

**EFFECT OF BUDGETARY CONTROLS ON FINANCIAL PERFORMANCE OF
AGRO-VETERINARY MEDICINE MANUFACTURING COMPANIES IN KENYA**

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DECLARATION

The research project is my original work and has not been present for a degree in any other university or learning institute.

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

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DEDICATION

This research project is dedicated to my family for their love, patience, help, support and encouragement and their prayers which saw me through in my course.

Special appreciation goes to my family and employer for their perseverance, patience and unwavering support throughout my studies.

ACKNOWLEDGEMENT

I wish to thank the Almighty God for the strength of purpose he accorded me to not only start but also finish this project.

I sincerely acknowledge the invaluable and tireless counsel, commitment, encouragement and commendable support of my supervisor, Dr Kennedy Okiro. He accorded me scholarly guidance, instructive feedback and constructive criticism.

I am also greatly thankful to my family members for their continuous encouragement. I also owe it all to my respondents and work colleagues.

ABSTRACT

The main objective of this study was to establish the effect of budgetary controls of financial performance of agro-veterinary medicine manufacturing companies in Kenya. The study was founded on two theories namely: Cognitive Evaluation Theory and agency theory. A descriptive research design was adopted and the unit of observation comprised of all the 28 companies registered in Kenya for the manufacture of agro-chemicals in Kenya. Census study approach was used and involved all the 28 companies. Secondary data were gathered through a document review guide, and ran through STATA version 14. Descriptive and inferential analysis were carried out. The correlation analysis results indicated that there was a strong positive and significant association between firm size and ROE, also the results indicated that there was strong positive and significant association between PVR and ROE and lastly, there was a negative and significant association between labor productivity and ROE. Regression analysis results showed that budgetary control on financial performance explained up to 69.68% of variations in financial performance of agro-veterinary medicine manufacturing companies in Kenya. This was based on the resultant determinant coefficient (R^2) value equivalent to 0.6968. The results further indicated that during the study period 2013 – 2017 holding other factors constant at zero, a unit increase in PVR led to 1.206 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the relationship was positive and statistically significant. Also a unit increase in firm size led to 3.527 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the relationship was positive and statistically significant. Lastly, a unit increase in labor productivity led to 0.513 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the relationship was positive and statistically significant. It was concluded that there was a strong positive and significant correlation between firm size and ROE, there was strong positive and significant association between PVR and ROE and lastly, there was a negative and significant relationship between labor productivity and ROE. It was recommended that budgetary controls are important in influencing financial performance of agro veterinary Medicine Companies in Kenya.

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LIST OF ACRONYMNS

AAK	Agrochemicals Association of Kenya
AASR	Africa Agriculture Status Report
FAO	Food Agricultural Organization
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
KPI	Key performance index
KVB	Kenya Veterinary Board
PCB	Pest Control Board
PPB	Pharmacy and Poisons Board

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

With time, for an organization to achieve its success it has to become imperative by planning its financial activities through the use of budgets. The future expectation of the organization requires the detailed financial plan which quantifies it using the available resources. The success of the organization is not guaranteed by its budget but, the budget only helps in avoidance of failure in the future. Many forms and functions are taken by the budget. It gives a foundation for the sales target, cash investment, borrowing, inventory production, staffing plans and many more. The expectation of the formal quantitative expression is granted by the financial plan. The ineffective and inefficiency of the organization plans and coordination procedures is tamed as inessential. The financial plans are effective administration weapon that facilitates the organization administration to attain its objectives. In the business key areas such as production and staffing becomes very impossible if done without the budget (Abernethy & Brownell, 2014).

The direction and planning of the organization course of actions are facilitated by the assistance of the financial plans. The budgeting process includes doing plans with clear goals, which later converted into tangible targets and quantifies. The arrangements assist the company to get ahead the situation of the business and get ready for the unpredicted risks problems. Monitoring the performance against predetermined targets is done through the assistance of the financial plan. This is more important since its assist in the determination if different departments are operating as required.

Anthony (1965), remedial actions can be put into place through detection of the available gaps early enough to ensure the targets are achieved. Suppose the financial plans are achieved at the right moment, the employees get motivated as well the management get enough space to attain it's the organizational business objectives. Members of the team may have negative results and get demotivated if the set targets are very high or very low.

The means of interaction between the departments and its employees can be improved through budgeting (financial planning). It helps in communication throughout various departments.it as well assist the workers to get to know the functions played by various departments in a business firm (Adams, C., Neely & Bourne, 2013).

1.1.1 Budgetary Controls

Budget control is referred to as the procedure of finding much actual feedback with the financial plan figures against the actual performance for summing variance. It includes the use of finance and financial reports to the entire duration to evaluate, coordinate and control day to day activities based on specified objectives of an organization financial plans. Budgetary controls assist the senior organization administrators to ensure enough spending target. This control is important as excess spending may have the unfavorable impact on the company profits. Where the actual book-keeping figures are differentiated with the budget figures in variance analysis as a budgetary control technique. By making use of the technique, (Brownell & Hirst, 2016).

Currently, we are workers labor based on their departments. Performance is therefore calculated according to the performance against the targeted numbers to their respective cost, profit and investments centers. Taking one to adjust funds from one project to another

project as a budgetary control technique is the one used by a top administrator of the department. Fund flow techniques and the adjustment are also put into use. Misuse of cash can be reduced by better forecasting of available funds that are assigned between one projects to the other.

Budgetary controls have a restriction that requires the awareness of the management. Since an effective budgetary arrangement confirmed the operations of the labors, there may not be wholehearted co-operation from inefficient employees for budgetary programs.

