

**MODERATING INFLUENCE OF GOVERNMENT POLICY ON SUGAR COMPANIES
IN WESTERN KENYA**

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ABSTRACT

The sugar industry contributes about 15 percent to Kenya's agricultural GDP and supports directly and indirectly an estimated 25 percent of the country's population. The objective of the study was to determine the Moderation effect of the Government Policy on the relationship between Strategic Capabilities and Competitive Advantage of Sugar Companies in Western Kenya. The respondents were composed of 727 senior and middle level managers. Yamane (1967) formula was used to calculate the sample size of 88 respondents. The primary data was obtained using a structured questionnaire pre-tested for reliability and validity. A numerical 5-point Likert scale was used in the questionnaire. The research instrument was developed based on the constructs identified in the conceptual framework. For reliability analysis Cronbach's alpha was used. Construct validity was established by finding out whether the questions were correctly phrased in terms of clarity and ambiguity. Content validity was tested by use of experts and supervisors in the relevant areas. Both descriptive and inferential statistics were used to analyze the data. Out of 88 questionnaires sent out, 64 questionnaires were received back giving a response rate of 73%. The Correlation and Logit regression analyses established that there is an insignificant weak positive relationship between strategic capabilities and competitive advantage. Logit regression analysis established that when all the strategic capabilities were acting on the competitive advantage at the same time, material capability was the most critical strategic capability and statistically significant in determining the competitive advantage of the sugar companies in Western Kenya. Logit regression analysis showed that sugar companies that had strong Strategic Capabilities when positive Government policy was in play were 4.091 times more likely to be competitive compared to those that had weak Strategic Capabilities. Hypothesis testing established that Government policy significantly moderates the relationship between strategic capabilities and competitive advantage of sugar companies in Western Kenya. The study findings indicate that the role of the Government policy has profound Influence on the competitive advantage of sugar companies in Kenya. A review of the literature indicates that few studies have been carried out on the influence of strategic capabilities on competitive advantage of the sugar industry in Kenya. Therefore, an expansion of the geographical scope of the study to involve more private owned sugar companies in Kenya is required for validation of the study

findings. The study recommends privatization of the public owned sugar mills as the most viable option for revitalization of the sugar sector in Kenya. Further, the study recommends the government and the sugar industry stakeholders to establish a standing joint committee to resolve the emerging issues around sugarcane area zoning, drop in sugarcane yield, poor road infrastructure, and value added tax, financial debt and privatization of the public owned sugar mills.

Keyword: Human resource capability, Technology capability, Material capability, Financial capability, Competitive advantage, Government policy.

1. INTRODUCTION

The sugar industry within the Southern and Eastern Africa region is a strategic sector for employment creation. It is a major contributor to the rural economic activity in the sugarcane growing areas and provides a multiplier of economic growth. The sugar industry plays a significant role in Kenya's rural economy, contributing about 15 percent to the country's agricultural Gross Domestic Product (KSI, 2009). Smallholder farmers supply over 92 percent of the sugarcane processed by sugar companies (KSI, 2009; KSB, 2010). An estimated 25 percent of the country's population depends directly or indirectly on the sugar industry for their livelihood. Factories operate at a capacity utilization of 55 to 60 percent because of significant technical and management limitations (KSB, 2010; KSI, 2009). This percentage of factory capacity utilization is low in comparison to world leaders like India where the sugar industry is operating at an average of 113% capacity utilization (Kumar and Arora, 2009). Average cane yield for the sugar industry in Kenya in 2013 was 54.67 tonnes per hectare nearly half as much as Zambia whose yield was 113 tonnes per hectare and Malawi producing 105 tonnes per hectare (KSB, 2013).

Ulrich (1991) article on "Organizational capability: creating competitive advantage" recognizes that the three traditional means of gaining competitive advantage are through financial, strategic and technological capabilities. He further states that Organizational capability is the critical source of competitive Advantage. Goode (1959) as cited by Fleischhauer (2007) defines Human capital as knowledge, skills, attitudes, aptitudes, and other acquired traits contributing to production. People possess knowledge, skills and abilities (KSAs) that are of economic value to the firm. Firms may have access to valuable human capital but either through the poor design of work or the mismanagement of people may not adequately deploy it to achieve strategic impact.

Perrow (1967) defines technology as systems for getting the work done. Lall (1992) stresses the power of technological capability as the way firms absorb, process, create, change and generate feasible technical applications (new technology, new process, new products, new routines) within the knowledge frontier (as cited by Zawislak, Alves, Gamarra, Barbieux, & Reichert, 2012). According to Kotha and Swamidass (1998) investments are made each year in advanced manufacturing technology because practitioners perceive a number of benefits attributed directly to their use. Cabral (2010) suggests that the sustainability of competitive advantage will depend on the extent to which the firm is able to develop capabilities for innovation.

Material capability is the ability to plan and to continuously receive enough material for full factory capacity utilization over an extended period of time (Zimmermann & Zeddies, 2002). A substantial part of the sugar production costs results from the material costs (Zimmermann & Zeddies, 2002). In sugar growing country settings, farmers and processors establish interlinked contract and this enables farmers to access credit, inputs and guaranteed purchases. Such agreements benefit the processing companies through guaranteeing higher quality and quantity of sugarcane and timely delivery. Chidoko and Chimwai (2011) found out that if farmers do not receive good extension services they are likely to incur very high costs of production and lower output per unit of land area. Waswa, Onyango, and Mcharo (2012) found out that yield appears to be a key determinant of gross income to farmers.

