a significant role in competition. Nevertheless, there are examples of nations that have achieved international success in spite of adverse macro-economic conditions (Barbe and Triay, 2011).

According to Dunning (1995), competitiveness depends on natural endowments. Therefore, nations rich in natural resources should gain competitiveness easier than those less fortunate on natural endowments (Heckscher, 1991). However, the lack of natural resources has not prevented firms from some nations such as Japan from achieving international competitiveness. Other Scholars have pointed at government policy as the main factor responsible for achieving national prosperity (Dunning, 1995). However, most of the traditional theories and models fail to account for many factors that are important to explain competitiveness in specific sectors. Porter (1990) has been the main contributor to the development of a framework that explains the way in which a firm's domestic environment shapes its competitive success over time and why some nation's industries succeed at international trade where others fail. He maintains that a nation succeeds where the country's environment helps to develop the 'proper' strategy for a particular industry.

Kenya's vision 2030 is aimed at enhancing the country's competitiveness in the global market. Having recognized devolution as one of the critical enablers of the vision, the Government has

empowered the counties which are expected to shape the competitive environment for local firms. Machakos County and the other 46 counties will compete to be top destinations for say investment, new business location for manufacturers, education, working, living or touring.

1.1.1 The concept of Competitiveness

Business literature is full of conceptual works pertaining to competitiveness. However, the concept has still not been well defined (Connor, 2003). The term is difficult to understand due to the fact that the term is used at different levels of aggregation, leading to different meanings as well as different indicators. Competitiveness according to Khemani (1997) should be equated with productivity. It relates to measures that firms, industries, regions, and governments adopt to foster, maintain and increase productivity on a sustainable basis. Krugman (1990) also argues that if competitiveness has any meaning, then it is simply another way of saying productivity.

Evolution of the competitiveness debate has oscillated around three ideas: market share, costs, and productivity. When the term competitiveness first gained prominence in the 1980s, the public debate in the USA was dominated by fears about the rise of the Japanese economy. Competitiveness was associated with lower labor costs and policies that helped companies gain market share in the global market place. Here, competitiveness was a zero-sum game: a country could only improve its competitiveness at the expense of another country (Delgado et al, 2012).

Economists and experts everywhere have elevated 'competitiveness' to the status of a natural law of the modern capitalist economy. To assess a country's competitiveness and to devise policies to enhance it have become officially institutionalized tasks in many nations, e.g. the USA, the UK, Belgium, Italy and Japan. The USA led the way in the early 1990s by setting up a governmental Competitiveness Policy Council to report regularly on and to promote the

competiveness of the US economy (Kitson et al, 2004). Competiveness is important if the nation's firms are to take advantage of the opportunities presented by the international economy. Competitiveness is also important if a nation's firms are to guard against the threats posed by the international economy since competition has become fiercer than ever before and has put pressure on a nation's economic actors, including management, labour and government.

This study is based on the concept of competitiveness of the region that incorporates theories that analyze individual regions as independent subjects of international economic activity with emphasis on the formation of local competitive advantages. Three theories that are particularly important include: the theory of flexible specialization (Piore and Sabel, 1984); the theory of cumulative competitiveness of regions (McCombie and Setterfield, 1994); and the theory of regional internal growth (Martin and Sanley, 1998). The authors of the theories underline the positive effect of emergence of a specific inter-firm environment favorable for prompt spreading of information among them and, as a result, timely introduction of necessary innovations.

1.1.2 Determinants of Competitiveness

Drivers of competitiveness vary from one country to another and can be grouped into two main areas: macroeconomic and microeconomic. Macroeconomic competitiveness is driven by a range of institutions, policies, and public good investments that set the context for an entire economy. Social infrastructure (education, healthcare and public safety) and political institutions define the broader context in which productive economic activity takes place (Hall and Jones, 1999). Microeconomic factors are those that have a direct influence on company productivity and labor force mobilization and includes factor endowments and demand conditions.

European experts single out three groups of key factors determining the international competitive status of a region: infrastructure and accessibility; human assets; industrial environment that, in turn, include certain sub-factors. Sub-factors under infrastructure and accessibility include basic infrastructure, technological infrastructure, infrastructure of knowledge and habitat quality. Human assets include demographic trends and highly skilled labour force. Industrial environment include factors such as entrepreneurial culture, sectoral concentration, internationalization, specialization, innovation, nature and pattern of competition, sufficiency of manufacturing resources, Government and institutional capability (Brykova, 2007).

Thompson (1961) on the other hand identified five main determinants of competitiveness: access to markets, location relative to raw materials, transportation costs, availability and cost of energy resources, and labor costs. A 1989 review of econometric studies by Milward and Newman (1989) similarly found that traditionally the primary factors influencing site selection by businesses were access to labor (measured usually by the supply of labor), labor costs (and unionization), transportation (number of highways and proximity of railroads), access to markets, and access to raw materials. Porter (1990) also developed a model that explains the different determinants that either promote or inhibit competitiveness.

1.1.3 Porter's Diamond Model

Porter (1990) conducted a study of 10 nations to develop an analytical framework, which tries to explain why a nation succeeds in particular industries but not in others. After an extensive analysis, Porter developed a model that explains the different determinants that interact in creating an appropriate environment to allow specific industries have a competitive advantage. The model called the "Diamond" consists of four determinants: factor conditions, demand

conditions, related and supporting industries and firm strategy, structure and rivalry. Other two elements that influence the diamond are government and chance.

Porter's (1990) national "diamond is a comprehensive model that incorporates concepts from traditional trade theory, new strategic trade theory, the Resource Based View, and the role of innovation introduced by Schumpeter (1934). The application of the diamond framework to any industry allows identifying the most relevant variables that impact on industry competition and it is the only model that has successfully addressed three levels of aggregation: the firm, the industry, and the nation (Grant, 1991). Porter argues that each determinant is influenced by the others, turning the system into a dynamic one. Porter concludes that a dynamic and challenging environment in a nation is the factor that allows success to particular industries, and also motivates and pushes companies to upgrade and expand their competitiveness over time.

Critics of the "diamond" model argue that the ambitious theoretical and empirical sweep of the analysis has been achieved at the expense of precision. Reliance upon broad, but ill-defined concepts such as the 'upgrading of competitive advantage' reflects a more general failure to perfectly reconcile micro-level analysis of competitive advantage of firms and industries with macro-level analysis of national development and prosperity (Grant, 1991). Porter also fails to clearly define the conditions under which advantages in the supply of basic factors of production are an advantage and the conditions under which they are a disadvantage.

Despite the criticism, Porter's concept of "clusters," or groups of interconnected firms, suppliers, related industries, and institutions that arise in particular locations, has become a new way for companies and governments to think about economies, assess the competitive advantage of locations, and set public policy. His ideas and personal involvement have shaped strategy in

countries as diverse as the Netherlands, Portugal, Taiwan, Costa Rica, and India, and regions such as Massachusetts and California. This idea appears very relevant in Kenya today as the country embraces the devolved system of government.

1.1.4 Machakos County

Machakos County is an administrative County in the eastern part of Kenya. The County has 8 constituencies which include; Machakos Town, Masinga, Mavoko, Kangundo, Matungulu, Kathiani, Yatta and Mwala. The County covers 6,208 square Kms and has a population of 1,098,584 as per 2009 census. The local climate is semi arid with a hilly terrain covering most parts. The beautiful hilly scenery is perfect for tourist related activities such as camping, hiking safaris, ecotourism and cultural tourism, dance and music festivals among many more. Subsistence agriculture is practiced with maize and drought-resistant crops such as sorghum and millet being grown.

The county has been selected as the home to the upcoming Konza Technology City due to its proximity to Nairobi, good infrastructure and availability of massive chunks of land. The county is also home to important industrial and residential centers like Athi River and Mlolongo. Besides Konza Techno City, the county government also has an ambitious master-plan that will see the face of the county lifted by the envisioned planned Machakos City. This will in the end create a cosmopolitan and modern economic centre. Machakos County government has set pace in county governance and was the first to constitute its cabinet. It was also the first county to hold one of its kind investor's conference that saw investors from different parts of the world participate in the multi-sectoral event and identify areas of investment. With all these happening within a very short period of the county government's existence, it has truly won the hearts and minds of many and its now regarded as the trend setter in county governance.

