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Research Article

Effects of Strategy Implementation on Firm Profitability: A Case of State Owned Sugar Factories in Western Kenya

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Abstract

State owned Sugar factories performance has been on a declining trend for over ten years in Kenya. Management has been blamed mostly for this trend. Sugar firms, however, have had robust attempts to expand its operations to respond to the grace period given to Kenya sugar Industry. The general objective of this study was to analyze the effect of strategy implementation on the performance of state owned sugar firms in Western Kenya. Strategy implementation was measured using document analysis and annual reports. Profitability was measured as annual net profit Panel data analysis based on Generalized Method of Moments (GMM) technique was used to estimate a multiple regression model using instrumental variables regression and test for significance of relationship between strategy implementation and performance. The findings were that Growth Strategy implementation has a significant correlation coefficient = -3.187052 with p-value of 0.051; Cost Minimization Strategy was also significantly correlated with firm performance with a correlation coefficient = -1175.274 and a p-value of 0.951, while Product Differentiation Strategy was significantly related with a regression coefficient = 13042 and p-value of 0.685, all these at R-squared value of 0.9709 at 95% confidence interval. The moderator variable for the research - Market demand had a significant effect on firm performance with a p-value (0.0057**). Thus the study revealed the existence of a significant relationship between strategy implementation and performance and recommended that privately owned sugar firms should diversify their operations, cut operational and overheads costs to minimize cost and increase their nuclear estates.

Keywords: Strategy implementation; Sugar firms; Performance; Kenya.

Introduction

An organization seeks to serve the diverse needs of its existence [1]. The main concern of an organization is its continued existence over time [2]. However, this continual existence is not certain, and so the organizations must work for this. An organization will therefore ensure proper strategy formulation to achieve this goal. Most organizations have tried to minimize the effect of poor performance of a product or service they are engaged in by expanding their operation so as to remain relevant during low periods of product or service performance. Internationally, firms have applied franchising their brands and others expanding their operation region even to international levels. The treaty in Africa - which is a free trade area with 20 member states and a net sugar exporter - has influenced several firms in the continent to realign their operations and others to close due to the increase in competing firms under the treaty [3].

Kenyan government has over the past 15 years requested for an extension of the deadline period given to the sugar industry to position itself as a means of protecting its vulnerable firms from the competition from sugar-cheap producing nations [4]. The government has initiated various means to achieve this which include among others privatization of government owned sugar firms and revamping the operation of the industry for profit realization. Strategies are made from well researched data and information and give a clear blueprint of what a firm can implement to achieve its desired goals. However, Research shows that more than 50% of the formulated strategies of firms fail at implementation stage [3] poorly implemented strategy on the other hand is also inconsequential as it is better to

Received: 08.03.2017; Received after Revision: 10.03.2017; Accepted: 10.03.2017; Published: 11.03.2017 ©International Journal of Industrial Engineering. All rights reserved. implement a second class strategy that to not or poorly implement a first class strategy.

Low profitability records in Sugar Company should be of a great concern to the management and stakeholders at large since this can lead to an extreme condition of possibility to close leading to the risk of investors losing their investments and the western region population who highly depend on this firm and sector that contributes a lot in their socio-economic status [5]. Ideally, good performance of a firm is based on higher productivity and increasing employment, as more resources are put to work productively, but these measures do not always move in tandem [6].

Research methodology

The research was a longitudinal research design. This method is suitable because it tracks performance over time and can relate them to variables that might explain why the changes occur. Longitudinal research involves repeated observations of the same variables over a long period of time. Longitudinal research designs describe patterns of change and help establish

Table	1.	Sampl	led]	Factory
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the direction and magnitude of causal relationships. The design permits the measurement of differences or changes in a variable from one period to, as well as allows the prediction of future outcomes based upon earlier.

Sample size and sampling techniques

The research was a case study of state owned sugar Companies in western Kenya. These techniques have been previously used in research since they allow the researcher to focus on people or events that they believe will be important in their research [7]. Nachmias [8] argues that, the researcher is able to dwell on instances which display a wide variety possible and even focus on extreme cases to highlight the research question at hand with the aim to explore the quality of the data and not the quantity. The research is on strategic management. Strategy formulation is a priority of the top management, while strategy implementation relies on middle and line managers; hence the research engaged top, middle and line managers from these companies and other casual employees who have strategic implementation responsibilities.

S.No.	Sugar Firms	Output	Market Share	Year Started Operation
		(Metric tons)	(%)	
1.	Mumias Sugar Company	117,966	19.93	1971
2.	Nzoia Sugar Company	66,462	11.23	1975

Source: [9]

Data Collection

The researcher collected primary data pertaining to firm growth strategy and business performance. Panel data was used in linear modelling process. Panel data refers to the pooling of observations of separate units (Groups of People, firms, banks) on the same set of variables over several time periods [9]. Unstructured interview sessions were used as additional techniques of data collection of information that cannot be achieved easily from document analysis. All developed interview questions were open ended to allow for free answer from the respondent. All top management personnel of state owned sugar firms in Western Kenya were selected as the target respondents.