Financial plans are based on the targets and therefore its effectiveness relies on the accuracy in which the estimates are designed for the future. The circumstances and conditions under which the business operations aren't still therefore for the budget to be effective, it must fit all the requirements. Attainment of flexibility in the budget-making is very tough. The proper administration and supervision made in budgetary control will not be effective without proper arrangement. The weapon of management is budgeting. As a weapon of management budgeting is normally taken as a substitute for management. This may result in the poor performance of the business. Suppose the financial plans are managed in a proper manner, they force the administration plans, grant defined requirements for justifying the subsequent performance and encourage the announcement and coordination among the various segments of the business (Cook, 2017).

1.1.1 Financial performance

Financial execution is the strategy for working the financial action. Somewhat, financial execution suggests the measurement to which financial goals must be concluded. It is the route toward estimating the delayed consequences of an organization's methodologies and

assignments in financial terms. Financial execution is measures the when all is said in done financial execution of the firm over a given term of time and can moreover be used to isolate comparable firms over a comparable industry or to consider enterprises or sections in mixture. The examination of financial proclamations is a technique of assessing the connection between section parts of financial articulations to get a prevalent comprehension of the organization's position and execution. Key Performance Pointers (KPIs) are your instruments for estimating and following advancement in essential regions of association execution. Your KPIs give you a general picture of the general soundness of your business. Obtaining experiences overseen by your KPIs empowers you to be proactive in rolling out vital improvements in failing to meet expectations zones, averting possibly certified setbacks.

The KPI assessment by then empowers you to check the practicality of your undertakings. This strategy ensures the whole deal maintainability of your association's working model, and helps increment your businesses an impetus as a speculation. The essential need is to perceive and fathom the general impact that the distinctive financial substances addressed by your KPI numbers have on your business. By then, use the bits of knowledge you get from these important financial organization execution markers to perceive and realize changes that correct issues with methodologies, systems, staff, or things that are affecting no less than one of your KPI regards. Fundamental KPIs incorporate salary, cost, net advantage, and net advantage (Covaleski, Evans and Shields, 2013).

1.1.3 Agro-Veterinary Medicine Manufacturing Companies in Kenya

Agro-veterinary medicine manufacturing companies refer to entities whose core business is manufacturing of plant and animal medicines and further undertake research on how to sustain plant and animal health through advisory services or through advisory of the best genetic combination (Agrochemicals Association of Kenya 2012).

1.2 Research Problem

This research aims at establishing what impact budgetary controls has towards the financial performance of the agro-veterinary medicine manufacturing companies in Kenya. As much as agriculture forms large part of the Kenyan economy, there is need to analyze what impact budgetary controls has on the industries that support agriculture and if the existence of budgetary controls has added any value to those companies. AASR (2017) stated that part of the reasons most agricultural businesses and value add chains to agricultural industry in Africa fail to succeed in achieving the objective of consistent growth is due to lack sound policies in carrying our financial planning and keeping tight controls and monitoring of the business performance (Africa Agriculture Status Report 2017). Therefore, one of the conclusions drawn from that report is that despite funding being a challenge for most agricultural businesses in Africa, planning, utilization and control of income and expenditure remains to be one of the key success factors for the agricultural businesses and any value add chain to agricultural business.

Studies that have carried out in Kenya focused on NGO (Kipkemboi, 2013) and manufacturing sector (Onduso, 2013). Therefore to the best of the researchers' knowledge there exist limited studies on budgetary controls in Kenya, it is against this background this

study seeks to answer the question what is the effect of budgetary controls on financial performance of manufacturing firms in Kenya with special focus on Agro-Veterinary Medicine Manufacturing Companies in Kenya.

1.3 Research Objective

1.3.1 General Objective

This study aimed at establishing the effect of budgetary controls of financial performance of agro-veterinary medicine manufacturing companies in Kenya.

1.3.2 Specific Objectives

- i. To assess the relationship between budgetary control and financial performance of agro-veterinary medicine manufacturing companies in Kenya.
- ii. To establish the relationship between firm size and financial performance of agro-veterinary medicine manufacturing companies in Kenya.
- iii. To examine the relationship between labor productivity and financial performance of agro-veterinary medicine manufacturing companies in Kenya.

1.4 Value of the Study

The outcome of the study for this project as aimed at shaping the practices by agro-veterinary medicine manufacturing companies whereby on establishing the impact of budgetary controls on financial performance, businesses would be expected to make to adopt implementation of budgets and the various budgetary control methods for the purpose of maximizing returns on investments to be business by shareholders. In addition, this study is aimed at further contributing to the previous studies both local and international by the various scholars in regards to establishing the extent to which

budgetary controls impact financial performance of businesses and more specific agro-veterinary medicine manufacturing companies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature relevant to this study is extensively examined in this chapter. It adopts the conceptual framework and incorporates works of previous scholars on the subject.

2.2 Theoretical Review

2.2.1 Cognitive Evaluation Theory

The theory of cognitive evolution affirmed that, when checking an assignment, we assess it based on how possible it attain competency in charge. If people think they will be capable to accomplish the assignment, they will be basically enthused to accomplish the assignment without looking no further future external enthusiasm, whereby the people have stronger internal locus control they will feel will believe the surrounding might possess a superior power than what they can do. Financial budgeting develops the logic of accountability above the management who controls the department. The individual or officer in charge feeling to be in control of the feedback of the outcomes of the department due to the accomplishment of budget targets is also the source of enthusiasm hence this improves the organizational performance. The source of enthusiasm is the state of feeling to be in charge of the feedback of the outcomes department in line for budget target accomplishment hence this brings about the performance increase. Persons might perceive the external reward as the degree of attaining control over them or might visualize the rewards as information such as where they protect competence and self-determination. If the persons perceive the rewards as mostly for control they get enthusiast through having the rewards but not by

While individuals perceive the compensation as frequently for control they are likely to be inspired by attainment of the prize but not by improving the demanded traits (Robinson, 2016). The things that come from the environment and which are being governed by persons are what is tamed as motivators. Basically, an individual who is motivated performs better for their own satisfaction. Suppose these persons do their job for the sake of payment of working surroundings, they tend to run out of motivation. In the study, budget achievement is considered to be a powerful motivator since it creates persons intellectual gains (Neely, Bourne & Adams, 2013).