1.1.5 Manufacturing Sector in Kenya

Based on data from (2012) Kenya Association of manufacturers (KAM), the manufacturing sector that comprises of more than 700 members plays a significant role in the overall economic performance in the country. The sector is the third largest sector in the country and represents 11 percent of the GDP. In 2011, total manufacturing output stood at 1.01 trillion having increased from 842 billion in 2010. Kenya's manufacturing sector directly employs over 275,000 people. An additional 1.4 million people are employed through the supply and distribution chain, representing 13 per cent of the country's total employment (KNBS - Economic survey, 2012).

The sector is mainly agro-based and characterized by relatively low value addition, capacity utilization and export volumes partly due to weak linkages to other sectors. The sector is highly import dependent since Kenya's intermediate and capital goods industries are underdeveloped. Additionally the sector is highly fragmented with more than 2,000 manufacturing units with nearly 50 percent of the firms employing 50 workers or less. Most manufacturing firms are family owned and operated.

Manufacturing is one of the six key sectors under the economic pillar with the greatest potential in realization of Kenya's vision 2030. The vision for the manufacturing sector is to develop a robust, diversified and competitive manufacturing sector with an overall goal of increasing its contribution to GDP by at least 10% per annum. The sector is also expected to raise market share in regional markets from 7% to 15% and attract at least 10 large strategic investors in key agro-processing industries. At the current 7%, the share of Kenyan products in the US $11 billion regional market shows that the Eastern African market is dominated by imports from outside the region. This is an indication that there is a large potential to improve Kenya's competitiveness in the region by replacing external suppliers gradually (Economic Survey, 2013).

1.1.6 Manufacturing Sector in Machakos County

Machakos County has more than 150 manufacturing companies (http:www.kam.co.ke online document accessed on July 17, 2013) though as per county records, only about 65 of them are operational. The County is home to big industrial companies such as Mabati Rolling Mills and the EPZ which hosts several manufacturers. Machakos County government promises to improve the business environment in critical areas such as licensing and security which will be key in order to attract large scale investors especially in the EPZ at Athi River. Currently the EPZ hosts 3 cement factories, the Kenya Meat Commission, Athi River Mining, Alpharama tannery, Athi River Steel Plant and a host of cottage based industrial concerns.

The county will also be the future home of the Konza city which has been dubbed the 'silicon' savannah. The county seeks to strengthen local production capacity to increase domestically manufactured goods by focusing on productivity. The aim is to build on Kenya's vision 2030 manufacturing strategy by developing one SME industrial park with adequate infrastructure and relevant services to make it attractive; as well as facilitate linkages between the SMEs and research institutions. This would lead to development of new products that are competitive.

1.2 Research Problem

The modern world economy is characterized by the enhanced dynamics and deepening of the globalization process. Globalization has expanded the scope of international competition, turning some territories – regions, cities, local formations – into strategic players of the world market. In this scenario, survival and success for a nation or region increasingly depend on competitiveness. A nation attains competitive advantage if its firms are competitive (Porter, 1998). The existence of factor conditions, a business environment that invests in innovation, a demanding local market

and the presence of supporting industries, government support and availability of other enabling infrastructure create the context in which a nation's firms are born and compete.

In its efforts to compete in an even tougher world market, Kenya formulated vision 2030 in the year 2008 with the motto: "towards a globally competitive and prosperous nation". Devolution is recognized as one of the critical enablers of the vision since counties shall shape the competitive environment for firms operating within their jurisdictions. The role of government in Porter's Diamond Model is to encourage companies to raise their aspirations and move to higher levels of competitive performance (Porter, 1990). Machakos County must compete with the other 46 counties to be top destination for investment, education, working, living or new business location. The manufacturing sector has a lot of potential to help the county grow hence improve its overall competitiveness in Kenya. This study has been prompted by the recognition of the relevance of the concept of regional competitiveness (in this case county competitiveness) in spurring economic growth that is essential for realization of Kenya's vision 2030.

Some studies have been conducted in this area. Tongzon (2004) in his study focused on the determinants of competitiveness in Logistics and implications for the Asian region. Wolman et al (2008) focused on Economic Competitiveness and the Determinants of Sub-National Area Economic Activity. There are also some recent studies that have used Porter's (1990) model to analyse the competitiveness of industries and segments in Kenya. For example, Omwenga (2007) sought to determine whether Kenya's flowers are competitive in the world market and whether this competitiveness could be explained by the factors in Porter's Diamond model. Lighe (2012) focused on the factors that influence the competitiveness of the Kenyan coffee industry using Porter's Diamond Model. Wamaitha (2012) used Porter's Diamond Model to assess the Competitiveness of Tourism Industry in Kenya but did not focus on particular regions in Kenya.

The researcher is not aware of any study carried out on the determinants of competitiveness of sectors in particular counties. Consequently, this study seeks to bridge that gap by answering the question on the determinants of the competitiveness of Machakos County manufacturing sector and whether these determinants of Machakos County competitiveness can be explained by Porter's Diamond Model.

Research Objectives

i)   To establish the determinants of Machakos County manufacturing sector competitiveness.

ii) To assess whether the determinants of Machakos County manufacturing sector competitiveness can be explained by Porter's Diamond Model.

1.4 Value of the Study

The findings of the research may enable the national government to recognize the role of county governments in creating conducive environment for competitiveness of firms located in various counties. This might help policymakers in government and the private sector alike in identifying priorities in the quest to increasing the country's competiveness.

The findings would enable the private sector players to recognize opportunities available in Machakos County. Many private sector players may currently be unaware of the potential that exists at Machakos County that can be tapped. The potential success story of Machakos County is one that other peer counties may wish to emulate.

The findings from the study are meant to contribute to the body of scholarly knowledge especially on the applicability of Diamond model to developing countries. The proposed concept of "County Competitiveness" will also be of interest to researchers in strategic management.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, literature related to and consistent with the objectives of the study was reviewed. Important theoretical and relevant literature on the determinants of competitiveness and Porter's Diamond model are detailed in this section.

2.2 Theoretical Foundations of the Study

This study was based on three theories that consider how individual national regions behave as independent participants in global competition: the theory of flexible specialization (Piore and Sabel, 1984); the theory of cumulative competitiveness of regions (McCombie and Setterfield, 1994); and the theory of regional internal growth (Martin and Sanley, 1998). In his theory of industrial regions, Marshal (1961) was the first to analyze national regions as the sources of the growth of profits of the country as a whole. According to his theory, the competitiveness of individual sectors of industry is determined by the degree of their geographical localization. Marshall distinguishes three key factors of the development of local formations: highly skilled workers, efficient partner companies, and additional possibilities of the inter-company division of labor.

Elaborating on Marshall's idea on the existence of a special industrial atmosphere within the boundaries of individual local entities, Piore and Sabel (1984) concluded that the economic growth of certain regions is explained by the efficient operation of a substantial number of small and medium-sized enterprises that are geographically concentrated and enjoy considerable competitive advantages because of "flexible" specialization and the effect on the scale of production of savings (Brykova, 2006).

The authors of the theory of cumulative competitiveness of regions (McCombie and Setterfield, 1998) maintain that the increase in the gross regional product (GRP) is a function of the demand for the region's export products, which is dependent on the ratio of the world and export prices. The authors revealed a cycle in the region's competitive growth: GRP growth – labor productivity growth – reduction of relative expenditures for wages – reduction of prime cost of exports – higher demand in exports.

The model of internal regional development, devised by Martin and Sanley (1996), is a neoclassical model of internal growth, adapted to the local level. A dynamically developing region attracts skilled labor, which, in its turn, promotes the enhancement of labor productivity and accelerates the rate of economic development, while the localization of technological changes is conducive to the region's long-term innovative leadership. Therefore, the concept of international competitiveness of the region incorporates theories analyzing individual regions as independent subjects of international economic activity and putting emphasis on the formation of local competitive advantages. Also, the authors of the theories underline the positive effect of emergence of a specific inter-firm environment (atmosphere) favorable for the prompt spreading of information among them and, as a result, timely introduction of necessary innovations, which eventually leads to the enhancement of labor productivity and GRP levels.