Financial capability is a situation in which an organization is having operational, managerial and financial stability to meet its purpose and deliver its outputs, in accordance with its strategic goals. Deloitte study of over 1,100 businesses across the globe found that financial management was evolving from an uninspiring function of doing business to one of the most promising levers of business transformation.

Lall (2001) defines competitive advantage as when a firm has ability to do better than comparable firms in productivity, sales, market shares, or profitability. Technology attributes of purchased inputs, product differentiation, production economies and external factors are the primary source of competitive advantage. Low Product pricing, sales/Market share, profitability ratio (Net profit/ net sales) play an important role in the competitive advantage of a firm. According to Porter (1980) agribusiness become more competitive through cost leadership and /or product differentiation.

Policies for agriculture consist of government decisions that influence the level and stability of input and output prices, public investments affecting agricultural production, costs and revenues and allocation of resources (Alila & Atieno, 2006). According to van den Bosch (1994) Government can create favourable conditions for business and can act as a challenger for it. The contingency theory suggests that companies that adapt their government policy to their market practices tend to improve their performance. From the contingency viewpoint, different types of companies operating in different situations require different government policy. Firms can get a variety of support from their government including tax allowances, grants, loans, information technology, social support; productivity assistance and financial capital (Storey & Techer, 1998). The policy formulation environment for the Kenya sugar sub-sector has not been favourable to speedy resolution of the problems identified in many stakeholder forums.

1.1 Statement of the Problem

Odek, Kegode, & Ochola, (2003) indicates that the problems affecting the millers in Kenya are due to, inefficient factory operations, inefficient agronomic practices, State intervention and debt burden. These challenges cannot enable the sugar industry to compete effectively in the Common Market for Eastern and Southern Africa (COMESA) region putting at stake 25% of the population that depends on the industry. Factories operate at an average capacity utilization of 50-60% due to technical and management limitations (KSB, 2010). Average sugarcane yield in

2013 was 54.67 tonnes per hectare nearly half as much as Zambia whose yield was 113 tonnes per hectare (KSB, 2013). The high production costs for processing sugarcane is associated with: low quality of sugarcane; low recovery rates; low capacity utilization; rising maintenance and repair costs; inadequate research and extension services, high costs of investment, financial structures and the falling value of the Kenya shilling (Kaumbutho, Awiti, & Some., 1991). The industry is dominated by the state, and thus the competitive advantage of the sugar sector is affected by the state (Ellis & Singh, 2010). Taxes and levies applicable are higher than countries within the COMESA region (KPMG, 2010). The collapse of this sector may have an adverse effect on the employment rate, economic activities and livelihood of Kenyans especially those from Western Kenya. Therefore, there is need to establish the influence of Government policy on the relationship between Strategic Capabilities and Competitive Advantage of Sugar Companies in Western Kenya.

1.2 Research Objective

To determine the Moderating influence of Government policy on the relationship between the Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya.

1.3 Research Hypothesis

This study tested the following null hypothesis:

H₀₁: The Government policy does not moderate the relationship between the Strategic Capabilities and Competitive Advantage of Sugar Companies in Western Kenya.

1.4 Theoretical Framework

The competitive advantage of a firm in this study can be analyzed using the Porter's Diamond Theory and Dynamic Capability Theory.

1.4.1 Porter's Diamond Theory

The diamond model is an economical model developed by Porter (1990) why particular industries become competitive in particular locations. Porter's model takes the industry structure (outside – in) as its starting point. It suggests that the national home base of an organization plays an important role in shaping the extent to which it is likely to achieve competitive advantage on a global scale. This model consists of four national determinants of competitive advantage: factor conditions, demand conditions, related and supporting industries and firm's strategy, structure and rivalry. Rivalry is central in Porter's analysis; more than any other factor and it stimulates companies to upgrade their production processes. Consumer demand in a country is an impetus for innovation, when consumers are demanding and critical. Finally, related and supporting industries' form a determinant of competitive advantage. Interaction with suppliers and clients stimulates upgrading; cooperation in developing new products becomes easier. The determinants do not operate in isolation, but influence each other. Government's real role in national competitive advantage is in influencing the four determinants. Nevertheless Porter's framework shows that considerably more governmental actions influence competitive advantage. Porter's theory is that these factors interact with each other to form conditions where innovation and competitiveness occurs. The factor conditions under Porter's theory namely human resources, material resources, knowledge resources, capital resources, and infrastructure are relevant to this

research.

1.4.2 Dynamic Capability Theory

According to Pavlou and El Sawy, (2011), the dynamic capability view originates from Schumpeter's innovation-based competition where competitive advantage is based on the creative destruction of existing resources and novel recombination into new operational capabilities. The concept of dynamic capabilities (DCs) is an extension of Resource-Based View theory (RBV) for its ability to respond to rapidly technological change (Teece, 2007). Dynamic capabilities have lent value to the RBV arguments as they transform what is essentially a static view into one that can encompass competitive advantage in a dynamic context (Barney, 2001a, b). Teece, Pisano and Shuen (1997) developed the notion of dynamic capabilities as the capacity of the firms to renew competencies so as to achieve congruence with the changing business environment by adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competencies.

