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Intervening Role of Operational Efficiency on the Relationship between Business Process Outsourcing and Performance of Oil and Gas Distribution Firms in Kenya

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Abstract

The Theory of Constraints and the Dynamics Capability theory propagate that firms' resources and capabilities may vary significantly hence the need for adopting various operational efficiencies to improve the weakest chains in business structures to improve firm performance. The study determined the influence of operational efficiency on the relationship between Business Process Outsourcing and performance of oil and gas distribution firms in Kenya. The cross sectional descriptive survey research design where all the oil and gas distribution firms in Kenya registered with the Energy Regulatory Commission formed the study population. Primary and secondary data was collected through a semi-structured questionnaire. The unit of measurement in the study was the firm. Simple & multiple regression and correlation analyses were used to test the hypothesis. The findings provided satisfactory statistical evidence indicating that operational efficiency had a full mediation between BPO and performance. These results infer that operational efficiency fully mediate the relationship existing between business process outsourcing and performance of oil and gas distribution firms in Kenya. The alignment between BPO, operational efficiency and firm performance is critical in the outsourcing process hence the need to develop strategic outsourcing and its future core capabilities, firm structure and competitive position and adjust these to the long-term business strategy.

Keywords: *Business process outsourcing, Operational efficiency, Performance, Firm Oil and Gas*

1.0 Introduction

1.1 Background of the Study

In the competitive market place, operational efficiency refers to the process of firms delivering products and services to clients in a cost-effective manner without compromising on quality enabling the firm to increase revenue and improve firm performance (Blackstone, 2010). Studies have indicated that operational efficiency may have an intervening relationship between BPO and performance (Bhagavath, 2009). Operational Efficiency (OE) therefore focuses on the identification of several strategies and techniques to deliver products and services to clients in a cost effective and timely manner without compromising on quality thus improving firm performance (Kuosmanen & Johnson, 2010).

Operational efficiency is measured by using input and output ratios where an improvement in the ratios is an indicator of improved firm performance (Rao & Lakew, 2012). Total Asset Turn Over (TATO) which measures the efficiency of a company's use of assets in generating sales revenue and Equity Turn Over (ETO) which measures the efficiency with which management is using equity to generate revenue are examples of operational efficiency ratios. In analyzing the relationship between operational efficiency and firm performance in the context of outsourcing, studies have indicated that operational efficiency may have an intervening relationship between BPO and firm performance and is a primary driver of business performance (Buckley, 2016).This enhances optimal allocation of available resources in order to maximize outputs of the firm (Reid & Sanders, 2007).

The local and global outsourcing future demands and trend in the oil and gas distribution sector for outsourced core activities is propelled by business demand to minimize and spread operational risk through offshoring to multiple suppliers and locations as opposed to single suppliers and singular locations (Tholons, 2007). The downstream segment involves marketing and distribution of the oil and gas products to the final consumer using supply and distribution channels such as petrol stations retail outlets and a few designated industries. However, the oil and gas industry has continued to struggle with declining known resources affecting profitability, increasing upstream, midstream and downstream operational costs and cut-throat industry competition (Chatrath, Miao, Ramchander & Wang, 2015).

1.2 Statement of the Problem

The petroleum industry in Kenya is largely oligopolistic with over 71.9 % of the market share controlled by five (5) major firms namely: Total Kenya Limited 21.4%, Kenol/Kobil 20.8%, Vivo Energy Limited 17.1%, Oil Libya 7.7% and NOCK 4.9% (ERC, 2016). The liberalization of the petroleum sector in Kenya in 1994 forced several multinational firms such as Esso Limited, Mobil Limited, Caltex Limited, Beyond Petroleum (BP) and Agip Limited to prematurely exit the market (Sambu, 2010). Nonetheless, Theory of Constraints and the Dynamics Capability theory argue that firms' resources and capabilities vary significantly hence the need for adopting various operational efficiencies to improve the weakest chains in business structures to improve firm performance.

Operational efficiency which identified gaps in firm operational effectiveness was recognized to have a possible intervening effect on the relationship between BPO and performance (Kale, Meneghetti & Shahrur (2013). Rajasekar, Ashraf and Deo (2014), using a data envelopment analysis

approach focused on the evaluation of operational efficiency of selected major ports in India during the period 1993 to 2011. The research determined that the size of the port did not influence operational efficiency and better performance. Kenani (2013), cross sectional survey study focused on operational efficiency and performance of BPO activities in cement manufacturing firms in Kenya. The study noted that BPO has a positive impact on performance and supply chain effectiveness has a positive impact on operational effectiveness and performance. However, the study was limited as to how firm characteristics impacts BPO and performance relationship. In light of the developments in the outsourcing industry, what influence does operational efficiency and firm have on the relationship between BPO and performance of oil and gas distribution firms in Kenya?