2.3 National Competitiveness

Competitiveness according to Khemani (1997) should be equated with productivity. It relates to measures that firms, industries, regions, and governments cautiously adopt to foster, maintain and increase productivity on a sustainable basis. It relates to induced technological change and innovation. It applies to the changing organizational structure and behavior of firms, industry and government – both locally and nationally. Porter (1990) argues that with regard to national

competitiveness, the central question to be answered is why firms based in particular countries achieve international success in distinct segments and industries. How can we explain why Germany is the home for so many of the world's leading luxury cars and chemical firms; why are Swedish firms leaders in heavy trucks and mining? The search is for the decisive characteristics of a nation that allow its firms to create and sustain competitive advantage in particular fields, that is, the competitive advantage of nations.

The concept of competitive advantages was developed only in the early 1990s by the US economist Porter as an alternative theory of Ricardo's comparable advantages that served as the theoretical basis of international trade and competition throughout the19th century. According to the principle of comparative advantages, a country (region) gains substantial benefits when it concentrates resources at the most efficient enterprises (requiring the cheapest factors of production) and exports its products to the world markets. But in the opinion of Porter, the Ricardoian approach is not justified at the current stage of development of the theory of competition, because it does not explain the mechanism of formation of the business entities' competitiveness under globalization, when traditional resources (land, labor, capital) become generally accessible at world prices. For this reason he stressed that the global economic system requires the design of a more dynamic principle of competitive advantages, their essence being the reduction of production costs as the basis of constant innovative activity. Moreover, he pointed out that the creation and enhancement of competitive advantages is a highly localized process, since the distinctions of national economic structures, systems of values, cultures, institutions, and specifics of historical development impact to a considerable extent on the competitive positions of business entities. Of extreme importance within this context is the issue of identifying individual factors of regional dynamics as the required preconditions for the

formation and buildup of competitive advantages and enhancement of a region's competitiveness (Brykova, 2007).

Indeed, there is a long history of efforts to explain the determinants of competitiveness. First, the theory of Absolute Advantage was articulated in Adam Smith's book, The wealth of Nations (1776). Ricardo (1817) refined Adam Smith's theory by coming up with the theory of Comparative Advantage. Ricardo's proposition was indeed the earliest attempt to understand how nations compete. In the 1920s Heckscher and Ohlin (1991) postulated that patterns of trade depend on the relative abundance of factor endowment. Several other theories that have been developed include the Product Life Cycle by Raymond Vernon in 1966 and Economies of Scale and Imperfect Competition in the 1980s.

Porter (1998) believes that the earlier classical theories did not sufficiently explain the current pattern of trade, especially after the onset of globalization. They cannot explain why firms based in particular nations are able to compete successfully internationally nor can they explain why a nation's firms are able to sustain their competitive positions over time. A nation, according to him, attains competitive advantage if its firms are competitive. One aspect of Porter's productivity approach to competitiveness is of particular interest: namely, his argument that competitive advantage is created and sustained through a highly localized process' (Porter, 1990). In fact, in recent years, his focus has shifted away from the competitive advantage of nations to competitive advantage of regions.

2.4 Regional Competitiveness

Current trends show that the concept of regional competitiveness is more relevant. This is mainly due to complexity of defining national competitiveness. Despite the interest to measure, compare

and promote 'regional competitiveness' the very notion is also contentious and far from well understood. It is not clear what precisely is meant by the competitiveness of regions, cities and localities or how this can be measured. At its simplest, regional (and urban) competitiveness might be defined as the success with which regions and cities compete with one another in some way. This might be over shares of national markets or it might be over attracting capital or workers (Kitson et al, 2004).

Regional competitiveness may also refer to the existence of firms in a region that are able to consistently and profitably produce products that meet the requirements of an open market in terms of price and quality. The underlying assumption is that the interests of firms and the region in which they reside are always parallel. This notion is difficult to sustain, as firms will strive for productivity and profits, while regional competitiveness also needs to include employment levels. Furthermore, though productivity is clearly important, and improving the understanding of what factors raise productivity is an essential input for developing strategies for regional competitiveness, the focus on productivity should not obscure the issue of translating productivity gains into higher wages and profits and, in turn, the analysis of institutional arrangements and market structures (Malecki, 1999).

The competitiveness of a region resides both in the competitiveness of its constituent individual firms and their interactions, and in the wider assets and social, economic, institutional and public attributes of the region itself. The sources of regional competitiveness may originate at a variety of geographical scales, from the local, through regional, to national and even international. At the same time, there is no natural, pre-defined 'regional' unit at which issues of competitiveness are best analysed (Scheienstock, 1999). The causes of competitiveness are usually attributed to the effects of an aggregate of factors rather than the impact of an individual factor.

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2.5 Determinants of Competitiveness

A determinant is an influencing or determining element or factor. There are several factors that determine international competitiveness, such as costs of production in which wage costs constitute an important component particularly in labor-intensive production, management quality, prices, quality of the service, exchange rates, government policies, political stability, investments in human and physical infrastructure and other factors that set a country ahead of its competitors (Tongzon, 2004).

A 1989 review of econometric studies by Milward and Newman (1989) found that traditionally the primary factors influencing site selection by businesses were access to labor (measured usually by the supply of labor), labor costs (and unionization), transportation (number of highways, proximity of railroads), access to markets, and access to raw materials. While these factors continue to be paramount, more recent studies show that human capital characteristics – labor skills and education – have increased substantially in importance and now equal or exceed labor costs as an important factor for some industrial sectors. Malpezzi (2001) found that education was the single biggest factor in predicting economic growth. Later studies have also shown that as labor quality (human capital) increases in importance so do area amenity and quality of life characteristics that attract high quality labor (Glaeser and Saiz, 2004).

Agglomeration economies (savings derived as a consequence of proximity to other firms) also appear as important determinants and there is some evidence that their impact has increased over time (Quigley, 1998). Bartik (1985) found that availability of land, unionization (and existence of right to work laws), corporate tax rates, transportation systems (highways and railroads), wage rates, and existing manufacturing activity had the largest effects on manufacturing decisions.

Brykova (2007) postulate that as global competition becomes intense, the key determinants of ensuring the competitiveness of national regions are the following factors: clusters; human assets; enterprises and degree of development of local networks; innovations and regional innovation systems; quality of administration and institutional structure (type) of a region; regional infrastructure; investment attractiveness and nature of foreign direct investment. Taking into account the specific local characteristics is a necessary condition for identifying the factors of regional competitiveness.

2.6 Porter's Diamond Model

Classical economists identified land, labour, capital and people as the fundamental factors of a nation's competitiveness. Porter (1998) argues that these factors cannot explain why firms based in particular nations are able to compete successfully internationally. The same factors can also not explain why a nation's firms are able to sustain their competitive positions over considerable periods of time. He cited some examples to support his case: Korea, after the Korean War, was left virtually without capital, yet they were able to achieve substantial exports in a wide range of relatively capital intensive industries such as steel, ships and automobiles; Germany and Sweden have prospered despite high wages and long spells of labour shortages.

Porter identified four classes of country attributes (which he called the National Diamond) that provide the underlying conditions or platform for the determination of the national competitive advantage of a nation. These are the factor conditions, demand conditions, related and support industries, and company strategy, structure and rivalry. He also proposes two other factors, namely government policy and chance (exogenous shocks), that support and complement the system of national competiveness but do not create lasting competitive advantage (Smit, 2010).

Factor conditions refer to inputs used as factors of production such as land, labour, natural resources, capital and infrastructure. This sound similar to standard economic theory but Porter (1998) denotes two different distinctions within the determinant factor conditions. The first one deals with whether the factors are 'basic' (natural resources, climate and location) or 'advanced' (modern digital data communications infrastructure and highly educated personnel). The second distinction is built on 'specificity' and includes 'generalized factors' in the economy and 'specialized factors', most of which are relevant to a limited range or even to just a single industry. Porter argues that basic and generalized factors are either inherited or easy to create, whereas advanced and specialized factors are more decisive and a sustainable basis for competitive advantage as they are difficult to duplicate. Porter (1998) further argues that a lack of resources often actually helps countries to become competitive. Abundance generates waste and scarcity generates an innovative mindset. Such countries are forced to innovate to overcome their problem of scarce resources.

Demand as a factor explaining trade is not new. Linder (1961) first introduced it to explain intra-industry trade. According to Linder hypothesis, countries with similar per capita incomes will have similar spending patterns. Porter (1998) however, focuses more on demand differences than on similarities to explain the international competitiveness of countries. He argues that firms that face a sophisticated domestic market are likely to sell superior products because the market demands high quality. The local demand conditions allow the industries to get a better understanding of the customer's needs because of proximity.