2. EMPIRICAL LITERATURE REVIEW

2.1 Strategic Capabilities and Competitive Advantage

Phong and Yoshi (2010) looked at Organizational Capabilities, Competitive Advantage and Performance in Supporting Industries in Vietnam. The study focused on applying the Resource-Based View theory (RBV) of firms to explain performance in supporting industries in Vietnam. The study focused on Hanoi City, which is one of the most developed locations in Vietnam. A structured questionnaire was administered to 250 firms, 118 were returned and 102 questionnaires were valid. A multivariate analysis of survey responses of 102 firms belonging to supporting industries in Vietnam indicated that the organizational capabilities are related to the competitive advantage of a firm. Ngugi (2011) carried out a case study on "Strategic Capabilities for Competitive Advantage in British Broadcasting Corporation – Global News, Africa" Data was collected using interview guide and qualitatively analyzed using content analysis method. The study established that human resource, strong brand, credibility, technologically advanced equipment strategic capabilities have enabled British Corporation to be competitive. The study notes that to remain competitive, the organization must continuously adapt its strategic capabilities to the changing operating environment.

Onyango, Wanjere, Egessa and Masinde (2015) research on Organizational Capabilities and Performance of Sugar Companies in Kenya found out a statistically significant correlation between organizational capability and performance of sugar manufacturing firms ($r= 0.653$, $p=0.01$). The study established that 42.6% of the performance of these firms was accounted for by the organizational capabilities that they have in place. The study was carried out in Western Kenya. The study adopted causal comparative research design. The research used questionnaires and interview schedules to collect the primary data. The study employed purposive sampling technique to select respondents to whom questionnaires and interview schedules were administered. Descriptive statistics employed the use of means, frequencies and percentages. Pearson Product Moment Correlation and regression analysis were used to establish the effect of

organizational capabilities on the sugar manufacturing firms in western Kenya. The study recommends that the sugar manufacturing firms should proactively identify, nurture and continually learn and enhance their core competencies in order to obtain, deepen and sustain their competitive advantage.

Seyhan, Ayas, Sönmez and Uğurlu (2017) observed that marketing capabilities, market-linking capabilities, information technology capabilities and management related capabilities had a positive effect on competitive performance of a firm. The study was on “The Relationship between Strategic Capabilities and Competitive Performance: The Moderating Role of Internal Cooperation”. A five-point Likert scale self-report questionnaire was used in the survey and completed by the upper-level and middle-level managers of the firms in the industry of machine made carpet in Turkey which had been in operation for more than five years. 117 firms were identified and only 69 firms accepted to participate in the research. In total 290 questionnaire were distributed and 203 were returned. The study observed that capabilities are a crucial component for sustaining competitive advantage and it is important for organizations to create strategic capabilities in order to enjoy competitive performance.

Chepkole (2019) researched on “Effect of Strategic Capability on Competitive Advantage of Information Technology Firms in Nairobi City County, Kenya”. The study found out that financial resource capability, knowledge management capability and cost efficiency capability had a positive and significant influence on competitive advantage of IT firms in Nairobi County. The instrument for primary data collection in this research was a numerical 5-point Likert scale questionnaire administered to 143 owners of IT firms in Nairobi City County. The findings were analyzed using descriptive and inferential statistics. Descriptive analysis comprised the use of percentages, means, overall mean and standard deviation. The inferential analysis included both correlation and regression analysis. The study recommended that firms need to practice strategic financial resource budgeting to maximize efficient use of the available resources.

2.2 Government Policy and Competitive Advantage

Arjchariyaartong (2006) found out that the analysis of problems and obstructions of the sugar industry in Thailand was divided into economic problems, processing problems, market problems, regulation problems, and management problems. Both the primary data for the crop year of 2003/04 and secondary data from 1982 to 2006 were used. Sample selection employed purposive sampling, stratified sampling and random sampling methods. Ellis and Singh (2010) compared the policy framework and economic performance of four product markets (sugar, cement, beer and mobile phone services) across five countries (Zambia, Kenya, Ghana, Vietnam and Bangladesh) through primary research conducted in each country. The state is heavily involved in the sugar industry in the three of the case study countries, Kenya, Vietnam and Bangladesh. The state led sugar industries exhibit low productivity and poor performance. They required substantial levels of costly government subsidization, which is unlikely to be sustainable in the long run, thus jeopardizing many livelihoods. In stark contrast, privately owned sugar producing companies in Zambia, produce the highest amounts of sugar per hectare, (three times higher than Vietnam) and are very profitable and internationally competitive. This

suggests that private sector incentives and management expertise are important for creating a successful, efficient and internationally competitive sugar industry.

Emam and Musa (2010) measured the competitiveness of sugarcane in Kenana Sugar Company covering the seasons 2004/05, 2005/06, and 2006/07. The study revealed that, sugar production appeared highly competitive in the national and international level under study period. The study depended mainly on secondary data. The study recommended that, the government should exempt sugarcane production from taxes, induce incentives to encourage sugar industry production and secure sustainable and steadiness in foreign exchange. Ogolla (2012) employed a comparative case study of smallholder farmers in the sugar belt region of Kenya. The purpose of the study was to examine how privatization and liberalization has affected farmers. This was in response to the Kenyan government adopting privatization and liberalization policies. A combination of secondary and primary data was used. Findings revealed that the relevance of neo-patrimonialism in the implementation of Structural Adjustment Programmes is difficult to ignore as it intricately defines development outcomes for smallholder farmers in the sugar-subsector. With the withdrawal of government support inform of subsidies and tariffs, competition has driven and shaped the markets rendering ill equipped smallholder farmers disadvantaged in facing resulting pressures.