1.3 Objective

To determine the intervening role of operational efficiency on the relationship between BPO and performance of oil and gas distribution firms in Kenya.

1.4 Research Hypothesis

H_A: Operational efficiency has a significant intervening effect on the relationship between business process outsourcing and performance of oil and gas distribution firms in Kenya.

2.0 Literature Review

2.1 Theoretical Review

The theories that informed this study are theory of constraints and transaction cost economics theory.

2.1.1 Theory of Constraints

Theory of Constraints is defined as a framework that guides in the identification of constraints through a process of focusing limited time and resources for maximum returns and further assert that a constraint is anything that limits a firm's higher performance (Umble &Spoede 1991). Firm's inputs and resources are limited, it is critical that only key targets and goals are targeted for maximum returns. To maintain efficient business operations that may lead to improved performance, it is critical to identity and eliminate the constraints by focusing on the weakest link of the chain (Motwani, Klein & Harowitz, 1996).

The successful application of the Theory of Constraints (TOC) has been in manufacturing process outsourcing (Librelato, Lacerda, Rodrigues & Veit, 2014) and BPO service industry outsourcing. The Theory of constraints helps firms eliminate constrains, improved timelines and flexibility in the delivery of goods and services, enhance customer satisfaction and cost savings impacting performance positively performance.

2.1.2 Transaction Cost Economics Theory

In a BPO set up, transactional costs refer to the costs of monitoring mechanisms to prevent opportunistic behavior from service provides (Abdul-Halim & Chetta, 2009; Fill & Visser, 2000). Outsourcing of a firm's non-core operations to an external service provider is deemed to lower production and coordination costs. However, the transactional cost sometimes become high due to the management of service providers and shared risks. This theory indicates the functions that are not firm specific should be outsourced. A firm's decision to outsource its processes and functions to an external service provider should exclusively be based on the rationale to protect the firm

value and only implemented when the transactional costs outweigh the management costs of conducting the activity in-house.

According to transaction cost economics theory, when an asset specificity is low, and transactions are relatively frequent, transactions might be governed by outsourcing. In other words, higher levels of asset specificity would lead to a lower amount of the core business being outsourced (Jiang, Juanjuan, Le & Quan 2017).

2.2 Empirical Review

The alignment between BPO, operational efficiency and firm performance is critical in the outsourcing process hence the need to develop strategic outsourcing and its future core capabilities, firm structure and competitive position and adjust these to the long-term business strategy (Dess, Lumpkin, Eisner & McNamara, 2013).

Omondi and Muturi (2013), investigated factors affecting the financial performance of listed companies at Nairobi Securities Exchange in Kenya. The study adopted an explanatory research design and 29 listed firms which have consistently been operating at the Nairobi securities exchange during the period 2006-2012 were sampled. The study provides some precursory evidence that leverage, operational efficiency, liquidity, company size and company age play an important role in improving company's financial performance.

Mutunga, Minja and Gachanja (2014), endeavored to empirically test the effects of Innovative adaptation and operational efficiency on sustainable competitive advantage of food and beverage firms in Kenya. This study sought to answer the question on the effects of human capital in innovative adaptation and dynamic operational efficiency on firm's ability to attain sustainable competitive advantage within the food and beverage companies in Kenya. This research entailed a descriptive study design. From the study, 87% of respondents indicated concurrence on usefulness of operational efficiency for sustainable competitive advantage (CA). Kenyan firms in the food and beverage industry therefore highly regard human capital, given innovative adaptation and operational efficiency, as a major contributor to sustainable competitive advantage.

Operational efficiencies are stated to be advantageous to firms engaged in outsourcing through the improved timeliness and flexibility in delivery of products and services, increased customer satisfaction, improved quality of products and services and increased costs savings and capabilities and gaining competitive advantage (Kale & Singh, 2009).

2.3 Conceptual Framework

The conceptual framework in this study identified the concepts and relationship between three key variables under study. The variables include BPO as the independent variable, firm performance as the dependent variable and operational efficiency as the intervening variable.

Ravitch and Riggan (2016) opine that a conceptual framework assists the scholar develop awareness and fully understand the variables under investigation. The conceptual framework in this study identified the concepts and relationship between the key variables under study. The variables include BPO as the independent variable, firm performance as the dependent variable