The presence of related and supporting industries that have a competitive advantage are the third determinant on Porter's model. Having supplier industries accelerates the process of innovation and upgrading because businesses work closer together. The introduction of related and

supporting industry clusters as a separate determinant of national competitive advantage has been viewed as one of the most important contributions of Porter's Diamond theory (Teece, 1996 as cited by Smit, 2010). It is believed that it is these kinds of localized clusters that are a prominent feature of virtually any advanced economy, but are lacking in developing countries, which limits productivity growth in those economies (Smit, 2010).

Porter (1990) denotes that the fourth broad determinant is the firm strategy, structure and rivalry which refers to the way companies "are created, organized and managed". He believes that there should be a good fit between an industry's sources of competitive advantage plus its structure, and the strategies, structures and practices favoured by the national government. The existence of intense domestic rivalry is of special importance since it encourages firms in the industry to break the dependence on basic factor advantages. Porter argues that the roles played by the government and chance in the competitive development of an industry are important but indirect, mainly through influencing the four determinants of competitive advantage.

2.6 Competitiveness and Porter's Diamond Model

Just like postulated in the Porter's Diamond Model, Oliver (1999) argued that competitive strategies will be vital to a firm while developing its fundamental approach to attaining competitive advantage (low price, differentiation, niche), the size or market position it plans to achieve, and its focus and method for growth (sales or profit margins, internally or by acquisition). Porter's diamond offers a model that can help understand the competitive position of a nation in global competition. As opposed to classical trade theories, Porter's diamond recognizes that in modern international competition, companies compete with global strategies. It seeks to explain why a nation provides a favourable home base for companies that compete internationally (Brykova 2006).

Porter (1990) contended that in the complete framework, the four determinants in the diamond influence each other, turning the system into a dynamic one. It is in fact, this systemic nature that makes it difficult to replicate the exact structure of the industry in another country. Porter concludes that a dynamic and challenging environment in a nation is the factor that allows success to particular industries, and it is also the one that motivates and pushes companies to upgrade and expand their competitiveness over time.

2.7 Criticism of Porter's Diamond

Porter's framework has been widely acknowledged and applied on numerous nations and firms. However, the framework has also received some criticism. Lack of precision is apparent in the imprecise definitions of some key concepts. Reliance upon broad, but ill-defined concepts such as the 'upgrading of competitive advantage' reflects a more general failure to perfectly reconcile micro-level analysis of competitive advantage of firms and industries with macro-level analysis of national development and prosperity (Grant, 1991). Porter also fails to clearly define the conditions under which advantages in the supply of basic factors of production are an advantage and the conditions under which they are a disadvantage.

The indirect role Porter attributes to government makes this diamond element one of the most criticized areas of his study (Stopford and Strange, 1991). Rugman and D'Cruz (1993) share the idea that double and/or multiple-linked diamonds may better reflect today's globalization and thus give a better picture of the sources of competitive advantage than Porter's single diamond framework. The notion of clusters is itself too vague and its conjectures about higher company productivity at cluster locations exposed to too little empirical testing (Martin and Sunley, 2003).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Research methodology involves details in approaches and procedures used in carrying out the study. It includes the techniques, methods and procedures adopted in the research. This chapter therefore discusses the research design, population, data collection and data analysis techniques.

3.2 Research Design

The study used the descriptive survey research design. This offered the researcher wide coverage of the population of study to facilitate comparisons. Mugenda and Mugenda (1999) observe that survey research is used for exploring existing status of two or more variables at a given point in time. This research design also portrays the characteristics of a population fully (Chandran, 2004). This justified the use of the survey research design for this study in order to establish the determinants of Machakos County manufacturing sector competitiveness.

3.3 Population of the Study

Target population in statistics is the specific population about which information is desired (Ngechu, 2004). All the manufacturing companies operating within Machakos County formed the population of the study. As per county records, Machakos County had 65 manufacturing companies that were operational (see Appendix III).

Due to the small size of population of manufacturing companies in Machakos County, the research took the census approach. A census is where data is collected from all members of the population (Hair, Celsi, Money, Samouel, & Page, 2011).

3.5 Data Collection

The study used primary data, which was collected using a semi-structured questionnaire. The questionnaire had both open and close-ended questions. The close-ended questions provided more structured responses to facilitate tangible recommendations. The open-ended questions provided additional information not captured in the close-ended questions. Kombo and Tromp (2006) indicated that semi structured questionnaires are commonly used in business research where there is a need to accommodate a large range of different responses from companies.

The questionnaire was divided into three parts. Part A contained questions on general information. Part B contained questions on determinants of Machakos county competitiveness while Part C contained questions on the determinants of competitiveness as per Porter's Diamond model. The questionnaires were administered to senior operational managers in the manufacturing companies operating within Machakos County using a drop and pick method.

3.4 Data Analysis Techniques

The questionnaires received were edited for completeness and consistency. Quantitative data was analyzed using descriptive statistics such as percentages, mean scores and standard deviations so as to facilitate and enable comparison through use of statistical package for social sciences (SPSS V. 21). Content analysis was used for analysis of qualitative data. Content analysis is a method for summarizing any form of content by counting various thematic areas of the content. The information was presented by use of frequency tables and in prose format.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter contains summaries of data findings together with their interpretation. The findings intended to answer the study's research questions on determinants of Machakos County manufacturing sector competitiveness and applicability of porter's diamond model. Data collected was collated and reports produced using tables and qualitative analysis done in prose.

4.2 Response Rate

Table 4.1 illustrates the response rate of the respondents that participated in the survey. The study targeted 65 respondents working in the manufacturing firms in Machakos County. However, only 47 respondents completely filled in and returned the questionnaires while 18 did not respond. This gave a response rate of 72% and a non-response of 28%. This response rate is above the average mark which is consistent with Gay et al (2006) argument that where there is minimal discrepancy in characteristics between the target group and the actual number of respondents then 10% of the data is considered reliable. Therefore the 72% response rate was sufficient for statistical analysis to enable representative findings from the study.

Table 4.1: Response Rate

Response	Frequency	Percentage (%)
Filled in questionnaires	47	72
Un returned questionnaires	18	28
Total	**65**	**100**

Source: Research Data (2013)

4.3 General Information

The general information considered in the study included the ownership structure, number of employees and the duration of operation in Machakos County.

4.3.1 Company Ownership Structure

The study required the respondents to indicate the type of ownership of the business enterprises they work with. According to the results in Table 4.2, most (41%) of the respondents indicated that their enterprises were both local and foreign companies, 34% of the enterprises were foreign, while 25% of the manufacturing businesses were local enterprises. The findings indicate a good mix in ownership structure hence the respondents can give a fairly balanced opinion on the competitiveness of Machakos County manufacturing sector.

Table 4.2: Company Ownership Structure

	Frequency	**Percent**
Local	12	25
Foreign	16	34
Both local and foreign	19	41
Total	**47**	**100**

Source: Research Data (2013)

4.3.2 Number of Employees

The study further requested the respondents to indicate the number of employees in their companies. The researcher chose to use number of employees as a measure of size. According to the findings in Table 4.3, 87% of the respondents indicated that they have more than 100 employees while 13% indicated that they have 21-50 staffs. The results indicate that manufacturing firms operating in Machakos County are large and labour intensive since no company surveyed had less than 20 employees while the majority (87%) had more than 100 employees.

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Table 4.3: Number of Employees

	Frequency	Percent
21-50	6	13
Above 100	41	87
Total	**47**	**100**

Source: Research Data (2013)

4.3.3 Age of Business Enterprise

Respondents were to indicate the length of time that their companies had been in operation in the county. The number of years in operation is crucial since a company is in a position to recount how competitive the county is vis-à-vis other counties. The results are shown in Table 4.4 below.

Table 4.4: Duration of Operation in Machakos County

Duration of Existence	Frequency	Percentage
Above 10 years	16	34
9-10years	14	30
6-8 years	9	19
3-5 years	7	15
1-2 years	1	2
Total	**47**	**100**

Source: Research Data (2013)

The findings indicate that 34% of the firms had operated in the county for more than 10 years, 30% for between 9-10 years, 19% for between 6-8 years, 15% for between 3-5 years and 2% for between 1-2 years. The results indicate that majority of manufacturing firms had been in operation in Machakos County for long enough spanning over five years and thus they were in a position to respond on competitiveness and also comment on county government policies**.**

4.4 Determinants of Machakos County Competitiveness

This section sought to establish the competitiveness of Machakos County and the factors contributing to the success of manufacturing firms operating within the county.