Jemaiyo (2013) found out that appropriate policies are crucial to create the conditions within which competition can thrive, and authorities can help to build a culture of competition, and increase awareness of competition issues amongst policy-makers and the public. The study targeted 357 managers of Mumias Sugar Company in Kenya from whom a sample of 112 respondents was selected. Sample selection methods used were, stratified sampling, purposive sampling and random sampling. The research found out that in the year 2008, MSC adopted diversification strategy to counter the effects of the Regional Trade Agreements (RTAs) resulting in cheap sugar imports.

2.3 Conceptual Framework

This study is guided by the conceptual framework in figure 1.

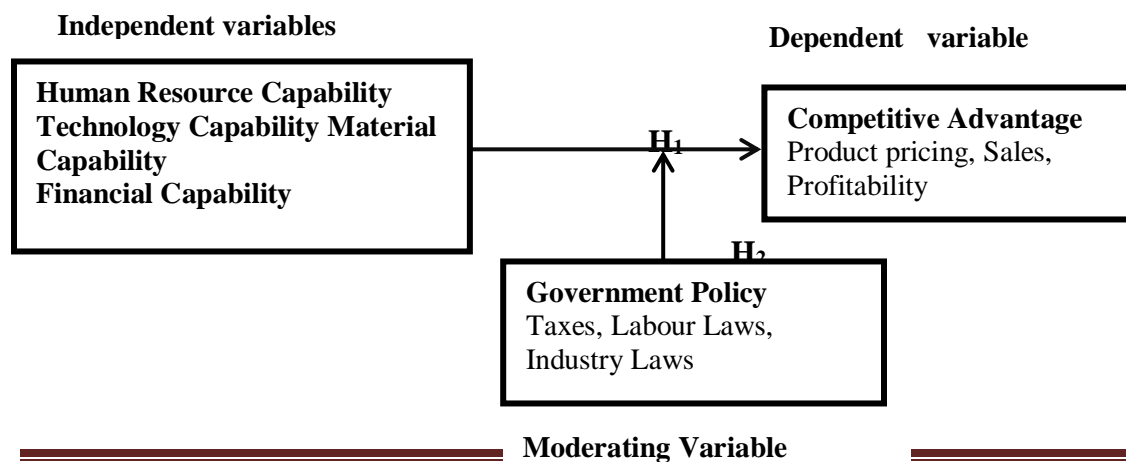


Figure 1: Moderation of Government Policy on the Relationship between Strategic Capabilities and Competitive Advantage

3. RESEARCH METHODOLOGY

According to Shukla (2010) a research design is a framework or a blue print for conducting a research. It provides a clear plan on how the research will be conducted and helps the researcher in sticking to the plan. The present research is a descriptive cross sectional and correlational designs. Descriptive statistics was used to summarize both the primary and the secondary data to enable meaningful interpretation and description. The descriptive analysis technics that were used in this study are: percentages, means, overall mean and standard deviation. Standard Deviation (SD) provides an indication of how far the individual responses to a question vary or "deviate" from the mean. The distribution of responses is important to consider and the SD provides a valuable descriptive measure of this. Likert item means and overall mean were analyzed despite the ordinal nature of Likert items. Baggaley and Hull (1983), Maurer and Pierce (1998), Allen and Seaman (1997) and Vickers (1999) as cited by Brown (2011) have argued that Likert scales can indeed be analyzed effectively as interval scales as long as both the item mean and the item standard deviations are provided. Inferential statistics was used in the study to enable the researcher to reach conclusions about the relationship between the variables. The primary data was obtained from the senior and middle management staff of the sugar companies identified by the researcher using a well-structured five point Likert scale questionnaire pretested for validity and reliability. For reliability analysis Cronbach's alpha was calculated by application of SPSS. Construct validity was established by finding out whether the questions were correctly phrased in terms of clarity and ambiguity. Content validity was tested by use of experts and supervisors in the relevant areas. The target population in this study consisted of six sugar companies namely: Muhoroni, Chemelil, Mumias, Nzoia, South Nyanza and West Kenya and the respondents were composed of 727 senior and middle level managers working in these companies. Yamane (1967) provides a simplified formula for calculating sample size of 88 respondents. The respondents from each sugar firm provided the required primary data for the research. Sampling proportionate to size was undertaken to come up with the total number of middle and senior-level managers in each company.

