European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.6, No.12, 2014

An Assessment of the Effect of Vertical Diversification on Organizational Competitiveness: A Case of Sugar Firms in Kenya

Mr. Wilfred N. Marangu[1*] ,M/s. Caroline Nkatha N'gondu[2] ,Robert K. W Egessa[3]
1. PhD candidate, School of business and economics Mount Kenya University
2. PhD candidate, School of Business and Economics, Mount Kenya University
3. Lecturer, School of Business and Economics, Masinde Muliro University of science and Technology
Email: *wmarangu08@yahoo.com; regessa2002@yahoo.com ;Cnkatha03@gmail.com

Abstract
This study sought to analyze the effect of vertical diversification on organizational competitiveness of sugar firms in Kenya. The main objective was to establish the effect of effect of vertical diversification on organizational competitiveness of sugar firms in Kenya. The study adopted descriptive correlational survey design and this being a census study; all the sugar firms in the Kenya were studied. Using a questionnaire, primary data was collected from the production and marketing managers as key informants of each of the sugar firms. The production and marketing managers of every sugar firm were selected to take part in the study as they are perceived to be knowledgeable on the issues under study and for which they are either responsible for their execution or they personally execute them. The questionnaire was pre-tested on a pilot respondent who are not part of the study respondents but knowledgeable in the study aspects in order to ensure their validity and relevance. Secondary data was extracted from annual reports, publications and documentary analysis was also used to gather background information by reviewing literatures relevant to the study. Reviews of the measures used to measure the study variables were also used to construct the questionnaire to ensure face and construct validity. The data collected was analyzed using descriptive and inferential statistics. Cronbach's alpha coefficient was used to measure the reliability of the scale, which was used to assess the interval consistency among the research instrument items. In order to test the hypothesis, the aggregate mean score of firm Competitiveness measures were regressed against the mean score of measures of Vertical Diversification. the regression results reveal that vertical diversification had overall significant positive relationship with the competitiveness of sugar firms ($\beta = 0.464$, p-value = 0.004). The study therefore rejected the null hypothesis since $\beta \neq 0$ and p-value $\leq \alpha$ and concludes that Vertical diversification significantly affected competitiveness of sugar firms in Kenya. The regression results also shows that 46.4 percent of the sugar firm competitiveness can be explained by vertical diversification (R square = 0.464).

1. Acknowledgement
I am thankful to God who has given me courage else this research would not have been possible for me to produce within such short span of time. I am grateful to my Parents, who have given me the opportunity and inspiration to pursue higher education. I am also thankful to my lecturers especially my supervisor, Mr. Kiongera F. Njehu, Dr. Ndiku Judah and Dr. Egessa Robert for imparting me with adequate knowledge and skills so as to explore the topic in a great depth and expertise. I am also thankful to the Information and Library Services from Masinde Muliro University of Science and Technology for the support they have given me. The contribution of the classmates especially Rebecca, Ogoti, Dorice and Wanyama is also highly appreciated. Once more thank you all for you support and help.
Keywords: Vertical Diversification, Organizational Competitiveness, Sugar Firms in Kenya

1.1 Introduction

Sugar firms in Kenya have resulted in diversifying their operations in an effort to build a competitive edge over their competitors. Diversifying means developing a wide range of products, interests or skills in order to be more successful or reduce risks. It involves buying of different investments alternatives to spread the risk of investments (Nickels, 2002). It is a strategy used by many firms not to become too dependent on only one product line, but get involved with new products aimed at penetrating new markets (Nickels, 2002). Diversification merits strong consideration whenever a single business company is faced with diminishing market opportunities and stagnation of sales in principle business (Thompson et al, 2005). According to Thompson et al (2010), diversification is due if a firm expands into industries whose technologies and products compliments its present business. When a firm is diversifying into closely related business, it opens new avenues for reducing costs which can be a major driver to strategic diversification. Concentric or related diversification is seen where the firms have diversified into related businesses like the generation of power and water project which in turn help in cutting down the production costs. It is on this view that this study on the effect of concentric diversification on competitiveness of sugar firms is aimed at accessing how concentric diversification strategy has influenced the sugar firms' competitiveness in Kenya.
Competitiveness on the other hand, is where a firm is able to create more economic value than other competing