4.4.1 Competitiveness of Machakos County

Table 4.5 shows the finding of the study on the extent to which Machakos County is competitive compared to other counties in attracting manufacturing companies. According to the findings, 49% of the respondents were of the opinion that Machakos County was moderately competitive compared to other counties, 37% purported that the county is highly competitive while 14% opined that the county is very highly competitive. The findings show that more than half (or 51%) of the respondents indicated that the county is either highly or very highly competitive and such firms were in a better position to elaborate on the determinants of competitiveness.

Figure 4.5: Competitiveness of Machakos County

Competitiveness	Frequency	Percent
Very low	0	0
Low	0	0
Moderate	23	49
High	17	37
Very high	7	14
Total	**47**	**100**

Source: Research Data (2013)

4.4.2 Factors Contributing to Business Success

Table 4.6 shows the summary of the study finding on contribution of specific factors on the business success. From the findings the success of manufacturing firms was highly attributed to

access to raw materials (mean score of 3.58) and low cost of production (3.52). Political stability, conducive county government policies, access to markets, proximity to other firms and population density contributed to the success of the firms to moderate extent depicted by mean score of 3.43, 3.29, 3.09, 3.05 and 3.02 respectively. The standard deviations were relatively low indicating that most of the respondents were in close agreement. The findings indicate that accessibility to raw materials and low cost of production greatly explains the success of firms surveyed which is largely due to the nature of their business. Factors such as political stability and conducive county government policies contributed to business success to a moderate extent which can be explained by the short duration that county governments have been in operation.

Table 4.6: Factors Contributing to Business Success

	Mean	**STDev**
Low cost of production (energy, labour, transport)	3.52	0.622
Conducive county government policies	3.29	0.856
Political stability	3.43	0.833
Access to markets	3.09	0.893
Access to raw materials	3.58	0.976
Proximity to other firms	3.05	0.740
Population density	3.02	0.931

Source: Research Data (2013)

4.5 Demand Conditions as a source of Competitiveness

On demand conditions, Porter (1998) argues that home demand has a considerable influence on competitive advantage. Firms that face a sophisticated domestic demand are likely to sell superior products because the market demands high quality and a close proximity to such

consumers enables the firm to better understand the needs of the customers. The respondents were to rate various demand conditions in relation to their firms.

Table 4.7: Demand Conditions

	Mean	**STDev**
Proportion of local sales to total sales	1.91	0.976
Local demand situation	1.75	0.762
Bargaining power of your local demand	1.89	0.859
Level of sophistication/complexity of your local demand	1.56	0.878

Source: Research Data (2013)

The findings indicate that the demand conditions were significant to a small extent: the proportion of local sales to total sales (1.91), the local demand situation (1.75), bargaining power of the firm's local demand (1.89) and the level of sophistication/complexity of the firm's local demand (1.56). The standard deviations were relatively low indicating that most of respondents were in close agreement. The findings indicate that contrary to Porter's argument, demand conditions do not explain the competitiveness of the county's manufacturing sector. The findings are consistent with earlier findings by Esterhuizen, Royen & Doyer (2000) that demand conditions as a whole have a neutral impact on competitiveness, which means that demand conditions as a whole are neither constraining nor enhancing competitiveness.

4.6 Factor Conditions as a source of Competitiveness

Factor conditions refer to inputs used as factors of production such as land, labour, natural resources, capital and infrastructure. The researcher sought to establish the availability of the various inputs in Machakos County, their pricing, bargaining power of suppliers, characteristics

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of labour force and the extent to which the success of firms could be traced to identified factors. The tables below show the results.

4.6.1 Availability of inputs

The study further aimed to investigate the availability of inputs within Machakos County. From the findings in Table 4.8, most of the respondents indicated that labour, land and electricity were readily available as shown by mean score of 3.89, 3.57 and 3.50 respectively. Further the findings show that packaging materials and water were moderately available as indicated by mean score of 2.86 and 2.65 respectively. This implies that availability of labour, natural resources (land) and infrastructure (electricity) which are factor conditions is another source of competitiveness and is consistent with Delgado et al (2012) argument that physical infrastructure clearly plays an important role in productivity.

Table 4.8: Availability of inputs

	Mean	STDev
Land	3.57	0.141
Labour	3.89	0.718
Electricity	3.50	0.718
Water	2.86	0.832
Packaging materials	2.65	0.916

Source: Research Data (2013)

4.6.2 Average Pricing of Inputs

Table 4.9 shows the finding of the study on pricing of main inputs within Machakos County. From the findings, the study found that land, labour and electricity were moderately priced as shown by mean score of 2.82, 2.69 and 2.79 respectively. On the other hand, respondents

indicated that water and packaging materials were relatively highly priced as shown by mean score of 3.71 and 3.89 respectively. The standard deviations were relatively low indicating that most of respondents were in close agreement. The findings imply that the factor conditions (land, labour and electricity) were fairly priced within the county hence giving the county a competitive edge in comparison to neighbouring counties such as Nairobi.

Table 4.9: Average Pricing of Inputs

	Mean	**STDev**
Land	2.82	0.813
Labour	2.69	0.738
Electricity	2.79	0.712
Water	3.71	0.644
Packaging materials	3.89	0.738

Source: Research Data (2013)

4.6.3 Bargaining power of Suppliers

Further the study requested respondent to indicate how they would rate the bargaining power of their suppliers. From the findings, 49% of the respondents indicated that the bargaining power of their suppliers was moderate compared to theirs, 36% pointed that it was high while 15% opined that the bargaining power was very high.

Table 4.10: Bargaining power of Suppliers

	Frequency	Percent
Moderate	23	49
High	17	36
Very high	7	15
Total	**47**	**100**

Source: Research Data (2013)

4.6.4 Characteristics of Labour Force

The study further required the respondents to indicate the labour force characteristics within their companies. From the findings in Table 4.11, most respondents indicated that the proportion of casual labour to total, skills/training, wages and salaries and availability were moderate as shown by the mean scores of 3.22, 3.19, 3.16 and 3.03 respectively.

Table 4.11: Characteristics of Labour Force

	Mean	StDev
Proportion of casual labour to total	3.22	0.832
Wages and salaries	3.16	0.574
Education	2.88	1.008
Skills/Training	3.19	0.821
Availability	3.03	0.967
Bargaining power	2.81	0.738

Source: Research Data (2013)

4.6.5 Extent to which the success of firms could be traced to identified factors

The study also sought to find the extent to which the success of firms could be traced to various factors relating to Machakos County. From the findings in Table 4.12, majority of the respondents indicated that proximity to the City of Nairobi, abundance of cheap labour and proximity to the airport were the main factors that the firms could trace their success to as shown by the mean scores of 4.56, 4.03 and 4.00 respectively. The standard deviations were relatively low indicating that most respondents were in close agreement.

Table 4.12: Extent to which the success of firm could be traced to identified factors

	Mean	StDev
Proximity to the City of Nairobi	4.56	0.801
Proximity to good road network	3.72	0.813
Proximity to the railway line	2.00	1.191
Proximity to the airport	4.00	0.842
Abundance of cheap labour	4.03	0.740
Good climate	2.72	0.851

Source: Research Data (2013)

4.7 Government Policies as a source of Competitiveness

The government plays an important role in Porter's diamond model. Porter (1998) argues that the government's role is to act as a catalyst and challenger to companies to raise their aspirations. The respondents were to rate the extent to which government had been supportive to their business through its policies.