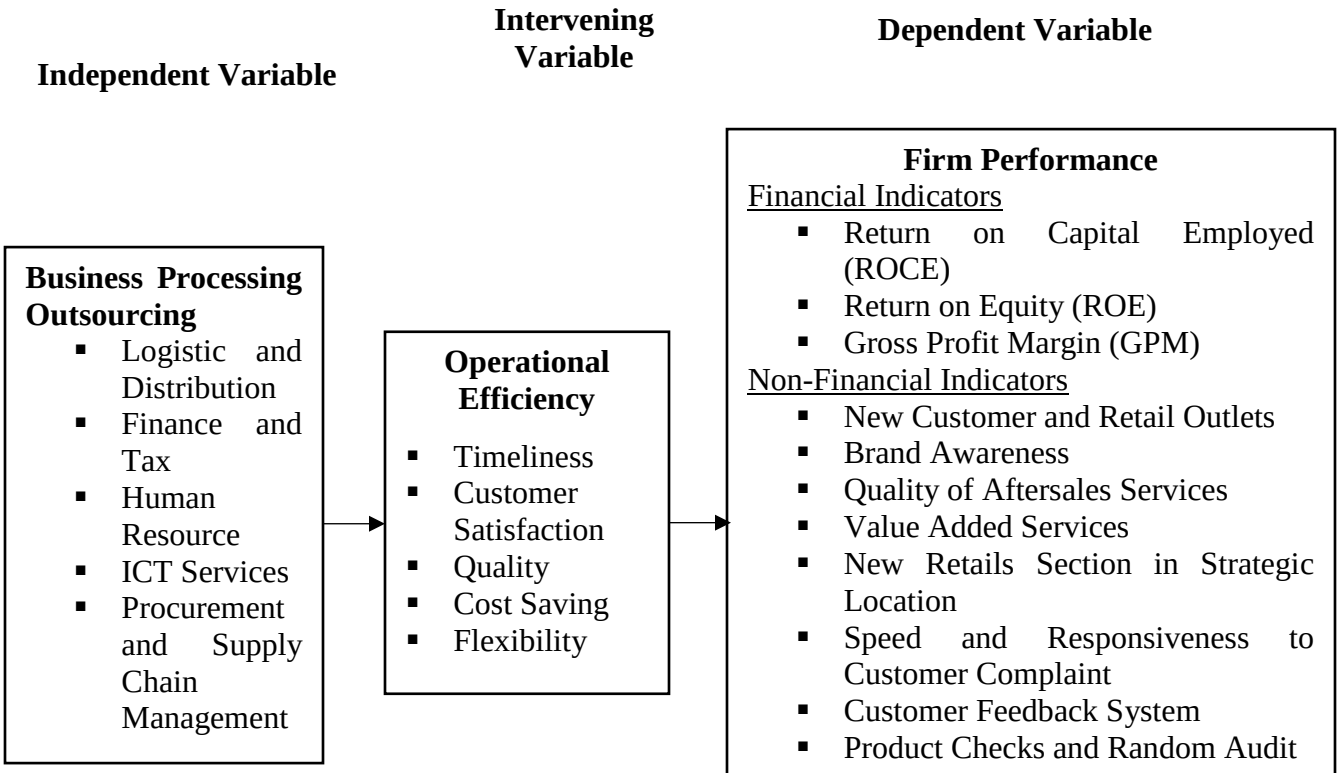

Figure 1: Conceptual Framework

2.3.1 Business Process Outsourcing

In the model, BPO is depicted as the independent variable. Gravetter and Wallnu (2016) considered an independent variable as one that explain the change or outcome in another variable. The five dimensions of BPO, that is, logistical distribution, finance and tax, human resources, ICT services, procurement and supply chain management operationalize the independent variable.

2.3.2 Operational Efficiency

Operational efficiency was the intervening variable in the research study. An intervening variable is defined as a hypothetical variable used to explain causal links between the independent and the dependent variable and is deemed very hard to control (Saunders, Lewis & Thornhill, 2016). Usually the intervening variable is caused by the independent variable and it self a cause of the dependent variable. The five dimensions of operational efficiency, that is, timeliness, customer satisfaction, quality, cost savings and flexibility have been used in this study to operationalize the intervening variable.

2.3.3 Firm Performance

Gravetter and Wallnu (2016) state that a dependent variable is a variable whose change the researcher wishes to explain. The dependent variable further explains predictors, presumed causes, effects or influences under investigation. Financial indicators of firm performance such as Return on Capital Employed (ROCE), Return of Equity (ROE) and Gross Profit Margin (GPM) performance measures ratios were considered in the study. The non-financial indicators considered include new customers and retail outlets, brand awareness, quality of after sales services, value added services, new retail stations in strategic locations, quality of customer feedback system and quality of product check and random audits. Measuring of firm performance is key as it leads to better asset management, an increased ability to provide customer value, increased organizational reputation which leads to greater consumer trust and ability to command a premium price (Cameron & Whetten, 1983).