The research instrument was developed based on the constructs identified in the conceptual framework. Validity is defined as the extent to which the instrument measures what it purports to measure. Reliability is defined as the extent to which a questionnaire, test, observation or any measurement procedure produces the same results on repeated trials. A sample size of 9 participants was used in the pilot study which is almost 10% of the sample size of 88 for the actual study. Baker (1994) found out that a sample size of 10% of the sample size for the actual study is a reasonable number of participants to consider enrolling in a pilot study. The researcher used the split-half reliability test and calculated the reliability of the questionnaire using the Cronbach's Coefficient Alpha. Alpha should be at least 0.70 or higher to retain an item in an adequate scale (Hair, Black, Babin, Anderson, & Tatham, 2006). The independent variables were human, technology, raw material and financial capabilities and the dependent variable was the

competitive advantage. The moderating variable was the government policy. The uses of correlation analysis and logit regression were used to help answer the objectives of the study. The Chi-Square Test was used for the fit of the model and hypothesis testing. Chi-square test examined the magnitude of discrepancy between observed frequencies (obs) and expected frequencies (exp). Level of significance was set at 5% and refers to a criterion of judgment upon which a decision is made regarding the value stated in a null hypothesis. The moderating variable model used is

$$\text{Ln}(Y_i) = \beta_0 + \beta_1 X_1 M_1 + \beta_2 X_2 M_2 + \beta_3 X_3 M_3 + \beta_4 X_4 M_4 + \varepsilon; \text{ Where,}$$

X₁= Human resource capability

X₂= Technology capability

X₃= Material capability

X₄= Financial capability and

M = Government policy

This formula provides the odds of competitive advantage where Y= 1 and ε is the error term.

4. RESULTS AND DISCUSSION

The targeted sample size of 88 participants comprised the senior and middle level managers working in six sugar companies namely: Muhoroni, Chemelil, Mumias, Nzoia, South Nyanza and West Kenya. Those filled, returned and usable questionnaires were 64 making a response rate of 73%. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

4.1 Descriptive Statistics

The objective of the study was to determine the moderating influence of Government policy on the relationship between Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya. The strategic capabilities in question are human resource, technology, material and financial. Questions were formulated along the labour laws, taxation regime and industry laws in the sugar sector to bring out from the respondents the information required. The respondents were requested to state whether the statement affected the sugar industry positively or negatively. The results are presented in table 1 measured in a Likert scale of 1-5 where 5= Very Positive; 4= Positive; 3=Neutral; 2=Negative; 1=Very negative, M= Mean and STD= Standard deviation, f= frequency of respondents and % = Percentage of Respondents. The item mean Likert value below the mean of means for the descriptive statistics responds to the statement not being acceptable and above mean of means the statement is acceptable.

Table 1: Results of Government Policy and Competitive Advantage

S/ N	Statement		5	4	3	2	1	M	Std.
a)	Kenya Government taxation regime in sugar industry	%	10.9	17.	7.2	31.	32.	2.3	1.3
	increases price of sugar	f	7	2	5	3	8	9	9
b)	Lack of subsidy to sugarcane farmers increases cost of sugarcane production	%	6.3	23.	6.3	32.	31.	2.4	1.3
		f	4	4	8	3	1	2	
c)	Kenya Labour laws governing the relationship between employers and employees stabilizes the operation of the sugar industry	%	7.8	45.	20.	23.	3.1	3.2	1.0
		f	5	3	3	4	2	7	6
d)	Non-enforcement of laws governing the conduct of millers and growers affect the sugar industry	%	14.1	21.	10.	25	28.	2.7	1.4
		f	9	9	7	16	18	0	4
e)	Government should enforce trade regulations in the sugar sector.	%	54.7	35.	4.7	3.1	1.6	4.4	0.8
		f	35	9	3	2	1	1	3
f)	Government should categorize sugar as a food in order to reduce taxation.	%	67.2	25	1.6	3.1	3.1	4.4	0.9
		f	43	16	1	2	2	5	4
g)	Government should provide financial support and incentives for diversification	%	68.8	25	3.1	3.1	0	4.6	0.6
		f	44	16	2	2	0	4	8
h)	Kenya Government should privatize state owned sugar millers.	%	45.3	29.	6.3	12.	6.3	3.9	1.2
		f	29	7	5	8	4	5	8
Mean of Means								3.5	1.1
								2	2

From table 1, 41(64.1%) of the respondents indicated that the tax regime on the sugar industry by the government affected it negatively, 5(7.8%) were neutral while 18(28.1%) indicated that the tax regime affected the sugar industry positively. The mean score of 2.39 against the mean of means of 3.52 indicated that the tax regime affected the competitive advantage of the sugar industry negatively. On the other hand, 41(64.1%) of the respondents indicated that lack of subsidy to sugarcane farmers affected the sugar industry negatively, 4(6.3%) were neutral and 19(29.7%) said it affected the competitive advantage of the Kenya sugar industry positively. The mean score of 2.41 against the mean of means of 3.52 showed that the respondents were in agreement that lack of subsidy affected the competitiveness of the industry negatively. The tax regime and lack of subsidy are critical factors to the competitive advantage of the sugar industry

in the COMESA region and fall under the ambit of the Government. Direct involvement of the Government could enhance the competitive advantage of the Kenya sugar industry.

The study further showed that 17(26.5%) of the respondents indicated that the Kenya labor laws governing the relationship between employers and employees affected the sugar industry negatively, 13(20.3%) were neutral and 34(53.1%) indicated that the laws affected the sugar industry positively. The mean of 3.27 against the mean of means of 3.52 established that the statement was not acceptable. This could have been caused by the large number of neutral respondents at 13(20.3%) Moreover, 34(53.1%) of the respondents indicated that non enforcement of laws governing the conduct of millers and growers affected the sugar industry negatively, 7(10.9%) were neutral while another 23(36.0%) indicated that the sugar industry was affected positively. The mean of 2.70 against the mean of means of 3.52 indicated that non enforcement of the laws governing the conduct of millers and growers affected the sugar industry negatively.