Table 4.13: Government Policies

	Mean	STDev
Government policy on human resources	4.22	0.602
Government policy on Science & Technology	3.44	0.840
Government policy on infrastructure	4.37	0.897
Government policy on demand stimulation	3.34	0.827
Government policy on business start-up	3.25	0.842
Government policy on protectionism	2.19	0.859
Government policy on taxes	2.03	0.822
Government policy on industry regulation	3.28	0.729
Political environment	4.25	0.916

Source: Research Data (2013)

From the findings in Table 4.13, majority of the respondents indicated that government policy on infrastructure; political environment and government policy on human resources were very supportive on businesses as shown by the mean scores of 4.37, 4.25 and 4.22 respectively. Other policies considered moderately supportive included Government policy on Science & Technology; Government policy on demand stimulation; Government policy on industry regulation and Government policy on business start-up as shown by the mean scores 3.44, 3.34, 3.28 and 3.25 respectively. This implies that government policy on infrastructure; political environment and government policy on human resources were very supportive on businesses**.**

4.8 Supporting Industries as a source of Competitiveness

The study also sought to find the extent to which collaboration with local supporting organizations (i.e. organizations operating within Machakos County) contributed to success. From the findings in Table 4.14, collaboration with insurance companies (4.59) and learning institutions such as universities (4.56) highly contributed to the success of the firms while collaboration with trade unions (3.88), financial institutions (3.82) local suppliers (3.81) and peer firms/competitors (3.72) contributed to a moderate extent. The findings therefore imply that insurance companies and learning institutions such as universities were the local supporting organizations (i.e. organizations operating within Machakos County) that contributed to success of businesses.

Table 4.14: Collaboration with Local Supporting Organizations

	Mean	STDev
Local suppliers	3.81	0.965
Peer firms/competitors	3.72	0.888
Trade unions	3.88	0.942
Insurance companies	4.59	1.132
Financial institutions	3.82	0.896
Learning institutions such as universities	4.56	0.801
R&D Institutions	1.69	0.738

Source: Research Data (2013)

4.9 Market Structure Attributes as a source of Competitiveness

The respondents were asked to indicate their views on various market structure attributes. From the findings in Table 4.15, majority of the respondents strongly agreed that market access was difficult and there were many players in the industry as shown by the mean scores of 4.19 and 4.03 respectively. Most of the respondents further agreed to a moderate extent that there were many entry barriers to competitors and businesses market share was high as shown by the mean scores of 3.31 and 3.16 respectively. This implies that market access was difficult and there were many players in the industry. The standard deviations were relatively low indicating that most respondents were in close agreement.

Table 4.15: Market Structure Attributes

	Mean	STDev
There are many players in the industry	4.03	0.822
Your market share is high	3.16	0.808
There is intense competition locally	2.03	1.092
International competition is stiff	2.06	0.759
Market access is difficult	4.19	0.693
There are many entry barriers to competitors	3.31	0.931

Source: Research Data (2013)

4.10 Corporate Strategy as a source of Competitiveness

The respondents were asked to indicate their views on the extent to which their firms engage in various strategies. From the findings in Table 4.16, manufacturing companies in Machakos County engaged in strategies that promote business to a large extent. This included product

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packaging (4.22), marketing innovation (4.16), advertising (3.97) and management of change (3.88). Most respondents further indicated that they engaged to a moderate extent in strategies that promote product range, marketing research, people involvement and explicit PR as shown by the mean scores of 3.22, 3.09, 2.44 and 2.13 respectively. This implies that product packaging and marketing innovation were the main strategies in which firms were engaged in.

Table 4.16: Firms Engagement in Business Strategies

	Mean	STDev
Marketing innovation	4.16	0.847
Explicit Public Relations (PR) strategy	2.13	0.707
Management of change	3.88	0.793
Marketing Research	3.09	0.963
Product packaging	4.22	0.792
Product range	3.22	0.941
Advertising	3.97	0.822
People involvement	2.44	0.840

Source: Research Data (2013)

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the data findings on determinants of Machakos County manufacturing sector competitiveness and applicability of porter's diamond model, the conclusions and recommendations drawn thereof. The chapter is therefore structured into summary of findings, conclusions, recommendations and areas for further research.

5.2 Summary of the Findings

The first objective of this study was to establish the determinants of Machakos County manufacturing sector competitiveness. From the findings, the study found that Machakos County is competitive compared to other counties since more than 50% of the respondents indicated that the county was either highly or very highly competitive. The business success of manufacturing firms in the county was attributed to factors such as access to raw materials and low cost of production such as energy, labour, transport among others. However, political stability and conducive county government policies influence business success to a moderate extent. The respondents did not attribute the performance of their firms to county government policies.

The second objective of this study was to assess whether the determinants of Machakos County manufacturing sector competitiveness can be explained by Porter's Diamond Model i.e. demand conditions, factor conditions, related supporting industries, firm strategy and rivalry and government support. On demand conditions, the study found that demand conditions were significant to a small extent. This can be explained by the fact that most of the firms operating within Machakos County operate within the EPZ whose produce is mainly for export. Thus, the local demand situation, bargaining power of local demand and level of sophistication or complexity of

local demand had no influence on the quality of final products made. This is not in line with Porter's Model that home demand has a considerable influence on competitive advantage.

On factor conditions, the study found that main inputs for manufacturing companies were available in Machakos County; these include labour, land and electricity that were rated readily available and packaging materials and water that were rated moderately available. The average pricing for land, labour and electricity were rated high while average pricing for water and packaging materials were moderate. The respondents were in agreement that labour within Machakos County was readily available and fairly priced and trained. The abundance of cheap labour and proximity of the County to the city of Nairobi can ensure adequate supply of skilled manpower. Success of manufacturing companies within the county can also be traced to the location of the county especially proximity to the city of Nairobi, proximity to the Airport and neighbouring rural set-up that supplies abundant cheap labour. The findings to a large extent are in line with Porter's argument.

On supporting industries, the study found that collaboration with insurance companies and learning institutions such as universities greatly contributed to the success of manufacturing companies operating in the county. Collaboration with trade unions, financial institutions, local suppliers and peer firms/competitors were rated as contributing moderately to the success of firms. However, there was an indication that collaboration with R&D institutions was low. The low collaboration with R&D institutions probably explains why product ranges remained largely unchanged despite most firms operating within the county for over 10 years. This is likely to impact negatively on the competitiveness of the manufacturing sector in the county.

On market structure and corporate strategy, the findings show that to a large extent there were many players in the industry and market access was difficult. On the other hand, to a moderate extent there were many entry barriers to competitors and business market share was high for individual firms. To a large extent, manufacturing companies in Machakos County engage in strategies that promote business such as product packaging, market innovation, advertising and management of change. The findings largely agree with Porter's argument that the existence of intense domestic rivalry is of special importance since, for instance, it encourages firms to break their dependence on basic factor advantages hence enhancing their competitiveness.

Porter (1998) thinks that the roles played by the government and chance in the competitive development of industry are important but indirect, mainly by influencing the other four determinants. From the findings on government policies, the study found that infrastructure; political environment and government policy on human resources were very supportive on businesses. Other policies found moderately supportive include: Government policy on Science & Technology; Government policy on demand stimulation; Government policy on industry regulation and Government policy on business start-up.

5.3 Conclusions

The study concluded that Machakos County manufacturing sector is competitive compared to other counties with factors such as access to raw materials, low cost of production such as energy, labour, transport among others contributing to business success in the county. However, political stability and conducive county government policies influence business success to a moderate extent. It is possible that the impact of county government policies is yet to be felt considering that counties have been in operation in Kenya for less than one year.

From the foregoing, determinants of Machakos County manufacturing sector competitiveness can be explained by only three of the four factors of Porter's Diamond Model. The competitiveness of Machakos County's manufacturing sector can be attributed to factor conditions, especially land, labour and electricity. The county's location especially its proximity to the City of Nairobi and airport explain the success of manufacturing companies whose output is mainly for the export market. The collaboration with local supporting organizations especially insurance companies, learning institutions, local suppliers highly contributed to the success of the manufacturing companies. The companies' deliberate involvement in marketing and corporate strategies has also enhanced the competitiveness. However, the factor on demand conditions cannot be used to explain the competitiveness of Machakos County manufacturing sector mainly due to the fact most firms surveyed operate within the EPZ and export most of their products. Thus, the local demand situation, bargaining power of local demand and level of sophistication or complexity of local demand had no influence on the quality of final products made as postulated in Porter's Diamond.

5.4 Recommendations for Policy and Theory

The aim of Kenya's vision 2030 is to enhance the country's competitiveness in the global market. The counties being critical enablers of the vision should devise policies aimed at creating conducive environment for local firms. Machakos County should lead the pack in formulating county government policies conducive for investors through tax breaks for business start-ups and demand stimulation. The county should also prioritize infrastructure development since it was evident that facilities such as electricity and transport are important factors for business success.