3.0 Research Methodology

The study adopted cross sectional descriptive survey research design. The study target population was all the (130) oil and gas distribution firms in Kenya registered with the Energy Regulatory Commission (ERC), of whom formed the sample size. This study adopted the semi-structured questionnaire method for data collection. The semi- structured questionnaire was designed to solicit data on business process outsourcing, operational efficiency and performance of oil and gas distribution firm in Kenya. Inferential statistics (correlation and linear multiple regression analysis) were used to generalize the sample results to the population and these include diagnostic regression to test the relationship between BPO and firm performance and operational efficiency of Oil and Gas companies in Kenya. A multivariate regression model was used to establish the intervening role of operational efficiency on the relationship between BPO and firm performance.

4.0 Findings and Discussions

4.1 Response Rate

One hundred and thirty (130) oil and gas distribution firms in Kenya registered and licensed by the ERC to import, export and wholesale on oil and gas products in the country was targeted. Results are presented in table 1.

Table 1 Response Rate

Response Rate	Frequency	Percentage
Returned	110	84.62%
Not Returned	20	14.38%
Total	**130**	**100%**

Source: ***Survey Data, 2017***

From table 1 above, one hundred and thirty (130) questionnaires were distributed, out of which 110 were filled and returned, representing 84.62 per cent response rate. Saunders, Lewis and Thornhill (2016) states that a response rate of 80 per cent is adequate and indicated effecting data collection methodology. The questionnaire was also accompanied by a covering letter issued by the University of Nairobi. Dillman, Smyth and Christian (2014) states that the covering letter issued by an established authority authenticates the study improving the response rate. Therefore, the response rate of this study was satisfactory. The response rate is also consistent with Namada (2013) study which had a response rate of 62.5% from the EPZ firms. Njeru (2013) studying marketing in the tourism sector in Kenya had a response rate of 60%.

4.2 Reliability Test

The study tested internal consistent of the research instrument using Cronbach's Alpha approach, the other widely used measure of co-efficient of internal consistency. A co-efficient of 0.70 or more implies that there is a high reliability of data denoting acceptable level of internal reliability (Saunders, Lewis & Thornhill, 2016). The summary of reliability tests is given in Table 2.

Table 2: Summary of Reliability Tests using Cronbach's Alpha Internal Consistency

Variable	N	No of items	Cronbach's Alpha Coefficient	Internal Consistency rating
Business Process Outsourcing	11	5	0.78	Acceptable
Operational Efficiency	11	5	0.89	Good
Performance	11	8	0.91	Excellent
Average			**0.85**	

Source: Survey Data, 2017

The highest alpha coefficient was the average for firm performance at 0.91 with 8 items. BPO with five items had an alpha coefficient of 0.78 and operational efficiency with 5 items had an alpha coefficient of 0.89. This showed that all the statements for each variable met the threshold of 0.7.

4.3 Descriptive Statistics

4.3,1 Operational efficiency

Operational efficiency was an intervening variable having five measurement items. The respondents were requested to indicate their level of agreement regarding various aspects of operational efficiency on which they were to rate their respective oil and gas distribution firms. A five point Likert scale was used to rate the responses where: 1 – Very Poor, 2 – Poor, 3 – Average, 4 – Good, 5 – Very Good. The findings are presented as frequency, percentage, mean and standard deviations are shown in Table 3.

Table 3: Mean Scores, Standard Deviations and Coefficient of Variation (Cv) for Operational Efficiency

Operational Efficiency	N	Mean	Std. Dev.	CV (%)
Timeliness in the delivery of products and services	110	3.83	0.740	19%
Customer Satisfaction	110	3.95	0.588	14%
Quality of products and services	110	4.24	0.716	16%
Cost savings	110	3.83	0.689	18%
Flexibility	110	4.1	0.716	17%
Overall		**3.99**	**0.69**	**17.31%**

Source: ***Survey Data, 2017***

Indicators of Operational Efficiency were used to determine the extent to which they mediate the relationship between Business Process Outsourcing and performance of oil and gas distribution firms in Kenya. The overall mean score was 3.99 and a coefficient of variation (CV) = 17.31%.

The standard deviation and mean of a variable are expressed in the same units, so taking the ratio of these two allows the units to cancel.

The results in all the variables indicate that firm managers consider timeliness in the delivery of products and services, customer satisfaction, quality of products and services, cost savings and flexibility as very good components that intervene the relationship between business process outsourcing performance of oil and gas distribution firms in Kenya.

Table 4: Total variance explained for Operational Efficiency

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Customer Satisfaction	1.808	36.161	36.161	1.808	36.161	36.161	1.556	31.117	31.117
Quality of products and services	1.258	25.156	61.316	1.258	25.156	61.316	1.510	30.199	61.316
Timeliness in the delivery of products and services	.765	15.306	76.623						
Cost savings	.654	13.086	89.709						
Flexibility	.515	10.291	100.000						

Extraction Method: Principal Component Analysis.