firms (Barney, 2010). Economic value is the difference between perceived benefits gained by a customer that purchases a firms product or service and the full economic cost of these product and services (Barney, 2007). Competitiveness in Sugar firms was measured by their ability to turn input into output in the most efficient and economic way. According to Pearce & Robinson (2010), a scheme developed by Michael Porter, for a firm that seeks to build competitive advantage, it should strive for overall low-cost leadership in the industry, the firm should be able to use its low cost advantage to charge lower prices and yet enjoy higher profit margins. This enables the firm to be able to defend it in price wars and attack its competitors to gain market share and growth in sales which shows that the firm is competitive (Pearce and Robinson, 2010). In this study, competitiveness of sugar firm was used to refer to being able to produce quality sugar at lowest cost possible hence being able to charge lower price of the commodity and yet enjoy higher profit margins than the rivals. Competitiveness in this study was characterized by market share, growth rate and production expansion.

2. Literature Review

Diversifying is developing a wide range of products, interests or skills in order to be more successful or reduce risks (Nickels, 2002). However some scholars like Adner and Zemsky (2006), argues that firms diversify when they have valuable and difficult-to-imitate resources that are valuable across industries, or are complementary to resources in other industries, and where these gains cannot be realized by contracting among independent firms. Firms also diversify when they have effective internal resource-allocation mechanisms. Diversification merits strong consideration whenever a single business company is faced with diminishing market opportunities and stagnation of sales in principle business as proposed by (Thompson et al, 2005). Diversification is due if a firm expands into industries whose technologies and products complement its present business. When diversifying into closely related business, it opens new avenues for reducing costs then this can be a major driver to strategic diversification (Arthur, 2004).

When a firm has a powerful and well known brand name that can be transferred to the product of the other business, then this may drive a firm to diversify. Thompson et al, (2005) are of the view that a firm leverages its existing competencies and capabilities by expanding into businesses where these same resource strengths are valuable competitive assets. Diversification strategies involve buying different investments alternatives to spread the risk of investment as argued by (Nickels, 2002). Diversification strategies help the firm not to become too dependent on only one product line but the firm should get involved with new products and aim at new markets (Kotler, 1991), he also observes diversification as a strategy for a company's growth and states that by starting up or acquiring business outside the company's current products and markets, diversification will aim at the development of new products with a view to capturing new markets. This study has covered various forms of diversification strategies that the sugar firms in Kenya use in their efforts to build a competitive edge over their rivals. These diversification strategies include concentric or related, vertical and horizontal diversification.

2.1 Vertical Diversification

Vertical diversification is a grand strategy based on the acquisition of firms that supply the acquiring firm with inputs or new customers for its outputs (Pearce and Robinson, 2010). Vertical diversification occurs when a firm goes back to the previous stage of its productivity cycle or moves forward to subsequent stage of the same cycle, production of raw materials or even distribution of the final product (Gregory et al, 2005). Nickels (2002) argue that diversification is as one of the time-honoured tenets of sound investing 'don't put all your eggs in one basket' and when a firm diversifies closer to the sources of raw materials in the stages of production, it is following a backward vertical integration strategy. According to Barney (2007), backward integration allows the diversifying firm to exercise more control over the quality of the supplies being purchased. Backward integration also may be undertaken to provide a more dependable source of the needed raw materials. Forward integration allows a manufacturing company to assure itself of an outlet for its products and it also allows a firm to have more control over how its products are sold and serviced (Barney, 2007). Furthermore, a company may be better able to differentiate its products from those of its competitors by forward integration. By opening its own retail outlets, a firm is often better able to control and train the personnel selling and servicing its equipment (Barney, 2007). According to Pearce and Robinson (2010), some firms employ vertical integration strategies to eliminate the "profits of the middleman." Firms are sometimes able to efficiently execute the tasks being performed by the middleman and the middlemen profits helps the firm in lowering the production costs making the firm to be competitive in terms of low cost leadership (Pearce and Robinson, 2010).