Further the study recommends that for effective decentralization and devolution to the county level, county government should prioritize resource distribution to the citizens to enhance

competitiveness of the county government in terms of innovation and creativity. This can be achieved through establishment of R&D institutions within the county and encouraging collaboration between manufacturing firms and those institutions so as to improve product range through new products hence making the county even more competitive.

5.5 Limitations of the Study

Every study inevitably encounters certain levels of limitations due to a variety of factors. Resource availability both in time and finances constrained the researcher from travelling to remote locations of Machakos County. The delay in collection of data as respondents took more time than had been stipulated was the other challenge encountered. Respondents who were senior managers are usually very busy hence the tendency not to give in-depth attention to the unstructured parts of the questionnaire. Some managers delegated the responsibility to complete the questionnaire to junior staff who may not give a balanced view for generalization of research findings.

The study only focused on manufacturing companies operating within Machakos County and therefore cannot be used to generalize on the determinants of competitiveness for Machakos County as a whole.

5.6 Recommendations for Further study

The study only focused on manufacturing companies operating within Machakos County. The same research should be replicated in other counties so as to help potential investors to establish the competitiveness of the various counties and the unique factors that explain their business success. Future studies should be carried covering all manufacturing companies in Kenya to better give indication of the determinants of competitiveness of the manufacturing sector in Kenya.

Although government policies were generally considered supportive to the manufacturing businesses, it was evident from the primary data collected that the manufacturing firms were yet to feel the role of county government policies on their businesses. A study comparing the investment climates in other neighbouring counties would help identify gaps in county government policy on investors and their impact on the investment strategies adopted by firms with the aim of enhancing the country's competitiveness in line with Vision 2030.

Most of the products (that included mainly jeans clothes and other apparels) produced by most firms studied were being exported yet the country imports second hand clothes. There is need for further research to find out the implications of the EPZ model especially considering that the country imports the same products produced locally for export market.

REFERENCES

Barbe, F.T and Triay, M.G (2011). Is Porter's diamond applicable to developing countries? A case study of the broiler industry in Uruguay. *International Journal of Business and Social Science,* Vol. 2 No. 6; April 2011

Barney, J. B. (2002). *Gaining and sustaining competitive advantage*. New Jersey: Prentice Hall.

Bartik, T. (1985). Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States. *Journal of Business & Economic Statistics*, 3(1), 14-22.

Brykova, I. (2006). *The International Competitiveness of National Regions: Conceptual and Practical Dimensions*

Brykova, I. (2007). *Determinants of the International Competitiveness of National Regions in the Global Economic Environment*

Cartwright, W.R. (1993). Multiple linked "diamonds" and the international competitiveness of export-dependent industries: The New Zealand Experience, *Management International Review*, **2**, 55-70.

Chandran, E. (2004).*Research Methods*. Nairobi: Starbright services limited.

Delgado, M., Ketels, C., Porter, M.E. & stern, S. (2012). *The Determinants of National Competitiveness.* Massachusetts Avenue, Cambridge.

Dunning, J. H. (1995). What's wrong-and right-with trade theory? *The International Trade Journal,* Vol. 9 No 2, 163-202.

Esterhuizen, D., Van Royen, C.J. & Doyer, O.T. (2000). *Determinants of Competitiveness in the South African Agro-food and Fible Complex*. University of Pretoria, South Africa

Gay, L., Mills, G., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications*. New Jersey: Pearson Education, Inc.

Glaeser, E. L. &Saiz, A. (2004). The Rise of the Skilled City, Brookings-Wharton Papers on Urban Affairs: 2004. Washington, DC: Brookings Institute, pp. 47-101.

Grant, R.M. (1991). Porters competitive Advantage of Nations: an assessment. *Strategic Management Journal*, Vol. 12, 535-548.

Hair, J. J., Celsi, M. W., Money, A. H., Samouel, P., & Page, M. J. (2011). *Essentials of Business Research Methods* (2nd ed.). Newyork, USA: M.E. Sharpe Inc.

Heckscher, E.F. (1991). *The effect of foreign trade on the distribution of income*, in Heckscher-Ohlin trade theory, 1991, Cambridge, MA: MIT Press.

http:www.kam.co.ke online document accessed on July 17, 2013.

http:www.machakosgovernment.com accessed on July 10, 2013.

Hyatt, L. (2001), A simple guide to strategy, *Nursing Homes*, Vol. 50 No.1, pp.12-3.

Khemani, S. (1997).*Competition Policy and Economic Development*. Policy Options, October, pp23-27

Kombo, D. K. & Tromp, D. L.A (2006).Proposal and Thesis Writing. Nairobi. Paulines Publications.

Kothari, C.R. (1990). *Research Methodology*: Methods and Techniques, 2[nd]Ed.WishiraPrakashan

Krugman, P.R. (1990). *Rethinking International Trade*. Cambridge, MA: MIT Press

Krugman, P.R. and Obstfeld, M. (2003).*International Economics*: Theory and Policy, 4th edition. New York: HarperCollins.

Lighe, P. (2012). *An Analysis of the Factors that Influence the Competitiveness of the Kenyan Coffee Industry Using Porter's Diamond Model;* unpublished MBA project UON.

Linder, S.B. (1961). *An Essay on Trade and Transformation*. Stockholm: Almquist&Wiksell.

Mackay, J. W. (1994). Evolving Importance of Incentives.*Economic Development Review,* 12(4), 4-6.

Malecki, E.J. (1999). *Knowledge and Regional Competitiveness'*, paper presented at the International Symposium Knowledge, Education and Space, Heidelberg, Germany.

Marshall A. (1961). *Principles of Economics*.Variorum edition overseen by C. Guillebaud. L.: MacMillan Press. 450 p.

Martin, R. and Sunley, P. (1996). Slow Convergence? Post-neoclassical Endogenous Growth Theory and Regional Development, *Working Paper 44*, ERSC Center for Business Research, University of Cambridge, Cambridge.

Martin, R. and Sunley, P. (2003). Deconstructing clusters—chaotic concept or policy panacea?'' Journal of Economic Geography, vol. 3, pp. 3–35.

Milward, H. & Newman, H. (1989).State Incentive Packages and the Industrial Location Decision.*Economic Development Quarterly*, 3(3), 203-222.

Mugenda M.O. and Mugenda A. (2003).*Research Methods: Qualitative and Quantitative Approaches,* African Centre for Technology Studies, Nairobi, Kenya.

Ngechu. M. (2004), *Understanding the research process and methods*. An introduction to research methods. Acts Press, Nairobi.

Oliver, G. (1999). Collective entrepreneurship: the mobilization of college and university recycling coordinators, *Journal of Organizational Change Management*, Vol. 11 No.1, pp.50-69.

Omwenga, P. (2007). *Kenya's Competitiveness in the Floriculture Industry: A Test of Porter's Competitive Advantage of Nations Model*; unpublished MBA project UON.

Piore M. &Sabel C. (1984). The second Industrial Divide: Possibilities for Prosperity. N.Y.:Basic Books.

Porter, M.E. (1990). *The competitive advantage of nations.* London: The Macmillan Press Ltd.

Quigley, J. (1998). Urban Diversity and Economic Growth.*The Journal of Economic Perspectives*, 12(2), 127-138.

Scheienstock, G., (1999). *Regional Competitiveness*: A Comparative Study of Eight European Regions, Work Research Centre, University of Tampere, Finland.

Schumpeter, J.A. (1934). *The Theory of Economic Development.* Cambridge: Harvard University Press.

Thompson, J. (1961). *Methods of Plant Site Location Available to Small Manufacturing Firms.* Morgantown, West Virginia: West Virginia University Press.

Tongzon, J. (2004). *Determinants of Competitiveness in Logistics: Implications for the Region,*Department of Economics, National University of Singapore.

Wamaitha, N.M. (2012). *Assessing the Competitiveness of Tourism Industry in Kenya Using Porter's Diamond Model;* unpublished MBA project UON.

Windsberger, A. (2006). Resource-based view of competitive advantage of cities.*SEE Journal of Economics and Business*2: 20–31.

Wolman, H., Levy, A., Young, G. & Blumenthal, P. (2008).*Economic Competitiveness and the Determinants of Sub-National Area Economic Activity.* A Report for the Office of Revenue Analysis, OCFO, District of Columbia

Young, J.A. (1985). Global competition: the new reality. *California Management Review*, Vol. 27 No 3, 11-25.