However, 58(90.6%) of the respondents held that enforcement of the trade regulations by the Kenya Government would affect the sugar industry positively, 3(4.7%) were neutral and (4.7%) held that the enforcement of trade regulations would affect the industry negatively. The mean score of 4.41 against the mean of means of 3.52 indicated that the respondents were overwhelmingly in agreement that enforcement of trade regulations would affect the sugar industry positively. On the other hand, 59(92.2%) of the respondents held that sugar should be categorized as a food in order to positively affect the competitiveness of the sugar sector, 1(1.6%) was neutral and 3(6.2%) saw this move as affecting the industry negatively. The mean of 4.45 against the mean of means of 3.52 indicated that the value-added tax on sugar was a major concern to most of the respondents and vouched for its removal. This observation support Arjchariyaartong (2006) findings that issue facing sugar industry in Thailand is divided into economic problems, processing problems, market problems, regulation problems, and management problems and Emam and Musa (2010) recommendation that, the government should exempt sugarcane production from taxes to lower the cost of sugar production and make the industry have competitive advantage.

Further, 60(93.8%) of the respondents were of the opinion that the government should provide financial support and incentives for product diversification to positively affect the sugar industry, 2(3.1%) were neutral and 2(3.1%) thought that this move would affect the sugar industry negatively. The mean of 4.64 against the mean of means of 3.52 showed that the respondents were in agreement that financial support to the sugar sector was critical to the revamping of industry competitive advantage. Finally, 48(75%) of the respondents supported the privatization of the state-owned sugar mills as positive to the sugar sector competitive advantage, 4(6.3%) were neutral and 12(18.8%) of the respondents thought that privatization of state owned sugar millers would affect the sugar industry negatively. The mean of 3.95 against the mean of means of 3.52 indicated that the respondents believed that the privatization of state owned mills would make the Kenya sugar industry have competitive advantage. This view of the respondents support findings by Ellis and Singh (2010) that private sector incentives and management expertise are important for creating a successful, efficient and internationally competitive sugar

industry. The mean of means of 3.52 of all items in the Likert scale indicated that the respondents were in agreement that government intervention was critical and essential if the sugar sector has to gain competitive advantage.

According to Monitoring African Food and Agricultural Policies (MAFAP) (2013), sugar in Kenya is not classified as a basic food, so it is subject to a 16 percent value added tax (VAT). If value added tax is removed, ex-factory sugar price should be able to go down by the 16% VAT that is charged. This reduction in price would enhance the competitive advantage of the industry. This view is supported by 92.2% of the respondents that sugar should be categorized as a food in order to reduce taxation.

4.2 Inferential Statistics

Strategic Capabilities and Competitive Advantage

The study used logit regression and correlation analyses to determine the influence of Strategic Capabilities on Competitive Advantage of sugar companies in Western Kenya.

Logit Regression Analysis

Logit regression analysis to measure the influence of the Strategic Capabilities on Competitive Advantage of sugar companies in Western Kenya was carried out. The independent variables in the function were human resource, technology, material and financial capabilities while the dependent variable was the competitive advantage. The scores for the strategic capabilities were categorized into two: 0-weak and 1-strong. The competitive advantage was also binary: 0-not competitive and 1-competitive. The study results for a logit regression analysis to measure the influence of the Strategic Capabilities on Competitive Advantage of the sugar companies under study are presented in Table 2 and fitted into a model.

Table 2: Logit Regression of Strategic Capabilities and Competitive Advantage

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Human Resource Capability	1.656	.914	3.281	1	.070	2.191	.032	3.146
Technology Capability	1.003	.740	1.838	1	.175	2.727	.639	11.629
Material Capability	2.019	.873	5.355	1	.021	7.533	1.362	41.663
Financial Capability	-.180	.667	.073	1	.787	.835	.226	3.086
Constant	-.813	.516	2.481	1	.115	.444		

Odds of competitive advantage of sugar companies

$$= -0.813 + 1.656x_1 + 1.003x_2 + 2.019x_3 - 0.180x_4$$

Where

β_0 is the constant

x_1 is Human resource capability

x_2 is Technology capability

x_3 is Material capability

x_4 is Financial capability

From the logit regression analysis several deductions were made. First, firms that had strong human resource capability were 2.191 times more likely to enjoy competitive advantage compared to those that had weak human resource capability though the relationship was statistically insignificant ($p= 0.070$). Secondly, Companies that had strong technology capability were 2.727 times more likely to enjoy competitive advantage though the relationship was statistically insignificant ($p= 0.175$). Thirdly, Companies that had strong material capability were 7.533 more likely to enjoy competitive advantage compared to those that had weak material capability and the relationship was statistically significant ($p=0 .021$). Lastly, Companies that had strong financial capability were less likely to achieve competitive advantage compared to those that had weak financial capability with an Odds Ratio of 0.835 and the relationship was statistically insignificant ($p=0.787$). The logit regression analysis revealed that when all the strategic capabilities were acting on the competitive advantage at the same time; material capability was the most critical strategic capability and statistically significant on determining the competitive advantage of the sugar companies in Western Kenya. These study findings support Duncan, Gintei and Swayne (1998) that effective strategic management requires an understanding of organizational resources and competencies as well as how each contributes to the formation of organizational strengths and ultimately to the development of a competitive advantage. Logit regression analysis to measure the influence of the Combined Strategic Capabilities on Competitive Advantage of sugar companies in Western Kenya was carried out and the study results are presented in Table 3 and fitted into the model.