2.2 Firms' Competitiveness

A firm is said to be competitive over rivals when it is able to create more economic value than other competing firms (Barney, 2010). Economic value is the difference between perceived benefits gained by a customer that purchases a firms product or service and the full economic cost of these product and services. Berry (1995) argues that competitiveness grows fundamentally out of the value that a firm is able to create for its buyers, do more business with the existing ones, and reduce the loss of customers. Once more and more customers perceive benefits they gain by purchasing a sugar firms product, then they tend to buy more of the product which leads to

gaining more market share which is an indicator of competitiveness (Barney2010). According to Thompson et al (2006), firms with high relative market shares normally have greater competitive strength than those with lower shares. Market share can be defined as the percentage of a market accounted for by a specific entity and it is an advantageous way of measuring business competitiveness since it is less dependent upon macro environmental variables such as the state of the economy or changes in tax policy (Gregory, 2005*)*. Market share is a key indicator of firm competitiveness in that it shows how well a firm is doing against its competitors. Sharma and Kesner (1996), argues that diversifying entrants enter at a bigger scale and are more likely to survive and grow than undiversified entrants; consequently diversifying entrants pose a bigger threat, in increasing rivalry and challenging incumbents' market share, than undiversified entrants. This means that a more diversified firm is more competitive and can survive the stiff competition in the industry.

Additionally, according to Robert (2004) growth rate is to extend firms potentials in the face of competition. As the firm extends its potentials more than its rivals, the rate of growth is said to be on the increase and this shows that the firm is more competitive. The firm's ability to increase in resources, human, physical and even financial, then the growth rate of the firm is said to have increased and it's a sign of being competitive. Finally, production is the conversion of inputs into outputs using physical resources, so as to provide the desired utilities of form, place, possession or state or a combination thereof to the customers while meeting the other organizational objectives of effectiveness, efficiency, adaptability and competitiveness (Chary, 2004). Production expansion therefore refers to increase in the capacity of a firm to be able to convert input into output using it physical resources. Once a firm is able to do so better than its rivals, then the firm is said to be more competitive than its competitors.

According to Pearce and Robinson (2010), for a firm that seek to build competitive advantage, it has to use one of the three generic strategies. It should strive for overall low-cost leadership in the industry, the firm should be able to use its low cost advantage to charge lower prices or enjoy higher profit margins. This enables the firm to be able to defend it in price wars and attack its competitors to gain market share and growth in sales which shows that the firm is competitive (Pearce and Robinson, 2010). Striving to create and market unique product for various customer groups through differentiation is the second generic strategy as stated by Porter et al (1993). This is where the products are designed to appeal to customers with a special sensitivity for a particular product attribute to build customer loyalty. Such loyalties translates into a firm's ability to charge a premium price for its products and the product attributes also helps in the development of marketing channels through which it is delivered (Barney 2010). Finally, the firm should strive to have special appeal to one or more groups of customer or industrial buyers, focusing on their cost or differentiation concerns which attempts to attend to the needs of a particular market segment (Ma, Hao 2007). The study proposes that any useful strategic undertaking adopted by the sugar firm, such as diversification strategies, should enable the firm to effectively build its competitiveness.

3.0 Methodology

3.1 Research Design

A research design is the arrangement of conditions for collection, measurement and analysis of data in that aims to combine relevance to the research purpose Kothari (2010). This study used descriptive correlational survey design as it sought to describe and establish the relationships among the study variables namely concentric diversification strategy and competitiveness. Descriptive correlational survey design allows the researcher to describe and evaluate the relationship between the study variables which are associated with the problem. Correlational survey design also allows a researcher to measure the research variables by asking questions to the respondents and then examining their relationship (O'Connor, 2011).