The eigenvalue is calculated for each factor extracted and can be used to determine the number of factors that has the highest contribution. A cutoff value of 1 is generally used to determine factors based on eigenvalues. The scree plot results indicated that two components (Customer Satisfaction and Quality of products and services) had an eigenvalue that was greater than one. This means that Customer Satisfaction and Quality of products have the highest contribution. The finding corroborate the total variance explained results for operational efficiency. The results are presented in Figure 2.

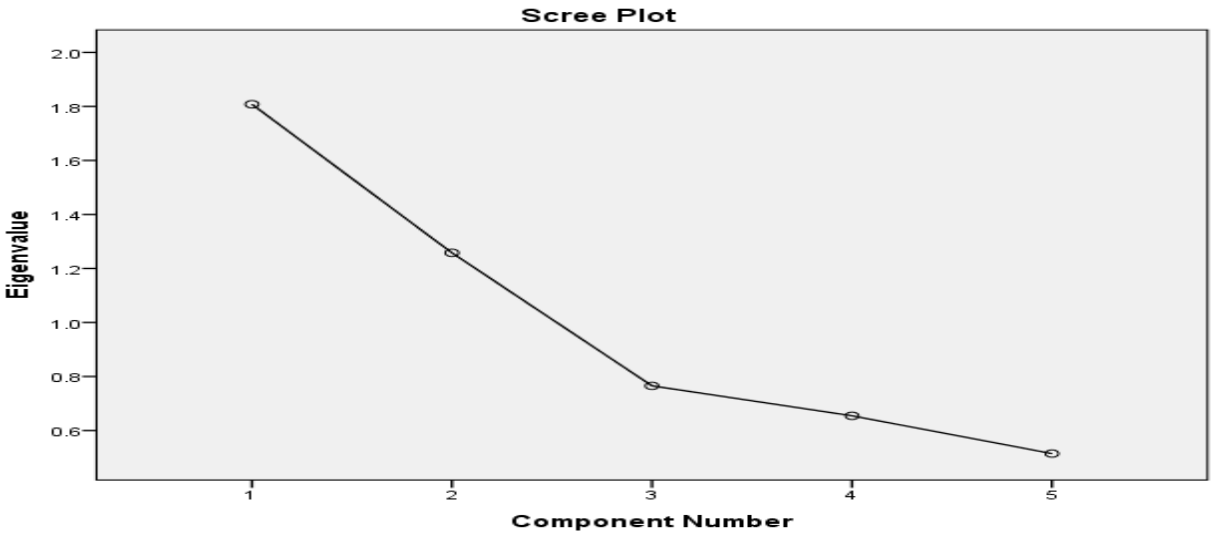

Figure 2: Scree plot for Operational Efficiency

4.3.2 Performance

Firm performance was the dependent variable in this study. Firm performance was measured using financial indicators and non-financial indicators. The financial measures include Return on Capital Employed (ROCE), Return of Equity (ROE) and Gross Profit Margin (GPM) performance measures ratios.

i. ROCE, ROE and Gross Profit Margin ratio

The financial data- ROCE, ROE and Gross profits margins ratio were obtained from the financial statements of the firms. Results are presented in table 5.

Table 5: ROCE, ROE and Gross Profit Margin ratio

Variable	N	Minimum	Maximum	Mean	Std. Dev
ROCE	110	0.02	8.42	0.425	0.82185
ROE	110	0.05	1.76	0.2736	0.34097
Gross profit Margin ratio	110	0.04	3.01	0.5833	0.52455

Source: ***Secondary Data, 2017***

Results in table 5 show that the mean of ROCE was 0.425 with a standard deviation of 0.82185. Its minimum and maximum were 0.02 and 8.42 respectively. Further, ROCE had a mean of 0.2736 with a standard deviation of 0.34097. Its minimum and maximum were 0.05 and 1.76 respectively. The mean for Gross Profit Margin ratio is 0.5833 with a standard deviation of 0.52455. It's minimum and maximum is 0.04 and 3.01 respectively. From the findings, the oil and gas distributions firms are seen to be profitable, a clear indication of the success associated with the industry.

ii. Aspects of Firm performance

Statements describing non-financial aspects of firm performance were provided and measured using a rating scale of 1 to 5 where: 1= Not at all; 2 = Less extent; 3 = Moderate extent; 4 = Large extent; 5 = Very large extent. The coefficient of variation rating were determined as 0 to 25% very good, 26 to 50% good, 51 to 75% fair and 76 to 100% not good. Results are presented in table 6.