Table 3: Logit for Combined Strategic Capabilities and Competitive Advantage

	B	S.E.	Wald	df	Sig.	Exp(B)
Strategy Capability	1.022	0.536	3.641	1	0.056	2.779
Constant	-0.811	0.425	3.642	1	0.056	0.444

The findings show that sugar companies that have strong combined Strategic Capabilities are 2.779 times more likely to enjoy competitive advantage compared to those that have weak Strategic Capabilities.

$$\text{Odds of competitive advantage of sugar companies} = -0.811 + 1.022x_1 + 0.961$$

Where

The constant, $\beta_0 = -0.811$

$x_1 =$ Strategic capability and

The term error (S.E.) = 0.961

Correlation for Combined Strategic Capabilities and Competitive Advantage

The correlation strengths were interpreted using Cohen (1988) decision rules where r values from 0.1 to 0.3 indicate weak correlation, 0.31 to 0.5 indicate moderate correlation strength and greater than 0.5 indicate a strong correlation between the variables. Correlation analysis was carried out to gauge if there was any relationship between Combined Strategic Capabilities and Competitive Advantage; the direction of this relationship and the strength of this relationship. Correlation is significant at 0.05 level if p values are 0.05 and below and insignificant if p values are more than 0.05. Table 4 provides the results of these tests.

Table 4: Correlation of Combined Strategic Capabilities and Competitive Advantage

Variable		Competitive Advantage	Strategic capability
Spearman's rho	Competitive Advantage	Correlation Coefficient	1.000
		Sig. (2-tailed)	.
		n	64
	Strategic Capabilities	Correlation Coefficient	0.242
		Sig. (2-tailed)	0.054
		n	64

The study established that there is an insignificant weak positive relationship between Combined Strategic Capabilities and Competitive Advantage, $n(64) = 0.242$, $p=0.054$, $CL=95\%$ (2-tailed). This meant that positive adjustments on firms' strategic capabilities would lead to an improvement of Competitive Advantage of sugar companies in Western Kenya.

Combined Strategic Capabilities, Government Policy and Competitive Advantage

The objective and null hypothesis the study was to achieve are "To determine the moderating influence of Government policy on the relationship between Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya" and H_{01} : The Government policy does not moderate the relationship between Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya respectively.

Logit Regression Analyses

The study carried out two logit regression analyses:

- i) Logit regression analysis to measure the influence of Government policy on competitive advantage of sugar companies.
- ii) Logit regression to analyze the moderating influence of Government policy on the relationship between the strategic capabilities and competitive advantage of sugar companies.

These regressions were carried out to bring out clearly the influence of each set on competitive advantage of the sugar companies in Western Kenya for better understanding of the study objective. A logit regression analysis was carried out to measure the influence of the

Government policy on competitive advantage and the output of the analysis is presented in Table 5 and fitted into a model.

Table 5: Logit of Government Policy and Competitive Advantage

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.L.for EXP(B)	
							Lower	Upper
Government Policy	0.973	0.551	3.122	1	0.077	2.647	0.899	7.791
Constant	-0.827	0.453	3.328	1	0.068	0.438		

Odds of competitive advantage of sugar companies = $-0.827 + 0.973m_1 + 1.004$, Where

- 0.827 is the constant

m_1 - Government policy

1.004 is the error term (SE)

The outcome of the logit regression analysis is that there is a positive statistically insignificant relationship between the government policy and competitive advantage ($p= 0.077$). The results reveal that companies that are supported by enabling government policy are 2.647 times more likely to enjoy competitive advantage compared to those that have a stifling government policy.

Logit regression to analyze the moderating influence of Government policy on the relationship between the Strategic Capabilities and Competitive Advantage (CA) of sugar companies was carried out and results are shown in Table 6.

Table 6: Logit of Strategic Capabilities, Government Policy and Competitive Advantage

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Human resource capability by Moderator	.378	.464	.664	1	.415	1.459	.588	3.622
Technology capability by Moderator	-1.195	.682	3.071	1	.080	.303	.080	1.152
Material capability by Moderator	.783	.708	1.223	1	.269	2.188	.546	8.764
Financial capability by Moderator	.338	.231	2.143	1	.143	1.402	.892	2.203
Constant	-.474	.335	2.004	1	.157	.623		

Odds of competitive advantage of sugar companies given government policy

$$= -0.813 * -0.474 + 1.656 * 0.378x_1 + 1.003 * -1.195x_2 + 2.019 * 0.783x_3 - 0.180 * 0.338x_4$$

$$=0.385 + 0.626 x_1 - 1.956x_2 + 1.581x_3 + 0.061x_4$$

Where:

β_0 is the constant

x_1 is Human resource capability

x_2 is Technology capability

x_3 is Material capability

x_4 is Financial capability

Values with * were obtained from Table 2

Government policy influenced human resource capability positively by 1.459 times and technological capability negatively by 0.303. It was also established that the Government policy enhanced material and financial capabilities of the sugar companies in western Kenya by 2.188 and 1.402 times respectively.

The study carried out logit regression to analyze the moderating influence of Government policy on the relationship between the Combined Strategic Capabilities and Competitive Advantage of sugar companies.