Appendix I: Letter of Introduction

Dear respondent,

<u>RE: REQUEST FOR RESEARCH DATA</u>

I am a postgraduate student at the University of Nairobi, School of Business. In order to fulfill the degree requirements, I am undertaking a management research project on the determinants of Machakos County Manufacturing sector competitiveness. The topic of my study is:

"Determinants of Machakos County Manufacturing Sector Competitiveness and applicability of Porter's Diamond Model"

Your organization has been selected as part of this study. This is to kindly request you to assist me collect data by completing the attached questionnaire. The information provided will be used exclusively for academic purposes and will be treated with utmost confidentiality.

Your cooperation is highly appreciated.

Thank you in advance.

………………………

Evans Nyambane

Appendix II: Research Questionnaire

INSTRUCTION: Most of the questions request responses on a scale ranging from very low to very high but note that the scales vary from item to item. TICK only one answer on the scale.

SECTION A: DEMOGRAPHIC INFORMATION

Name of respondent ……………………………………………… (Optional)

Designation of respondent ………………………………………………….

PART A: GENERAL INFROMATION

1) Name of your organization ……………………………………………………

2) What is the ownership structure of your company

      Local   [ ]

      Foreign   [ ]

      Both local and foreign   [ ]

3) Number of employees

      1-10   [ ]   11-20   [ ]

      21-50   [ ]   51-100   [ ]

      Above 100   [ ]

4) How long has the company been in operation in Machakos County?

      1-2 years   [ ]   3-5 years   [ ]

      6-8 years   [ ]   9-10years   [ ]

      Above 10 years   [ ]

PART B: DETERMINANTS OF MACHAKOS COUNTY COMPETITIVENESS

5) What would you say the competitiveness of Machakos County is vis-à-vis other counties in Kenya in attracting manufacturing companies?

<div align="center">Very low   1   2   3   4   5   Very high</div>

6) List three factors that make Machakos County more competitive vis-à-vis other counties?

……………………………………………………………………………………………………

……………………………………………………………………………………………………

7) To what extent has the following factors contributed to the success of your business:

	Not at all	Low extent	Moderate extent	Great extent	Very great extent
Low cost of production (energy, labour, transport)					
Conducive county government policies					
Political stability					
Access to markets					
Access to raw materials					
Proximity to other firms					
Population density					
Others (Please specify) ………………………………………					

PART C: DETERMINANTS OF COUNTY COMPETITIVENESS AND PORTER'S DIAMOND MODEL

DEMAND CONDITIONS

8) Kindly tick on the appropriate box

	Very low	Low	Moderate	High	Very high
What is the proportion of your local sales to your total sales?					
How would you describe the local demand situation?					
How would you rate the bargaining power of your local demand?					
How would you describe the level of sophistication/complexity of your local demand					

9) What would you say are the determinants of local demand for your products (price or accessibility)?

………………………………………………………………………………………………

………………………………………………………………………………………………

SUPPLY CONDITIONS

10) What is the availability of your main inputs like?

	Very scarce	Scarce	Moderately available	Available	Readily available
Land					
Labour					
Electricity					
Water					
Packaging materials					
Others(please specify)					

11) What would you say about the average pricing of your main inputs?

	Very low	Low	Moderate	High	Very high
Land					
Labour					
Electricity					
Water					
Packaging materials					
Others (please specify)					

12) What would you say about capital in Machakos County?

	Very low	Low	Moderate	High	Very high
Requirement to start business					
Availability					
Cost of capital					
Bargaining power of financiers					

13) What would you say the bargaining power of your suppliers is vis-à-vis yours?

Very weak   1   2   3   4   5   Very strong

FACTOR CONDITIONS

14) Please indicate the characteristics of your labour force.

	Very low	Low	Moderate	High	Very high
Proportion of casual labour to total					
Wages and salaries					
Education					
Skills/Training					
Availability					
Bargaining power					
Others (please specify) …………………………………………					

15) To what extent can the success of your firm be traced to the following factors

	Very low contribution	Low contribution	Moderate contribution	High contribution	Very high contribution
Proximity to the City of Nairobi					
Proximity to good road network					
Proximity to railway line					
Proximity to the airport					
Abundant cheap labour					
Good climate					

GOVERNMENT POLICIES

16) How supportive has the government been to your business through its policies on the following?

	Very supportive	Supportive	Slightly supportive	Unsupportive	Very unsupportive
Government policy on human resources					
Government policy on Science & Technology					
Government policy on infrastructure					
Government policy on demand stimulation					
Government policy on business start-up					
Government policy on protectionism					
Government policy on taxes					
Government policy on industry regulation					
Political environment					

SUPPORTING INDUSTRIES

17) To what extent has collaboration with local supporting organizations (i.e. organizations operating within Machakos County) contributed to your success?

	Not at all	Low extent	Moderate extent	Great extent	Very great extent
Local suppliers					
Peer firms/competitors					
Trade unions					
Insurance companies					
Financial institutions					
Learning institutions such as universities					
R&D Institutions					
Others (Please specify) ………………………………………					

MARKET STRUCTURE AND CORPORATE STRATEGY

18) What would you say about the following market structure attributes?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
There are many players in the industry					
Your market share is high					
There is intense competition locally					
International competition is stiff					
Market access is difficult					
There are many entry barriers to competitors					

19) To what extent does your firm engage in strategies that promote the following?

	Not at all	Low extent	Moderate extent	Great extent	Very great extent
Marketing innovation					
Explicit Public Relations (PR) strategy					
Management of change					
Marketing Research					
Product packaging					
Product range					
Advertising					
People involvement					

Thank you for your participation

Appendix III: Manufacturing Companies in Machakos County

1. Mabati Rolling Mills
2. Kenya Meat Commission
3. Athi River Mining
4. Bamburi Cement
5. East Africa Portland Cement
6. Alpharama tannery
7. Athi River Steel Plant
8. Erdemann Property EPZ Ltd
9. Kenap EPZ Ltd
10. Tri-star EPZ Ltd
11. Union Apparels EPZ Ltd
12. MRC Nairobi EPZ Ltd
13. Protex Kenya EPZ Ltd
14. Mirage Fashion Wear EPZ Ltd
15. Global Apparels (K) EPZ Ltd
16. Rolex Garments EPZ Ltd
17. Alltex EPZ Ltd
18. Rising Sun EPZ Ltd
19. Ginger Ink Films EPZ Ltd
20. Cybel Agric EPZ Ltd
21. Earth Oil Kenya Proprietary EPZ Ltd
22. Film Studios EPZ Ltd
23. Friends & Partners EPZ Ltd
24. Golden Light EPZ Ltd
25. Insta Products EPZ Ltd
26. Ivee Aqua EPZ Ltd
27. Kenya Vegext EPZ Ltd
28. LNC Apparels (K) EPZ Ltd
29. Nodor Kenya EPZ Ltd
30. Norbrook Africa EPZ Ltd
31. Nutro Manufacturing EPZ Ltd
32. Rupa Cotton Mills EPZ Ltd
33. Apparel Africa Ltd
34. Blue Sky Films EPZ Ltd
35. Botanical Extracts EPZ Ltd
36. Capital Industrial Park EPZ ltd
37. Earthnut EPZ ltd
38. Trace Jack Industries EPZ Ltd

39. New Land EPZ Ltd

40. Pontact Productions EPZ Ltd

41. Premium Machinery Distributors EPZ Ltd

42. Mumanzi Enterprises Ltd

43. Uumani Factory

44. Banbros Ltd

45. Eastern Flour Mills

46. Fabricuts Exports Ltd

47. TSS Spinning Weaving Ltd

48. Samu Enterprises

49. Saj Ceramics Ltd

50. Nova Chemicals Ltd

51. Devki Steel Mills Ltd

52. Tristar EPZ Ltd

53. Transfleet EPZ Ltd

54. Veiwfinders EPZ Ltd

55. Eastern Kenya Bottlers Ltd

56. Eastern Printing Works

57. Moon Industries

58. Multi Chemical Works Ltd

59. Savco Millers Ltd

60. Santowels Ltd

61. Nairobi Athi River Steel Plant

62. Mohan Meakin (K) – Glass Plant

63. Modern African Attire

64. Mini Bakeries (Nbi) Ltd – Machakos

65. Metoxide Africa Ltd

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