Table 6: Mean Scores, Standard Deviations and Coefficient of Variation (Cv) for Performance

Variable	N	Mean	Std. Deviation	CV (%)
Increase of new customers and retail outlets	110	3.827	0.689	18%
Increase of brand awareness	110	3.982	0.663	17%
Increase in quality of after sell services	110	3.827	0.740	19%
Increase in value added services	110	3.946	0.588	15%
Opening of new retail stations in strategic locations	110	4.364	0.726	17%
Speed and responsiveness to customer complains	110	3.827	0.689	18%
Quality of customer feedback system	110	4.100	0.716	17%
Quality of product checks and random audits	110	4.064	0.694	17%
Overall		**3.992**	**0.688**	**17.26%**

Source: ***Survey Data, 2017***

As indicated in table 6 above, the sub-variables of firm performance were used to assess the performance of oil and gas distribution firms in Kenya. The overall mean score was 3.992 and a coefficient of variation (CV) = 17.26%. The standard deviation and mean of a variable are expressed in the same units, so taking the ratio of these two allows the units to cancel. The results in all the variables indicate that new customers and retail outlets, brand awareness, quality of after sell services, value added services, opening of new retail stations in strategic locations, speed and responsiveness to customer complaints, quality of customer feedback system and quality of product checks and random audits are very good components of firm performance. Table 7 shows the total variance explained for operational efficiency.

Table 7: Total variance explained for Performance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Quality of customer feedback system	2.585	32.309	32.309	2.585	32.309	32.309	2.207	27.583	27.583
Quality of product checks and random audits	1.705	21.307	53.615	1.705	21.307	53.615	1.714	21.426	49.009
opening of new retail stations in strategic locations	1.062	13.270	66.885	1.062	13.270	66.885	1.430	17.876	66.885
increase of new customers and retail outlets	.961	12.010	78.895						
increase of brand awareness	.720	8.998	87.893						
Increase in quality of after sell services	.635	7.943	95.836						
increase in value added services	.333	4.164	100.000						
speed and responsiveness to customer complains	2.691E-017	3.364E-016	100.000						

Extraction Method: Principal Component Analysis.

The eigenvalue is calculated for each factor extracted and can be used to determine the number of factors that has the highest contribution. A cutoff value of 1 is generally used to determine factors based on eigenvalues. The scree plot results indicated that three components (Quality of customer feedback system, Quality of product checks and random audits and opening of new retail stations in strategic locations) had an eigenvalue that was greater than one. This means that Quality of customer feedback system, Quality of product checks and random audits and opening of new retail stations in strategic locations have the highest contribution. The finding corroborate the total variance explained results for firm performance. The results are presented in Figure 3.

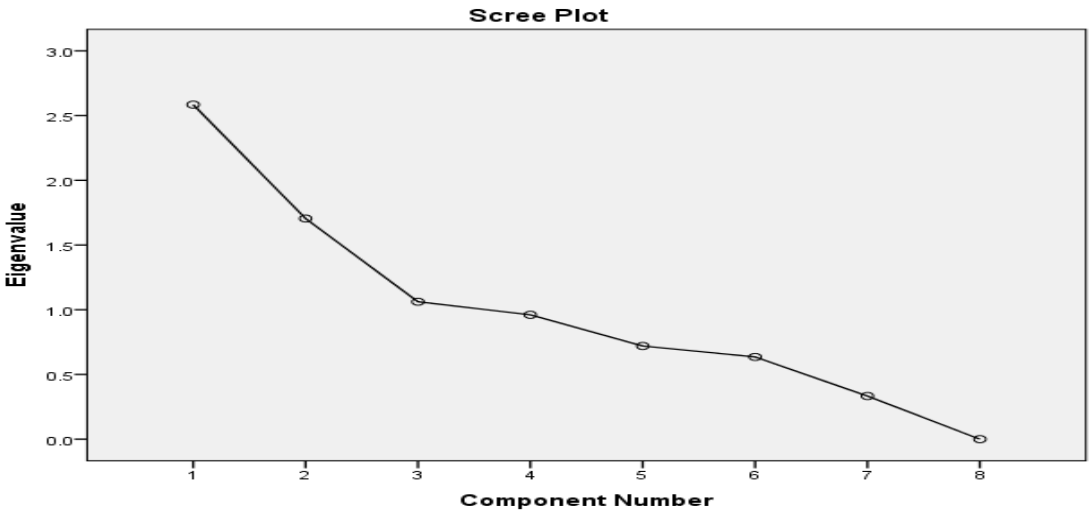

Figure 3: Scree plot for Firm Performance

4.4 Correlation Analysis

Correlation analysis was performed using Pearson Product Moment Correlation Coefficient technique. This was to establish the extent of association between Business process outsourcing, operational efficiency and firm performance. Table 8 shows the results of the analysis.

Table 8: Correlation Matrix

		Composite scores of Performance	**Composite scores of Business Process Outsourcing**	**Composite scores of Operational Efficiency**
Composite scores of Performance	Pearson Correlation	1.000		
	Sig. (2-tailed)			
Composite scores of Business Process Outsourcing	Pearson Correlation	.897**	1.000	
	Sig. (2-tailed)	.000		
Composite scores of Operational Efficiency	Pearson Correlation	.871**	.721**	1.000
	Sig. (2-tailed)	.000	.000	

Correlation is significant at the 0.01 level (2-tailed).