2.2.2 Agency Theory

The agency association is the contract under which an individual or persons engage each other to provide some services on the behalf of the others that consists assigning decision-making rule to the same person in charge. The foundation of this theory is the notion that the yield of philosophy and go-betweens deviate. Nevertheless, the philosophy can minimize the deviation from the individual's importance through inaugurating suitable enticements for the representative, plus through experiencing checking expenditures aimed to minimize unscrupulous whereabouts via the representatives. In the business organization, the board of directors and administration are representative performing on behalf of the organization's participants. Thus administrators are required to participate in those shareholders partaking the authority to prize or punish them (Zheng, 2014).

Lawfully, community corporations are directed to provide the general meetings annually to grant mechanism of control through their shareholders as a means of solving their complications. This is according to the idea of the shareholders that, they might be willing to monitor the management as well as the board of directors. The general meetings are held

annually to enhance the decision making by the shareholders hence this minimizes managerial authority. To some extent, it also grants the podium of exchanging the information required for the stakeholders to decide on the stapes to take. The activities that are put upon during the general annual meeting includes discussion on dividend payments, (Yuen, 2014).

2.3 Budgetary Controls

The key to better Administration of bio-resources and their costs are planning and control. Budgetary control is the procedure of creating strategies for an industry projected operation and control operations to assist in carrying out their policies (Anatoli & Katarina, 2017). The goal of budgetary control includes: Assist in creation of strategies of developing companies plan revenues and costs. It as well assists in organizing and collaborating their plans to major steps of management (Blöndal, Hawkesworth & Choi, 2014). Additionally, It also articulates a basis for companies cost control and better revenue to benefit from budgetary control, the company must first put in place measurable objectives, explain the duties of each person and create the operational aims. As per the study, short or a long term of just a year are usually framed in a planned budget period (Fauré & Rouleau, 2011).

2.4 Determinants of Financial Performance in Manufacturing Companies

Enactment the organization is of great importance to shareholders of the business organization and the economy of the country as well. Business partners of the business organization are much interested in the outcome they receive on their businesses and thorough success business will receive an improved and large season outcome to the shareholders. In addition, the productivity of an organization the profits of its labor-force, endure excellence goods for its customers and run a production unit in better and friendly

surroundings. As well, the maximized sales outcomes might be directed to large investments in the future, which will further create more job chances in a given Nation and generate the sources of revenues too (Tri, Wahyu, Philomena & James, 2017).

The factors of financial performance are:

2.4.1 Corporate Governance

As per DeYoung, Lang and Nolle (2007), corporate governance involves an organized authority, performance and procedures by which an organization is aligned and governed. Fundamentally, it includes, putting into concern the desires of the majority of the shareholders within a firm which involves the community, government, customers, suppliers, financiers, management, shareholders and the management. Corporate governance activities are considered to be an enterprise setup and traits that control the corporate practices and behaviors that guide the corporate body on the way to put into place goals, manage risks, develop strategies, monitor and report its performance.

2.4.2 Economic condition

As per Lumpkin and Dess (2012), the financial state of a given Nation is amongst the issues that influence the activities of an organization in many ways. Huge interest of borrowing have a negative impact on the ability of an organization to create the input cost to invest in their business.

2.4.3 Ownership structure

As per Robinson (2017), the ownership structure of an organization have great results on the firm's financial performance. As per Agency theory, having workers share ownership

procedure enhances management commitment to increase the worth to stakeholders over better-quality yield on equity.

2.4.4 Capital structure

As per Ezzamel (2012), capital structure isn't one amongst the appropriate aspects during the evaluation of the industries success. According to him, consideration of a perfectly competitive market, success operations of the organization is only influenced by actual issues. The current research of the study disagrees with his believed opposing that, capital structure is amongst the factors that play a substantial part in manipulating organization success operation. A huge control step will as well maximize the risk of bankruptcy in organizations. Business organization total resources are as well reflected to positively affect the financial success performance of an organization with huge resources worth implicating a bargain quantity of threat.

2.4.5 Risk management

As per Brownell and Hirst (2016), risk management in a business organization is an amongst the issues that affect its successful operation. Risky enterprise activities try not only to bring close the financiers who are willing to endure the level of risk. Correlation among the risks exposures and earnings accumulated have to be supervised to give the financiers the equal earnings that are correspondent to the risks they are willing to endure. Captivating a huge risk is a necessary issue to the financial return even though the test is to correct the risks that oppositely disturb the enterprise earning results and alter the way the main risk is alleviated to safeguard the industry in the greatest manner, expand the success operation steps and initiate the formation of the multinationals worth.

2.4.6 Firm Characteristics and Policies

According to Adams, Neely and Bourne (2013), the financial performance of an organization is achieved by both internal and external issues. The internal issues are strictly meant to a given firm while external issues are distinctively meant for the selected business organization and the microeconomics deterrent. Internal environmental issues happen in a business institution which consists of the size of the corporate unit, knowledge as well as the Association phases of the life circle, the invention of the manufactured goods, organizational structures of individuality as well as the kind of significance of association objectives and domination of processes and the market roles.

External issues on the other side are issues that happened outdoor the set-ups of the business premises. It is an issue that is confirmed to be difficult to foresee and govern. The issues consist of the overall state of the client's nature, the segment of the entire budget as a whole. A given trait of a business organization is connected with an increased success operation of a firm of a company (Brownell & Hirst, 2016). The traits comprise the size of the organization, the growth rate of the organization, the dividend policy, sale, and liquidity. A business organization that enjoys greater growth rate is capable of affording as well as finance on greater resources that in future increases the worth of the cooperate. Bigger organizations are capable of attracting and attaining better staffs and managers who in turn accelerate the operation success of cooperate Companies (Brownell, Hirst & HJttrea, 2017).