This being a census study, all the sugar firms in Kenya which were registered and licensed by the Kenya Sugar Board as at February 2013, and still in operation at the time of data collection in the year 2013 were studied. A list of the sugar firms which were registered and licensed by the Kenya Sugar Board indicated that there are nine sugar manufacturing firms in Kenya. Sugar industry was deliberately chosen in this study due to the fact that the sector has faced a lot of challenges in the recent past to the extent that some sugar firm closed hence the need for the study. Both descriptive and inferential statistics were used in the analysis then presented using frequency and contingency tables. Descriptive statistics were used to deduce any patterns, averages and dispersions in the variables. They include measure of locations (mean) and measure of dispersions (standard error mean). These measures were used to describe the characteristics of the collected data. Inferential statistics were used to determine the relationship between the study variables and these inferential statistics included correlation and regression analysis. The primary association among the study variables were assessed using correlation which were tested at 95 percent confidence level (level of significance, $\alpha = 0.05$) and 99 percent confidence level and the hypothesis tested at 95 percent confidence level (level of significance, $\alpha = 0.05$).

4. Findings

The results presentation in this section has been done in accordance with the study variables in the conceptual

framework (Figure 1.1). These variables were diversification strategies, sugar firm competitiveness and the organizational factors. Karl Pearson's coefficient of correlation has been used to highlight the interrelations within the study variables.

4.1 Vertical Diversification

In order to be able to evaluate if the usage of vertical diversification is practically seen to be in use, respondents were required to react to the statement that their sugar firm has acquired several other firms which previously supplied the firm with raw materials and their responses recorded in table 4.1 below. From the study results in the table below, 38.9 percent of the responses agreed and 5.6 percent strongly agreed that their sugar firms had acquired other businesses which used to supply them with raw materials. 55.6 percent disagreed that their sugar firm had not acquired any other firm or business which supplies it with raw materials.

Table 4.1: Firms previously supplied raw materials and later acquired by the Sugar Firms

	Frequency	Percent	Cumulative Percent
Disagree	10	55.6	55.6
Agree	7	38.9	94.4
Strongly agree	1	5.6	100.0
Total	18	100.0	

Source; Research data

In order to verify that vertical diversification is actually used in their firms, respondents were required to react to the statement that their firm control the quality of raw materials supplied and purchased by their firms and their responses recorded in Table 4.2 as shown below. The study results shows that sugar firms control over the raw materials supplied and bought by their firms. Of the valid responses, 66.7 percent of them strongly agreed that their firms had control over the supply and purchase of raw materials and 33.3 percent agreed with the statement.

Table 4.2: Firms control over raw materials supplied and purchased

	Frequency	Percent	Cumulative Percent
Agree	6	33.3	33.3
Strongly agree	12	66.7	100.0
Total	18	100.0	

Source; Research data

To be able to ascertain whether the sugar firms had control over the market of their products, respondents were required to react to the statement that the sugar firms sometimes are able to efficiently execute the task being performed by middlemen in marketing their products and their responses recorded in the Table 4.3 below. Of the valid responses, 44.4 percent of the responses agreed while 16.7 percent strongly agreed that their sugar firms controlled the market of their products by efficiently executing the task being performed by middlemen in marketing their products. 38.9 percent of the firms are not able to control the market of their products possibly because may be of their age. This big number of respondents who disagreed can possibly be explained by the fact that their firms have been in existence for less than five years of age hence not being able to have captured and control the market of their products.

Table 4.3: Firm performs middlemen tasks in marketing of firm products

	Frequency	Percent	Cumulative Percent
Disagree	7	38.9	38.9
Agree	8	44.4	83.3
Strongly agree	3	16.7	100.0
Total	18	100.0	

Source; Research data

4.2 Competitiveness of sugar firms

Competitiveness was the dependent variable in this study and was characterized by market share, growth rate and production expansion. The analysis in this section sought to identify any trends in the various dimensions of this dependent variable.