Source: ***Survey Data, 2017***

The results in Table 8 indicate that the relationship between Business Process Outsourcing and firm performance is strong, positive and statistically significant (R = .89, p = .000).

4.5 Diagnostics

Diagnostics procedures check how well the assumptions of multiple linear regression are evaluated (Hayes, 2013). The assumptions tested for regression analysis included absence of outliers, normality, homoscedasticity and collinearity. To conduct a regression analysis with a valid outcome, there should be no outliers in the data.

4.5.1 Linear Test Operational Efficiency and Firm Performance

The relationship between operational efficiency and firm performance was tested for linearity using scatter plot representations. Results are presented in Figure 4.

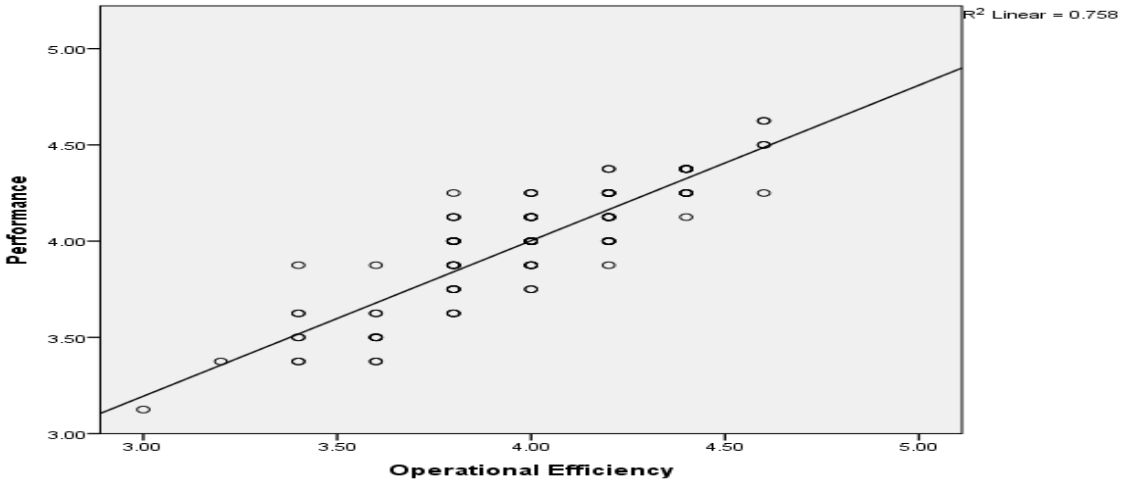

Figure 4: Linearity Test for Operational Efficiency and Firm Performance

From the findings, the relationship between operational efficiency and firm performance was found to be linear as shown in Figure 4. Therefore, there is a linear relationship between the dependent variable firm performance and operational efficiency.

4.5.2 Heteroscedasticity

Estimating a regression model without accounting for heteroscedasticity may lead to biased parameter estimates. To test for heteroscedasticity it was necessary to make a hypothesis in respect to the error variance and test the error variances to confirm or reject the hypothesis. For the purposes of applying the Breusch-Pagan/Cook-Weisberg test, a null hypothesis (H_0) of this was formulated that the error variance is not heteroscedastic while the alternative hypothesis (H_a) was that the error variance is heteroscedastic. The Breusch-Pagan/Cook-Weisberg test models the error variance as $\sigma^2_i=\sigma^2h(z'_i\alpha)$ where z_i is a vector of the independent variables. It tests $H_0:\alpha=0$ versus $H_a:\alpha\neq0$. Table 4.21 shows the results obtained when the Breusch-Pagan/Cook-Weisberg test was run.

Table 9: Results of Breusch-Pagan / Cook-Weisberg Test for Heteroscedasticity

H_o: Constant variance		
chi2(1)	=	0.01
Prob > chi2	=	0.9186

Source: Survey Data, 2017

The results in Table 9 indicate that the p value is greater than 0.05 (0.9186) and so the null hypothesis set up for this test is supported. It was found that the variables under this study did not

suffer from heteroscedasticity and so the required regression analysis for this study could be carried out the results being distorted.

4.5.3 Multicollinearity

Tests for multicollinearity were carried out because in severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed Field, (2009). Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors. Multicollinearity was assessed in this study using the Tolerance and Variance Inflation Factor. The rule of thumb is that if VIF is greater than 5 and tolerance value less than 0.2, then the data is suffering from multicollinearity. The results of the tests of multicollinearity are presented in Table 10.