2.5 Empirical Studies

2.5.1 Global Studies

In a study by Anatoli and Katarina (2017), on budget use as a measure of managerial performance. The study focused on a large organization that had a various production lines that produced products that were similar across the UK. Each production units were autonomous on each other. As a results, the target respondents were the unit managers since they reported to the group manager for their respective units. The results indicated that there was a positive association between use of budget evaluation of managers and their performance. Fauré and Rouleau (2011) point out that there is scanty indication that any specific application of budgeting determine actual performance even though this is a utmost vague association to express in research. Nevertheless it was indicated that there were substantial, relations and unit profitability. A circumstance had advanced where units that were profitable gave precise budgets which were consequently utilized as a base for estimation; while the units that were less profitable gave positive budgets.

In another study by DeYoung, Lang and Nolle (2007) on China and Caucasian cultures indicated that the relation between effects of MAS and budget participation effect on managerial performance varies. The study results indicated that the association between MAS information and managerial performance of Chinese contribution was positive. Though the study is relevant to the current study, it did not address the focus of the current study. There is need to carry out a similar study with focus on Kenya.

2.5.2 Regional Studies

A qualitative study by Agyekum and Collins (2018), on Budgetary and management control practices (budget being the tool for management control in Guinness Nigeria plc sampled 50 respondents. It was concluded that budgets enable creation and maintenance of competitive advantages by enabling, communication, decision making, planning, forecasting, coordination, evaluation, monitoring and control.

2.5.3 Local Studies on Budgetary Controls and Financial Performance

A study by Onduso (2013), focused on 18 listed manufacturing firms with their operation within Nairobi County indicated that budget and financial performance on manufacturing industries measured in terms of ROA were strongly and positively correlated. In another study by Muleri (2001) on budgeting practices in Non-governmental organization in Kenya. It was established that organizations applied new undertakings as insignificant to reduce financial management. The study indicated the limitations in budgeting process that contribute towards cost reduction effectiveness, The study concluded that, budgeting was appropriately accommodated in assessing and was applied in the communication of procedures and tactics. A study by Ambetsa (2004) on budgeting mechanism performed by commercial airlines operating at Wilson Airport, Nairobi, showed that trials investigated were economical assessment insufficiencies that were not involved in budget preparation and inadequate backing by the management.

2.6 Conceptual Framework

A theoretical outline figure shows the link that exists between predatory and dependent variable. As per this study the dependent variable is financial performance of Agro-veterinary medicine manufacturing companies while the independent variable is the budgetary controls. Return on asset is used as a measure of performance since it accommodates the assets employed to support business activities and the data is easily available in the secondary data sources.

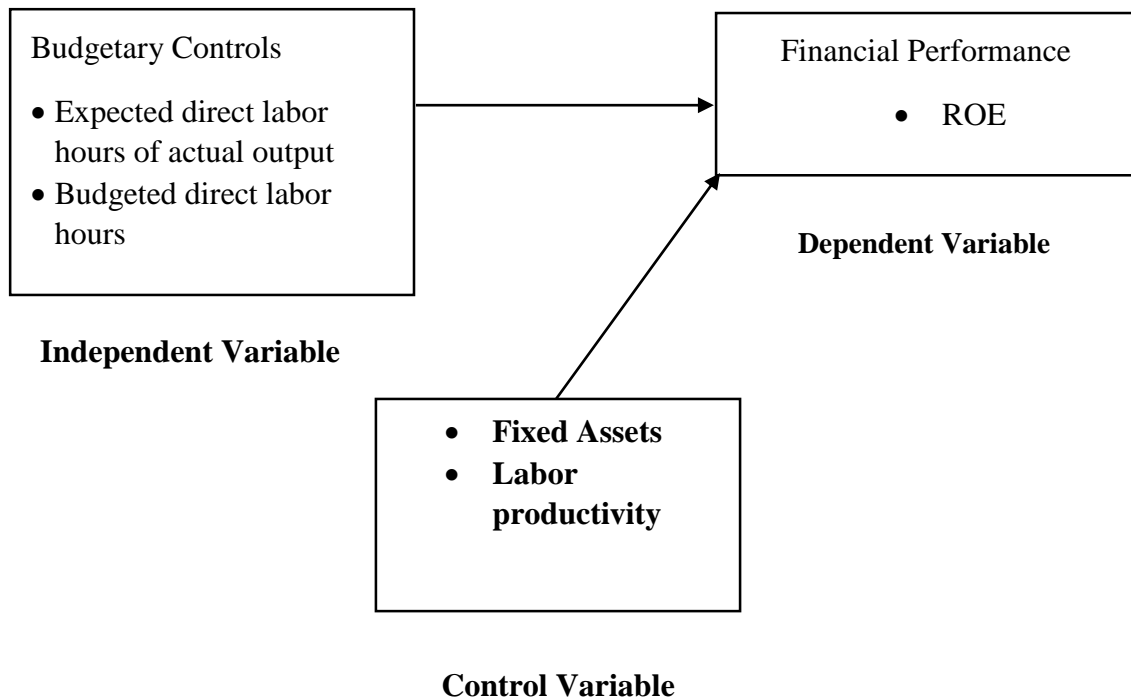


Figure 2. 1: Conceptual Framework

2.7 Summary of Literature Review

Budgeting becomes amongst the most important business cooperate tools in business location servings as control and planning tool. The strategy applied by several organizations and the hint towards the organizing (modern or traditional) ranging with the type of operational business in place and the penalty on the way of life of the business. The operation aimed at benefiting the budget performance may be qualitative or quantitative but are all budget driven. This literature review sheds more light on the overall views on the importance of budgets and budgetary controls, approaches of preparing budgets and how the impact controls, the monitoring and control process of budgets and the role they play to agro-veterinary medicine manufacturing companies (being part of agriculture value-add chain). The literature review further sheds light and emphasizes on importance of budgets as planning and control tools in the agro-veterinary medicine manufacturing companies and their importance cannot be underestimated in the industry as much as it forms huge part of the Kenyan economy.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presented the study methodology. It presented the research design, study population, data collection procedures and analysis.