4.2.1Market Share

To determine whether the sugar firms had been creating more economic value in order to attract more customers and then enlarge their market share, the respondents were required to react to the statement that their sugar firms create more economic value than their rivals and their responses recorded in Table 4.4 below. The results of the sugar firms competitiveness in terms of economic value creation are highlighted in the table bellow which indicates that 33.3 percent of the responses disagreed while 50.0 percent agreed and 16.7 percent strongly agreed that their sugar firms creates economic value for their customers.

Table 4.4 Firm creates more economic value than rivals

	Frequency	Percent	Cumulative Percent
Disagree	6	33.3	33.3
Agree	9	50.0	83.3
Strongly agree	3	16.7	100.0
Total	18	100.0	

Source; Research data

In order to evaluate the sugar firm's customer base, respondents were required to respond to the statement that their firms enjoy a larger customer base than their competitors and their responses were recorded in Table 4.5 below. From the responses in Table, over 60 (61.1) percent of the respondents disagreed with the statement while 33.3 percent agreed and 5.6 percent strongly agreed that they enjoy larger customer base than their competitors.

Table 4.5: Firm has more customer base than rivals

	Frequency	Percent	Cumulative Percent
Disagree	11	61.1	61.1
Agree	6	33.3	94.4
Strongly agree	1	5.6	100.0
Total	18	100.0	

Source; Research data

To determine whether their sugar firms were competitive enough, respondents were required to react to the statement that their firms had a cutting edge over their rivals. The responses were that 33.3 percent (Table 4.6) of them disagreed that their firms had a cutting edge over their rivals while 50 percent agreed and 16.7 strongly agreed. This shows that sugar firms in this area of study are competitive as it was presumed.

Table 4.6: Firm has a cutting edge over the rivals

	Frequency	Percent	Cumulative Percent
Disagree	6	33.3	33.3
Agree	9	50.0	83.3
Strongly agree	3	16.7	100.0
Total	18	100.0	

Source; Research data

Table 4.7: Which sugar firm in Kenya is most competitive?

	Frequency	Percent	Cumulative Percent
Mumias	15	83.3	83.3
Nzoia	1	5.6	88.9
Sony	2	11.1	100.0
Total	18	100.0	

Source; Research data

When the respondents were asked to name the most competitive sugar firm in their own opinion, 83.3 percent of the respondents named Mumias sugar as the most competitive while 11.1 percent named Sony sugar as the most Competitive and only 5.6 percent named Nzoia as shown in Table 4.7 above.

To determine the market share of the sugar firms, respondents were required to react to the statement that their sugar firm had more market share than rivals and their responses recorded Table 4.8 below.

Table 4.8: The firm has more market share than rivals

	Frequency	Percent	Cumulative Percent
Disagree	7	38.9	38.9
Agree	8	44.4	83.3
Strongly agree	3	16.7	100.0
Total	18	100.0	

Source; Research data

Table 4.8 above highlights that 38.9 percent of the respondents disagreed with the statement that their firms had more market share over rivals. Over 40 percent (44.4 percent) agreed and 16.7 percent strongly agreed that they had more market share and had large customer base than their rivals. This implies that majority of the Sugar firms are competitive.

4.2.3 Growth rate

To determine whether their sugar firm growth rate has increased as a result of diversifying the firms operations, respondents were required to react to the statement that the firm has rapidly grown through acquisition of new business and result recorded in Table 4.9 below. Of the valid respondents, 61.1 percent disagreed with the statement that their firms' growth rate was as a result of diversification while 38.9 percent agreed with the

statement their sugar firm's growth rate had resulted from diversification.