Data analysis

Multivariate Regression analysis was used in the study. The use of Multivariate regression analysis which is a component based technique can simultaneously examine theory (structural model) and measures (Measurement model). The technique model was able to deal with dependent variable on multiple independent variables [10]. The information was collected "on the field" with questionnaire the structured and systematized in an electronic database. The multivariate regression analysis took the following model in equation 1.

$$\mathbf{Y} = \boldsymbol{\alpha} + \beta_1 \mathbf{X}_1 + \beta_2 \mathbf{X}_2 + \beta_3 \mathbf{X}_3 + \boldsymbol{\varepsilon} \dots \mathbf{1}$$

Where:

Y: Net profit after tax in KES per annum

X₁: Annual Investment for Product diversification (KES).

X₂: Annual production cost per ton (KES).

X₃: Annual Cost for quality improvement (KES).

α: Constant term,

β: beta coefficients.

ε: error term.

The model in equation 1 presented a simplified approach of the relationship between the selected generic strategy implementation and performance. It explained the effect of the identified variables, median factor and performance of the sugar firms in the study area.

Results and discussions

Table 2 depicts the level of correlation between the explanatory variables and the dependent variable. It is observed that Product differentiation strategy (PDS) is negatively and significantly correlated to performance, with a correlation coefficient r = -0.9211. This suggests a fairly strong correlation. However, is fairly moderate, negative and significantly correlated with the cost minimization strategy (CMS) at r = -0.4009.

This suggests that strategy implementation aimed at making a differentiated product and minimize cost in sugar industry are related to enhance financial performance. Growth strategies (GS) shows low relation with a positive correlation coefficient of r = 0.4008. This implies, the currently applied growth strategies are not related to enhance financial performance in sugar industry.

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	Growth	Cost	Product	Profitability
	Strategy	Minimization	Differentiation	
Growth Strategy (X ₁)	1.0000	-	-	-
Cost Minimization (X ₂)	0.3182	1.0000	-	-
Differentiation (X_3)	-0.1018	0.7123	1.0000	-
Profitability (Y)	0.4008	-0.4009	-0.9211	1.0000

Source: Research data 2017

All the independent variables of differentiation, cost minimization and diversification are significantly related to performance and correlated at 91.65% for Mumias sugar. Mumias Sugar Company (Table 3) had diversification of ethanol production, power cogeneration and water bottling which has since been closed. The total cost the firm has invested in these diversification programs were summed-up to obtain the cost of diversification. Correlation of the independent variables was determined at R-squared = 89.16% at confidence interval of 95% showing high correlation between the independent variables and performance (Table 4). From the tabulated results, there is significance relation between the same independent variables and performance of Nzoia Sugar Company.

Table 3. Mumias Sugar company regression

. regress PROFITABILITY DIFFERENTIATION COST_MINIMIZATION GROWTH_STRATEGY

Source	SS	df	MS		Number of obs	= 6
Model Residual	5.0058e+13 4.5629e+12	3 2	1.6686e+13 2.2814e+12		F(3, 2) Prob > F R-squared	= 7.31 = 0.1226 = 0.9165 = 0.7912
Total	5.4621e+13	5	1.0924e+13		Root MSE	= 0.7512 = 1.5e+06
PROFITABIL~Y	Coef.	Std. I	Err. t	P> t	[95% Conf.	Interval]
DIFFERENTI~N COST_MINIM~N GROWTH_STR~Y _CONS	32.02607 33.03692 0078953 1380306	109.8 85.76 .0021 7929	611 0.2 486 0.3 228 -3.7 622 0.1	9 0.798 9 0.737 2 0.065 7 0.878	-440.6682 -335.9795 0170288 -3.27 e+ 07	504.7203 402.0533 .0012382 3.55e+07

Source: Research data 2017

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 Table 4. Nzoia Sugar company regression

	regress	PROFITABILITY	DIFFERENTIATION	COST MINIMIZATION
-	1	TROUT TO TET TI	DITTERENTIANTION	CODI _ HINDHIER I TON

Source	55	df	MS		Number of obs	=	6 12 24
Model Residual	6.5571e+18 7.9704e+17	2 3 2	3.2786e+18 2.6568e+17		Prob > F R-squared	=	0.0357
Total	7.3542e+18	5 1	L.4708e+18		Root MSE	=	5.2e+08
PROFITABIL~Y	Coef.	Std. Er	rr. t	P> t	[95% Conf.	In	terval]
DIFFERENTI~N COST_MINIM~N _cons	-98532.93 43005.85 5.42e+08	23573. 26756.4 1.71e+(52 -4.18 49 1.61 09 0.32	0.025 0.206 0.772	-173554.4 -42145.23 -4.90e+09	-2 1	3511.47 28156.9 .98e+09