3.2 Research Design

A descriptive research design was adopted in this analysis, Ezzamel (1990), in their research argued that the design relates and measures the cause and effect association among variables under study. The design was appropriate because the study main objective was to establish the effect of budgetary controls of financial performance of agro-veterinary medicine manufacturing companies in Kenya.

3.3 Population of the Study

The target population comprised of all the 28 companies registered in Kenya for the manufacture of agro-chemicals in Kenya (Agrochemicals Association of Kenya 2018). A census study approach allowing a sample size of 28 companies was adopted.

3.4 Data Collection Method

The study gathered secondary data on budgetary controls and financial performance. The data was sourced from audited annual financial statements of the 28 agro-veterinary medicine manufacturing companies in Kenya using a document review guide.

3.5 Data Analysis Technique

The study applied descriptive analysis and inferential analysis.

3.5.1 Analytical Model

In order to find out whether there was any association between budgetary controls and financial performance, the study ascertained the regression and correlation coefficients using the following model:

$$Y (\text{ROA})_{it} = \beta_0 + \beta_1 \text{BC}_{it} + \beta_2 \text{FS}_{it} + \beta_3 \text{LEV}_{it} + \varepsilon$$

Where: $Y (\text{ROA})_{it}$ = the financial performance (Return on Assets) of firm

β_0 = Intercept

BC = Budgetary controls measured by efficiency ratio

BS = Firm size

LEV = Leverage

$\beta_1 - \beta_2$ = Regression Coefficients

ε = error term.

Table 3. 1: Operationalization of the study variable

Variable	Measurement
Financial performance	ROA calculated as the ratio of firm's net income in a given period to the total value of its assets.
Budgetary Control	(Standard hours for actual production/Actual hours worked)*100%
Leverage	Total liabilities/Total assets
Firm Size	Natural logarithm of average book value of total fixed assets of the firm during a financial year.

Source: Author (2018)

3.5.2 Diagnostic Tests

3.5.2.1 Multicollinearity

Tolerance and Variance of Inflation Factors were used in the study to test for multicollinearity problem in the data set (Dormann et al., 2013). Also the study used correlation matrix and values less than 0.8 confirmed absence of multicollinearity.

3.5.2.2 Autocorrelation

The Durbin Watson autocorrelation test was carried out. Critical values that are considered ranges between 1.5 and 2.5. According to Durbin and Watson (1971), values outside this range indicate absence of auto-correlation.

3.5.2.3 Heteroscedasticity

Utilizing the Test Glejser for heteroskedasticity, if significance value less than 5% indicate absence of heteroscedasticity whereas the vice versa is true (Kleinbaum et al., 2013).

3.5.2.4 Panel Unit Root Test

The study used Augmented Dickey Fuller (ADF) test was conducted for this purpose through Stata version 14, software. The null hypothesis was that all panels had unit root. The alternative hypothesis was that panel did not have unit roots (Abernethy & Brownell, 1999). P –values greater than 0.05 indicated panels had unit root while p values less than 0.05 at 95% level of confidence indicated presence of unit root.

3.5.2.5 Test for Fixed or Random Effects

Before using panel data analysis, it was imperative to determine between fixed effect model and a random effect model which one was more appropriate.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The data was collected on the twenty-eight (28) Agro veterinary medicine manufacturing companies in Kenya over the period 2013 to 2017. Analysis was carried out with the help of STATA version 14, analysis of secondary data commenced by undertaking a descriptive analysis of the study variables aimed at obtaining the general profile of the data. In addition, appropriate regression diagnostic checks were undertaken on the data so as to determine its appropriateness for additional statistical examination. Further, an approximation of the panel regression models specified in section 3.6.2 was undertaken and interpretation of the results performed using the inferential statistics; R-square, F-test (Wald-test) and t-test.

4.2 Descriptive Analysis

4.2.1 Descriptive Analysis Output

This sub - section presents the descriptive statistical analysis of the collected data for every variable under study, it indicates the means, standard deviation, and the least possible and maximum figures.

Table 4. 1: Panel Variables Summary Statistics

Variable	Obs	Mean	Std.Dev	Min	Max
PVR	140	1.248	.070	.111	.594
Profitability (ROE)	140	2.135	4.803	-.032	.602
Firm Size(Fixed Assets)	140	15.499	1.798	11.470	20.012
Labor productivity	140	6.4	.121	5.032	13.388

Source: Research data, 2018

Table 4.1 indicates that for the periods under study (2013-2017), the PVR of Agro veterinary medicine manufacturing companies in Kenya had a mean PVR for the five years being 1.248 (124.8%). This indicated that agro-veterinary companies above budget production volume.

Also, the mean value of the Agro veterinary medicine manufacturing companies' return on equity was 2.135 percent, this indicated that every Ksh of common shareholders' equity earned about Kshs 2.135 and deviated by Kshs 4.803 in the period under study.

The size of the Agro veterinary medicine manufacturing companies was measured by a natural logarithm of individual firm's total fixed assets, according to the results total company fixed assets averaged kshs 15.499 Billion. The result is also consistent with previous Kenyan studies by Adusei (2011) and Kyereboa - Coleman and Biekpe (2007). Firm size determines the financial performance in various ways, larger firms are more efficient than smaller firms. Furthermore, smaller firms might have less control than larger firms therefore finding it complicated to outdo larger firms in a competitive business environment. As they grow bigger they might suffer losses leading to poor financial outcomes as a result of inefficiencies.