Table 4.9 Growth rate of sugar firms increased as a result of acquisition of new businesses

	Frequency	Percent	Cumulative Percent
Disagree	11	61.1	61.1
Agree	7	38.9	100.0
Total	18	100.0	

Source; Research data

Table 4.10: Firm posts higher sales turnover than other similar firms

	Frequency	Percent	Cumulative Percent
Disagree	9	50.0	50.0
Agree	5	27.8	77.8
Strongly agree	4	22.2	100.0
Total	18	100.0	

Source; Research data

Respondents were required to state whether their sugar firms' posts higher sales turnover than similar firms and their responses recorded in Table 4.10 above. On the valid responses, 50 percent of the respondents disagreed, 27.8 percent agreed and 22.2 percent strongly agreed that their sugar firm posts higher sales turnover than other similar firms. The respondents were required to state whether their firm's businesses had increased for the last five years. As shown in table 4.11 below, 61.1 percent disagreed while 38.9 percent agreed that their sugar firms had increased businesses in the last five years. To establish whether the customer base had increased in the last five years, respondents were required to react to the statement that their firm's customer base had increased in the last five years. 38.9 percent of the respondents (Table 4.12) suggested that there has been no increase in their firm's customer base 55.6 percent agreed and 5.6 percent strongly agreeing.

Table4.11: Firm has grown rapidly through acquisition of new businesses

	Frequency	Percent	Cumulative Percent
Disagree	11	61.1	61.1
Agree	7	38.9	100.0
Total	18	100.0	

Source; Research data, 2013

Table 4.12: Customer base has increased in the last five years

	Frequency	Percent	Cumulative Percent
Disagree	7	38.9	38.9
Agree	10	55.6	94.4
Strongly agree	1	5.6	100.0
Total	18	100.0	

Source; Research data

4.2.4 Production expansion of sugar firms

To assess the levels of production in their sugar firms, respondents were required to react to the statement that the production capacity had increased with a reduction in production cost as a result of diversifying their operations, and the results recorded in Table 4.13 below. The table shows that over 61.1 percent disagreed, 33.3 percent agreeing and 5.6 percent of the respondents strongly agreeing that of their sugar firms had their production increase for the last five years.

Table 4.13: Production capacity has increased for the last five years

	Frequency	Percent	Cumulative Percent
Disagree	11	61.1	61.1
Agree	6	33.3	94.4
Strongly agree	1	5.6	100.0
Total	18	100.0	

Source; Research data

In order to assess the effect of the diversification on the production costs, respondents were required to respond to the statement that their firm's production cost had been reduced as a result of diversification and their responses recorded in the table 4.14 below. From study results, it is evident that over 38.9 percent of the respondents disagreed, 50 percent agreed and 11.1 percent strongly agreeing that their sugar firms had experienced a reduction in production costs as a result of diversification.

Table4.14: Reduction in production costs due to diversification

	Frequency	Percent	Cumulative Percent
Disagree	7	38.9	38.9
Agree	9	50.0	88.9
Strongly agree	2	11.1	100.0
Total	18	100.0	

Source; Research data

In order to establish the impact of the new businesses on the sugar firms, respondents were required to react to the statement that the new businesses had led to great expansions, efficiency and effectiveness in their sugar firms. The results in Table 4.15 reveals that 61.1 percent agreed that their firms had benefited from the new business while only 38.9 disagreed with the statement.

Table 4.15: New businesses have led to great expansion, efficiency and effectiveness

	Frequency	Percent	Cumulative Percent
Disagree	7	38.9	38.9
Agree	11	61.1	100.0
Total	18	100.0	

Source; Research data

When the respondent were asked to comment on the production trend of their sugar firm, 50 percent said that their firms had experienced an increase in production for the last firm years while the other 50 percent of the firms experienced stagnation in the production capacity. This may be attributed to different weather patterns and the subdivisions of the farm land as shown in Table 4.16 below.

Table 4.16: Production trend of the sugar firms

	Frequency	Percent	Cumulative Percent
Disagree	9	50	50
Agree	9	50	100.0
Total	18	100.0	

Source: Research data

4.3 Inferential data presentation

The results presentation in this section has been done in accordance with the study variables in the conceptual framework. These variables were vertical diversification and organizational competitiveness. Karl Pearson's coefficient of correlation has been used to highlight the interrelations within the study variables.