Source: Research data 2017

Table 5. Regression for state owned sugar companies – Mumias and Nzoia **. regress PROFITABILITY DIFFERENTIATION COST_MINIMIZATION GROWTH_STRATEGY**

Source	55	df	MS			Number of obs	=	6 22 25
Model Residual	7.1777e+18 2.1508e+17	3 2	2.39 1.07	2 6e+18 '54e+17		Prob > F R-squared	=	0.0433
Total	7.3927e+18	5	1.47	85e+18		ROOT MSE	=	3. 3e+08
PROFITABIL~Y	Coef.	Std.	Err.	t	P> t	[95% Conf.	In	terval]
DIFFERENTI~N COST_MINIM~N GROWTH_STR~Y _CONS	13042 -1175.274 -3.187052 2.49e+08	27749 16997 .7465 1.37e	. 32 . 49 712 +09	0.47 -0.07 -4.27 0.18	0.685 0.951 0.051 0.873	-106353.7 -74309.55 -6.399289 -5.66e+09	1	32437.7 71959 .025185 .16e+09

Source: Research data 2017

Individual firm data regression as in figure 5 was also done for all the selected firms in the research and for combined state owned firms – Mumias and Nzoia Sugar Companies and privately owned firms – Butali and West Kenya Sugar factories separately to test the influence of the independent variables on the categories.

For Mumias Sugar Company (eq. 2) $Y = 138030 - 0.0078953X_1 + 33.03692X_2$ $+32.02607X_3 \dots 2$ For Nzoia Sugar Company (eq. 3) $Y = 5.42 \times 10^8 + 43005.83X_2 - 98532X_3 \dots 3$

Only Mumias Sugar Company has got diversification strategy in place where the firm has incorporated ethanol production from molasses, water bottling from reverse osmosis process and power co-generation from baggase. The other firms have had strategies formulated for diversification but none has so far been implemented. Growth strategy in Mumias sugar has a regression coefficient = -0.0078953 with a p-value = .065 and positive regression coefficient for both product differentiation and cost minimization regression coefficient = 32.02607 and 33.03692 respectively with p-value of 0.798

and 0.737 respectively. This shows the firm has not done well in overall diversification even though there is a significant profit indication in ethanol sales and power cogeneration, the water bottling plant which has since been closed has registered a big loss for the firm. The firm currently has plans to outsource management for this plant.

Empirical model was also done for a regression analysis of combination of state owned firms and private firm separately. The following model (eq. 4) was obtained for State owned companies of Mumias Sugar Company and Nzoja Sugar Company:

and Nzoia Sugar Company; $Y = 2.49 \times 10^8 + 13042X_1 - 1175.274X_2$ $-3.187052X_3 \dots 4$

The results indicated a negative regression coefficient for both cost minimization strategy at -1175.274 and product differentiation strategy at -3.187052 with a p-value of 0.951 and 0.685 respectively. This is an indication that the state owned sugar companies have for the past six years performed poorly in net profit and the strategies of cost minimization and product differentiation have not contributed to the realization of net profit for the firms.

Growth strategy, however, is the only contributing variable that had a positive regression coefficient at 13042 and a p-value = 0.873 at 95% level of confidence. Hence the firms have not had effective implementation of strategies of cost minimization and product differentiation but growth strategy which is seen in Mumias Sugar Company only. Due to the significant influence of the moderating variable – market demand, which is measured as the national sugar consumption level in tons, the GMM model therefore becomes eq. 5.

 $Y = 8314168 + 0.0000469X_1 + 28.68038X_2$ -0.1650828 $X_3 - 15.63226X_4 + \varepsilon$ 5 Where X₄ is the National Sugar Consumption level in ton.

The determined regression coefficient for moderating variable - Market demand was -15.63226 with a p-value = .042 at 95% confidence level. This result indicates that market demand highly influences performance of sugar industry in Western Kenya significantly. depends the Performance on strategy implementation of growth, cost minimization and product differentiation. The suggested moderating variable - market demand is also highly significant and influences performance of sugar firms in western Kenya; which call for need for further research on this variable.

Conclusions

Sustainability through profit making ventures is vital in the sugar industry which contributes about 25% of the country's Gross Domestic Product and supports well over 250,000 households in the country [11]. Sugar industry in Kenya has undergone through much turbulent times both from internal and remote environment forces for over a long period of time. Much reform have been suggested to have the industry relevant again in the economy; with the agreement extending the deadline for Kenya to implement the much needed reforms in the sector. This study examined the influences of strategy implementation – of growth – as diversification. measured by products differentiation and cost minimization on sugar firms' performance. The obtained results for the study were found to be consistent with some other previous study findings that strategy

implementation of growth, product differentiation and cost minimization have significant relationship with performance of the firm and thus affect sugar firms' profitability in the country significantly.

Conflict of interest

Authors declare there are no conflicts of interest.

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