4.3 Diagnostic Tests

4.3.1 Normality Test

For the purpose of subsequent analysis, the variables were subjected to normality test to determine if the data were distributed normally or not. If the dependent variable is not normally distributed then there would be problems in subsequent statistical analysis until

the variable assumes normality (Child, 1990). Shapiro – Wilk (W) test was utilized to determine if the data was normality with focus on financial performance out (Dependent Variable). Shapiro –Wilk (W) Test for normality of financial performance was used because the sample size was small (28). Shapiro – Wilk (W) test is appropriate where the sample is between 7 to 2000 respondents (Shapiro and Wilk, 1965). For large samples of between 2000 and 5000 respondents, Kolmogorov – Smirnov (D) test is appropriate (Park, 2008; Garson, 2012). The hypothesis was to test whether the data was normally distributed is given by H₀ and H₁, set $\alpha = 0.05$, the rule is reject the hypothesis, if p-value is not greater than α , else fail to reject the hypothesis: (Park, 2008; Garson, 2012), Where: the null hypothesis was that the data was normal while the alternative hypothesis was that the data was not normal.

The results of the test are shown in Table 4.2. The table indicates that using the Shapiro – Wilk test, the financial performance data were normal since the p – values for the test for individual variables were higher than 0.05. The study therefore concluded that the data for individual variables were normally distributed.

Table 4.2: Normality Test results

Variable	Obs	W	V	Z	Prob>z
PVR	140	0.92594	9.353	5.094	0.071
Profitability (ROE)	140	0.89395	13.393	5.912	0.065
Firm Size	140	0.34594	9.3453	5.345	0.145
Labor productivity	140	0.37438	79.223	9.546	0.146

Source: Research data, 2018

4.3.2 Panel Root Test

Panel unit root test for all variables is illustrated in Table 4.3. Given the test results, it indicates that all the variables were stationary and substantial at 1%, 5% or 10% since the p -values associated with the respective test statistics were less than 0.01, 0.05 and 0.1.

Table 4. 3: Panel Unit Root Test Results

Variable			Time trend included	
			Statistic	p-value
PVR	Inverse chi-squared(10)	p	11.2146	0.3410
	Inverse normal	Z	-1.4378	0.0752
	Inverse logit t(19)	L*	-1.4469	0.0821
	Modified inv. chi-squared	Pm	0.2716	0.3930
Profitability (ROE)	Inverse chi-squared(10)	p	3.3020	0.9734
	Inverse normal	Z	2.1781	0.9853
	Inverse logit t(29)	L*	2.2884	0.9852
	Modified inv. chi-squared	Pm	-1.4977	0.9329
Firm Size	Inverse chi-squared(142)	p	18.8906	0.0417
	Inverse normal	Z	-0.6140	0.2696
	Inverse logit t(349)	L*	-0.8530	0.2003
	Modified inv. chi-squared	Pm	1.9880	0.0234
Labor productivity	Inverse chi-squared(142)	p	6.2550	0.7934

Inverse normal	Z	0.9237	0.8222
Inverse logit t(349)	L*	0.8904	0.8097
Modified inv. chi-squared	Pm	-0.8374	0.7988

The *p*-values for the Augmented Dickey Fuller (ADF) test were based on asymptotic Chi-square distribution.

4.3.3 Panel Multi-Collinearity Test

As shown in Table 4.4 all the VIFs were less than 5 and Tolerance values were less than 0.2.

Table 4. 4: Variation Inflation Factor

Variable	Tolerance	VIF
PVR	0.288	3.47
Profitability (ROE)	0.308	3.25
Firm Size	0.327	3.05
Labor productivity	0.537	1.86
Mean		2.91

The correlation coefficients for the variables, being well below 0.9 did not signify severe multi-collinearity as recommended by Gujarati (2003).

Table 4. 5: Pearson Correlation Coefficient Matrix

		PVR	Size	labor productivity	ROE
PVR	Coefficient r	1			
	Sig				
	N				
Firm Size	Coefficient r	0.0671	1		
	Sig	0.7017			
	N	35	35		
Labor productivity	Coefficient r	0.6869	0.4495	1	
	Sig	0.000	0.0068		
	N	35	35		
ROE	Coefficient r	0.5956	0.8405	0.7212	1
	Sig	0.0002	0.0000	0.0000	
	N	35	35	35	

4.3.4 Panel-level Heteroscedasticity Test

Heteroscedasticity is a condition where variance of the residual-term is not constant but varies with changes in explanatory variables (Gujarati, 2003). Although use of heteroscedastic data still provide unbiased OLS estimators, they are not efficient i.e. they do not have minimum variance in the class of all unbiased estimators. This results to smaller t-statistic value leading to inaccurate test of hypothesis. The assumption of classical linear regression model is therefore that the error-term variance should be constant. The results are shown in Table 4.6.

Table 4. 6: Breusch-Pagan/Cook-Welsberg test Results for Panel-level Heteroscedasticity

Fixed effects	Chi²	Prob > Chi²
Panel model 1	1122.14	0.000

H0: Constant error variance (homoscedasticity)

The test results for the two models provide chi-square distribution values of 1122.14 with conforming *p*-value of 0.0000. The results indicated that chi-square statistics were all substantial at 5% level.

4.3.5 The Hausman Test for Model Effects Estimation

This study utilized Hausman specification test to determine the best fitting model of firm performance.