4.3.1 Test of the hypotheses

The study was based on the premise that diversification strategies (independent variable) influence sugar firms' competitiveness (dependent variable) but this influence is moderated by a number of organizational factors. As a result of this, three null hypotheses were constructed to guide the study as highlighted in the conceptual framework. In order to establish the statistical significance of the respective hypothesis, simple regression analysis (β) which is the same as the Karl Pearson correlation coefficient (r) (Sekaran, 2003) and the hypothesis was tested at 95 percent confidence level ($\alpha = 0.05$).

4.3.2 Effect of vertical diversification on competitiveness of sugar firms

The study was based on the premise that vertical diversification influence competitiveness of sugar firms. In order to assess the influence of vertical diversification on competitiveness, the study had set the following null hypothesis;

$H_{01:}$ Vertical diversification does not have significance effect on competitiveness of sugar firms.

The researcher used regression coefficient (beta β) to test the hypothesis with the test criteria set that the study should reject the null hypothesis H_{01} if $\beta \neq 0$ and p-value $\leq \alpha$, otherwise fail to reject H_0 if p-value $> \alpha$. F tests were conducted to determine the indication and overall significance of the relationships respectively. All the questions in the questionnaire answered by the respondents had scores which scored marks according to the response of the respondents. The marks were then added up and finally divided by number of respondents answering the questionnaire to enable the researcher attain the mean score of every question. The same procedure was repeated for other questions measuring the vertical diversification and competitiveness. In order to test the hypothesis, the aggregate mean score of firm Competitiveness (C) measures were regressed against the mean score of measures of Vertical Diversification (VD) and results are shown in the table 4.17 below.

Table 4.17 Regresion results of vertical diversification against competitiveness

Goodness Fit Analysis

Sample size	R	R squared	Adjusted R^2	Estimate std error
18	0.464	0.264	0.104	0.736

Dependent Variable: Competitiveness

Overall significance, ANOVA (F-test)

	Sum of Squares	Degree of Freedom	Mean Square	F	Sign. p-value
Regression	0.248	1	0.408	1.0716	0.004
Residual	1.086	16	0.342		
Total	1.334	17			

Predictors: (Constant), Vertical diversification.

Individual significance (T-test)

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta (β)	T	Sign. p-value
(Constant)	2.681	1.01		1.098	1.688
Vertical diversification	0.542	0.451	0.464	0.08	0.042

- Lever of significance, α = 0.05

Source: Research data

From the Table 4.17, the regression results reveal that vertical diversification had overall significant positive relationship with the competitiveness of sugar firms (β = 0.464, p-value = 0.004). Hence the study therefore rejects the null hypothesis since β ≠ 0 and p-value ≤ α and concludes that Vertical diversification significantly affected competitiveness of sugar firms in Kenya. The regression results also shows that 46.4 percent of the sugar firm competitiveness can be explained by vertical diversification (R square = 0.464).

Arising from the research results in Table 4.17, a simple regression equation that may be used to estimate sugar firm competitiveness in Kenya given its existing diversification strategies is stated as follows; C =2.681+ 0.464VD+ ε

Where:

2.681 is the y-intercept constant

C is the Competitiveness

0.464 is the beta or the slope coefficient

VD is Vertical Diversification

ε is the error term- random variation due to other unmeasured factors.

4.4 Conclusion

The study was based on the premise that vertical diversification influence sugar firms' competitiveness. The study results supported this premise in that vertical diversification was found to have statistically significant effect on firm competitiveness with 46.4 percent of the sugar firm competitiveness can be explained by vertical diversification (R square = 0.464). Based on the above findings, sugar firms in Kenya should make efforts to use vertical diversification strategies in their diversification process in that vertical diversification has been found to have a positive and significant effect on the competitiveness of sugar firms in Kenya.

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