Table 7: Combined Strategic Capabilities , Government Policy and Competitive Advantage

	B	S.E.	Wald	df	Sig.	Exp(B)
Government policy and combined strategic capabilities	1.409	0.535	6.928	1	0.008	4.091
Constant	-0.821	0.362	5.149	1	0.023	0.440

The findings showed that sugar companies that had strong Combined Strategic Capabilities when positive Government policy was in play were 4.091 times more likely to be competitive compared to those that had weak Strategic Capabilities.

$$\text{Odds of competitiveness of sugar companies} = -0.821 + 1.022 * 1.409x_1 + 0.897$$

Where

$\beta_0 = -0.821$ - The constant

x_1 - Strategic capability and 1.022 is value from table 2.

Hypothesis Testing

The study tested the null hypothesis using the Chi-square computed value which was compared with the Chi-square distribution reading and a decision made whether to reject the null hypothesis or fail to reject it. This was done at 95% confidence Level and 5% Significance Level.

H₀₁: The Government policy does not moderate the relationship between the Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya.

The X^2 test statistics = 3.920 df =1
 The X^2 critical values= 3.84 at 95% CL

Since the X^2 critical values = 3.84 < X^2 test statistics = 3.920 (df =1), the test statistic therefore falls in the rejection region. We, therefore, reject the null hypothesis that the Government policy does not moderate the relationship between the Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya. We, therefore, conclude that Government policy significantly moderates the relationship between Strategic Capabilities and Competitive advantage of sugar companies in Western Kenya.

Table 8 compares the influence of Combined Strategic Capabilities on Competitive Advantage of sugar companies in Western Kenya before and after moderation by the Government policy.

Table 8: Combined Strategic Capabilities, Government Policy and Competitive Advantage

S/N	Inferential	Before moderation	After moderation
1.	Logit regression	Sugar companies that had strong Combined Strategic Capabilities were 2.779 times more likely to enjoy competitive advantage compared to those that had weak Strategic Capabilities.	Sugar companies that had strong Combined Strategic Capabilities when positive Government policy was in play were 4.091 times more likely to enjoy competitive advantage compared to those that had weak Strategic Capabilities.
2.	Correlation Analysis	It was established that there was insignificant weak positive relationship between Strategic Capabilities and Competitive Advantage, $n(64) = 0.242$, $p=0.054$, CL=95% (2-tailed).	It was established that there was a weak statistically significant positive relationship between government policy and competitive advantage $r=0.224$, $p=0.038$, CL=95% (2-tailed).

The logit regression result shows that positive Government policy enhances competitive advantage of sugar companies from 2.779 times before moderation to 4.091 times after moderation and the hypothesis testing converts the relationship from no significant relationship before moderation to significant relationship after moderation. The respondents are categorical that the Kenya Sugar industry may enjoy competitive advantage if the Government provides financial support and incentives for diversification (93.8%); Sugar is categorized as a food to eliminate taxation (92.2%); trade regulations are enforced (90.6%) and privatization of the state-

owned sugar mills (75%). These results are in agreement with Sheales, Gordon, Hafi, and Toyne(1999) who found out that distortions in world sugar trade stemmed largely from government policies in a small number of countries. The policies pursued in these countries imposed substantial economic costs worldwide. On the other hand, Arjchariyartong (2006) found out that government policies and political location factors such as subsidies, taxes, regulations and exchange rate influenced the competitive advantage of a firm. Appropriate policies are crucial to creating the conditions within which firms may enjoy competitive advantage, and authorities can help to build these.

According to Dollery and Worthington (1996), theory of market failure facilitates the identification of undesirable market outcomes and assists in the prescription and implementation of corrective government intervention. Policies are key instruments of Government and will continue to be used to promote public interests, but it is increasingly apparent that they must be carefully designed to minimize the negative impacts on businesses (Organization for Economic Co-Operation and Development, 1997). 75% of the respondents held that the state-owned sugar mills should be privatized in order to inject professionalism and accountability.

5. CONCLUSION

The Government policy significantly moderates the relationship between Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya as shown by the mean of means of 3.52 of all items in the Likert scale; logit regression results show that sugar companies that had strong Strategic Capabilities when positive Government policy was in play were 4.091 times more likely to enjoy competitive advantage compared to those that had weak Strategic Capabilities and the hypothesis result show that Government policy significantly moderates the relationship between the Combined Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya (X^2 critical values of 3.84 was less than X^2 test statistics value of 3.920 leading to the rejection of the null hypothesis that Government policy does not moderate the relationship between Strategic Capabilities and Competitive Advantage of sugar companies in Western Kenya).

6. RECOMMENDATION

Based on the findings, the following recommendations are made:

The government and the sugar industry stakeholders to establish a standing joint committee to resolve the emerging issues around sugarcane area zoning drop in sugarcane yield, poor road infrastructure, and value added tax, financial debt and privatization of the public owned sugar mills.

Areas for Further Research

A review of the literature indicates that few studies have been carried out on the influence of Strategic Capabilities on Competitive Advantage of the sugar industry in Kenya. The study focused on Muhoroni, Chemelil, Mumias, Nzoia, South Nyanza and West Kenya sugar companies. Most of which are State owned companies except Mumias and West Kenya sugar companies. Therefore, an expansion of the geographical scope of the study to involve more

private owned sugar companies in Kenya is required to enable the generalization of the result in the country. Hence, the study recommends further research on “Influence of Strategic Capabilities on Competitive Advantage of Privately owned Sugar Companies in Kenya”

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