Table 4. 7: The Hausman Test for Model Effects Estimation – un-moderated

Financial performance measures	Variables	Prob>chi²	Model
ROE	PVR, Firm Size and labor productivity	0.5486	RE

Key: RE = Random Effect

Table 4.6 displays the Hausman specification test results for panel regression equations that were analyzed in the subsequent sections. The test results show chi-square statistics that was statistically insubstantial at 5% level. Equations with Prob>chi2 values greater than 0.05 led to rejection of the null hypothesis that fixed effects estimation was appropriate

for the equations at 5% significance level as a result, the study estimated the panel models for random effect.

4.4 Correlation Analysis

To examine association between variables, the study employed Pearson’s simple correlation analysis; correlations indicate the nature and strength of association between two variables under study. The coefficient defines both the weight and the bearing of the association-it ranges between -1 and 1 that indicates how strongly two variables are linearly related.

4.4.1 Correlation Analysis for firm Size and Financial performance

Pairwise correlation coefficient was used to gauge the association between firm size and financial performance of Agro veterinary medicine manufacturing companies in Kenya.

Table 4.8: Correlation Analysis for firm size and financial performance

	ROE
r	0.2314
Sig	0.000
N	140

The results pointed out firm size and financial performance were positively correlated. This implies that during the study period 2013 - 2017 an increase in firm size led to an increase in financial performance.

4.4.2 Correlation Analysis for PVR and Financial Performance

Pairwise correlation coefficient was used to gauge the association between PVR and financial performance of Agro veterinary medicine manufacturing companies in Kenya.

Table 4.9: Correlation Analysis for PVR and financial performance

	ROE
PVR	0.5467
Sig	0.0310
N	140

The results points out that PVR and financial performance wore strongly and positively correlated. This implies that during the study period 2013 - 2017 an increase in PVR led to an increase in financial performance.

4.4.3 Correlation Analysis for Labor Productivity and Financial Performance

Pairwise correlation coefficient was used to gauge the association between labor productivity and financial performance of agro veterinary medicine manufacturing companies in Kenya.

Table 4.10: Correlation Analysis for Labor Productivity and Financial Performance

	NI
Labor Productivity	0.3237
Sig	0.2134
N	140

The findings showed that a substantial negative association between labor productivity and financial performance. This implies that during the study period 2013 - 2017 an increase in labor productivity did not necessarily lead to a decrease in financial performance.

4.5 Regression Analysis

The study carried out panel regression analysis to establish the relation among study variables. The results are presented in Table 4.11.

Table 4.11: Budgetary control and financial performance

	Financial Performance	Coefficient	Std. Error	Z	P> z	Model
Model 1a	PVR	1.206	.195	6.19	0.000	RE
	Firm Size	3.527	1.784	1.98	0.048	
	Labor productivity	0.513	.227	2.26	0.025	
	-Cons	20.977	3.707	-5.66	0.000	
Statistics	Model 1a					
F(3,18)						
Prob> F						
Wald chi2	50.61					
Prob> chi2	0.000					
R-Squared	0.6968					
Rho	.782					

As shown in Table 4.13, results on the effect of budgetary control on financial performance show that the coefficient determination explains up to 69.68% of variations in financial performance of agro-veterinary companies in Kenya. This is based on the resultant determinant coefficient (R^2) value equivalent to 0.6968. This indicates a relatively fair measure of fit for the variables included in the model. Further, the corresponding Prob>chi2 – value of 0.000 signify that the coefficients of the variables are jointly statistically different from zero at 95% and 90% confidence level.

As shown in Table 4.13, the results indicated that during the study period 2013 – 2017 holding other factors constant at zero, a unit factor increase in PVR led to 1.206 units increase in financial performance, the P value was less than the significance level $\alpha =$

0.05 implying that the association was positive and statistically substantial. Also a unit factor increase in firm size led to 3.527 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the association was positive and statistically substantial. Lastly, a unit factor increase in labor productivity led to 0.513 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the association was positive and statistically substantial. Therefore the study model can now be presented as follows:

$$\text{ROE} = 20.977 + 1.206 \text{ PVR} + 3.527 \text{ Firm size} + 0.513 \text{ Labor productivity}$$

4.6 Key Findings and Discussion

The portion presents key revelations on think objective and in this manner associates the disclosures with various examinations and composing. The examination found a tremendous association between firm size and cash related execution of Agro veterinary medication creating associations in Kenya, this shows firm size is an imperative marker of ROE. It has a positive coefficient demonstrating that extension in firm size prompts increase in the entry on esteem. This examination results concur with the advancement of the firm speculation made by Penrose (1959). This theory demonstrates that there is a linkage between firm resources and beneficial firm advancement. The examination disclosures set up that availability of more resources (net assets) was not associated with improved advantage (ROE).

The examination disclosures moreover concur with the revelations from an examination by Nyanga (2012) which set up a positive effect both ROA by firm size. The disclosures regardless, can't resist repudiating discernments by Amato and Wilder (1990) who demonstrated that as a firm creates in size (net assets) x-inefficient angles are delivered,

provoking commonly below average execution (ROA). Another examination with various results to this examination was by Prasetyantoko and Parmono (2008) who rethought earlier disclosures against new data inside an improved demonstrative structure. Prasetyantoko and Parmono (2008) found that firm size (assessed by assets) impacts advantage in a couple, yet not all organizations. This is because benefit is in the end controlled by a couple of complex parts including thing costs, factor costs, and the creation work, the relationship to gauge changes among endeavors and can't be instantly perceived.

The study finds a substantial relation between Production volume Ratio (PVR) and financial performance this indicates that PVR is a substantial predictor of ROE. The results disagree with findings from Mandu (2012) who examined the association between measures of budgetary control and the financial performance of manufacturing firms in Kenya. Data for the period 2004 through 2008 for 36 firms were obtained from the annual financial reports. The study concluded that production volume ratio has a substantial negative correlation with performance of smaller firms and not for larger firms. The findings are in line with Chepkosgei (2013) who studied the influence of budgetary control (production volume ratio) on financial performance of 43 manufacturing firms in Kenya. Findings of the study indicate that production volume ratio could substantially predict only ROE and ROA.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The aim the research was to establish the effect of budgetary control on financial performance of agro-veterinary medicine manufacturing companies in Kenya. The study made use of a descriptive research approach. The target population was the twenty eight agro-veterinary medicine manufacturing companies in Kenya, a census method was employed allowing all companies to participate. The study used a document review guide to collect secondary data recorded in audited annual financial statements of the companies under study. ROE was used as a measure of financial performance. The study sought to determine the effect of budgetary control on financial performance of agro-veterinary medicine manufacturing companies in Kenya; descriptive analysis, correlation analysis and regression analysis were carried out. Descriptive results showed that agro-veterinary medicine manufacturing companies had a total assets averaging kshs 15.499 Billion during the study period 2013-2017. Also, for the periods under study (2013-2017), the PVR of agro-veterinary companies in Kenya had a mean PVR for the five years being 1.248 (124.8%). This indicated that agro-veterinary companies above budget production volume. The correlation analysis findings showed that firm size and ROE were positively correlated, also PVR and ROE were positively correlated and lastly, labor productivity and ROE were inversely correlated.

Regression analysis results showed that budgetary control on financial performance explained up to 69.68% of variations in financial performance of agro-veterinary

companies in Kenya. This was based on the resultant determinant coefficient (R^2) value equivalent to 0.6968. This indicated a relatively fair measure of fit for the variables included in the model. Further, the corresponding Prob>chi2 – value of 0.000 signified that the coefficients of the variables were jointly statistically different from zero at 95% and 90% confidence level.

The results further indicated that during the study period 2013 – 2017 holding other factors constant at zero, a unit factor increase in PVR led to 1.206 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the association was positive and statistically substantial. Also a unit factor increase in firm size led to 3.527 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the association was positive and statistically substantial. Lastly, a unit factor increase in labor productivity led to 0.513 units increase in financial performance, the P value was less than the significance level $\alpha = 0.05$ implying that the association was positive and statistically substantial.

5.2 Conclusions

Firm size and ROE were positively correlated, also PVR and ROE were positively correlated and lastly, there was a negative and substantial association between labor productivity and ROE. Budgetary control on financial performance explained up to 69.68% of variations in financial performance of agro-veterinary companies in Kenya. This means that other than budgetary controls there are other factors that affect financial performance among agro-veterinary medicine manufacturing companies in Kenya.

5.3 Policy Recommendations

Budgetary controls are basic in determining performance of agro veterinary Medicine Companies in Kenya. Most organizations have insignificant formal spending controls in their affiliations therefore the need to develop an indisputable game plan on spending control shapes. In perspective of the findings, affiliations need to investigate diverse parts that add to better financial execution isolated from budgetary controls, like agents inspiration and invest more in staff enhancement in demand to redesign their execution.

5.4 Limitation of the Study

The investigation expected a couple of troubles which were critical. Information were accumulated from helper information which included financial statements and the administrators reports of the agro veterinary Medicine Companies in Kenya. The examination predicted inconveniences in obtaining the administrators reports from association authorities as a result of the delicate thought of the material searched for, considering furthermore the forceful thought of the manufacturing industry. To overcome this, association administrators sharing copies of the administration reports were ensured of security of the information. Chiefs or association administrators providing the reports were in like manner informed that the material information accumulated were for academic purposes.

5.6 Suggestions for Further Research

The analysis provided an empirical understanding on the effect of budgetary control on financial performance of agro-veterinary medicine manufacturing companies in Kenya for the period 2013-2017. This study was undertaken within the Kenyan context with

distinctive characteristics in regulatory, economic and political fronts. In that regard, the study vouch for a related study be conducted in East Africa and beyond to see whether the same results will be replicated.

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APPENDICES

Appendix 1: Document Review Guide

a) Return on Assets

Period	Income After Tax	Total fixed Assets + Total Current assets	ROA i.e.; (Income after Tax/ Total Assets)
2013/14			
2014/15			
2015/16			

b) Bank Size

Year	Total Fixed Assets
2013/14	
2014/15	
2015/16	
2016/17	
2017/18	

C) Leverage

Year	Total Assets	Total Liabilities	Ratio i.e.; (Total liabilities/Total assets)
2013/14			
2014/15			
2015/16			
2016/17			
2017/18			

d) Budgetary Control

Year	Standard hours for	Actual hours worked	Efficiency Ratio i.e.;

	actual production		(Standard hours for actual production/Actual hours worked) * 100%
2013/2014			
2014/2015			
2015/2016			
2016/2017			
2017/2018			

Appendix II: List of Agro-veterinary Medicine Manufacturing Companies

- BASF East Africa Limited
- Sineria East Africa Limited
- Organix Limited
- Koppert Biological Systems (K) Ltd
- Dow Agrosiences
- Arysta Life Science Corporation
- Agriscope Africa Limited
- Amiran Kenya Limited
- Anset International Limited
- Bayer East Africa Limited
- Biomedica Laboratories Limited
- Chemraw E.A Limited
- Elgon Kenya Ltd
- Greenlife Crop Protection Ltd
- Export Trading Co. Inputs Kenya
- Hangzhou Agrochemicals EA Ltd
- Kenagro Suppliers Ltd
- Kilimo Centre Ltd
- Lachlan K Ltd
- Monsato Kenya Ltd
- Norbrook Kenya Ltd
- Osho Chemicals Ltd
- Pestgon Ltd

- Rockem Limited
- Rotam Sub-Saharan Africa
- Syngenta E. A Limited
- Twiga Chemical Industries
- Ultravetis E.A Ltd

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