Table 10: Multicollinearity Test on Business Process Outsourcing and Operational Efficiency on Performance

	Collinearity Statistics	
	Tolerance	**VIF**
Business Process Outsourcing	0.477	2.096
Operational Efficiency	0.473	2.116

Source: ***Survey Data, 2017***

Collinearity statistics (Table 10) indicated a Variance Inflation Factor (VIF) < 5 and Tolerance > 0.2, an indication that the variables were not highly correlated, hence no existence of Multicollinearity. This is an indication of the suitability of the variables for multiple regression.

4.6 Hypothesis Testing

H_A: Operational efficiency has a significant intervening effect on the relationship between business process outsourcing and performance of oil and gas distribution firms in Kenya.

The Baron and Kenny (1986) approach was applied for the purpose of testing this hypothesis. Mediation/intervening effect is confirmed when the following four conditions are fulfilled:

1. The independent variable must be significantly related to the dependent variable in the absence of the intervening variable.
2. The independent variable must be significantly related to the intervening variable.
3. The intervening variable must be significantly related to the dependent variable.
4. When the effect of the mediating variable on the dependent variable is controlled, the effect of the independent variable on the dependent variable should not be significant. The outcome of the regression analyses yielded results that are presented in table 11.

Table 11: Regression Results for the Intervening Effect of Operational Efficiency on the Relationship between BPO and Performance

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
1	BPO	.897	.804	.802	.13474
2	BPO	.721	.520	.515	.22738
3	Operational efficiency	.871	.758	.756	.14981
4	BPO and Operational efficiency	.953	.909	.907	.09242

ANOVA

Model			Sum of Squares	df	Mean Square	F	Sig.
1	BPO	Regression	8.048	1	8.048	443.275	.000
		Residual	1.961	108	.018		
		Total	10.009	109			
2	BPO	Regression	6.039	1	6.039	116.800	.000
		Residual	5.584	108	.052		
		Total	11.622	109			
3	Operational Efficiency	Regression	7.585	1	7.585	337.937	.000
		Residual	2.424	108	.022		
		Total	10.009	109			
4	BPO and Operational Efficiency	Regression	.011	2	.005	4.027	.026
		Residual	.049	37	.001		
		Total	.060	39			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.526	.165		3.187	.002
	BPO	.868	.041	.897	21.054	.000
2	(Constant)	.985	.279		3.535	.001
	BPO	.752	.070	.721	10.807	.000
3	(Constant)	.771	.176		4.385	.000
	Operational Efficiency	.808	.044	.871	18.383	.000
4	(Constant)	.100	.120		.833	.407
	BPO	.543	.041	.560	1.296	.060
	Operational Efficiency	.433	.039	.467	11.070	.000

The results in Table 11 show that in step one the influence of BPO on performance is significant (R^2=0.804, F=443.275, p<0.05; β=0.868, t=21.054, p<0.05), implying that 86.8% of the change in Performance is attributable to one unit change in BPO. 80.4% of the variation in performance is accounted for by BPO. The first mediation condition which states that the independent variable should be significantly related to the dependent variable in the absence of the intervening variable is thus satisfied. The second step as presented in Table 10 indicates that the influence of BPO on operations efficiency is significant (R^2=0.520, F=116.800, p<0.05; β=0.752, t=10.807, p<0.05), thus satisfying the second condition which states that the independent variable should be significantly related to the intervening variable.

The third step as presented in table 11 revealed that the influence of operational efficiency on performance was significant (R^2=0.756, F=337.937, p<0.05; β=0.808, t=18.383, p<0.05), thus

satisfying the third condition which states that the intervening variable should be significantly related to the dependent variable. The fourth step as presented in table 10 revealed that the influence of the independent variable (BPO) on the dependent variable (Performance) was insignificant in the presence of the intervening variable, operational efficiency (R^2=0.909, F=4.027, $p<0.05$; β=0.543, t=1.296, $p>0.05$), and thus satisfying the fourth condition which states that the effect of the independent variable on the dependent variable should be insignificant in the presence of the intervening variable.

The regression results thus satisfied all the four conditions that should be met for an intervening effect to be confirmed and therefore it can be concluded that operational efficiency has a significant intervening effect on the relationship between business process outsourcing and performance of oil and gas distribution firms in Kenya. In other words, BPO generates operational efficiency which in turn increase performance of oil and gas distribution firms in Kenya. This was full mediation. Thus, the hypothesis that operational efficiency has a significant intervening effect on the relationship between business process outsourcing and performance was supported.

The literature reviewed in this study concur with the finding of the study. Kale, Meneghetti and Shahrur (2013) opined that a firm's operational effectiveness in delivering products and services to clients may have a possible intervening effect on the relationship between BPO and performance. Dess, Lumpkin, Eisner and McNamara (2013) asserted that the alignment between BPO, operational efficiency and firm performance is critical in the outsourcing process hence the need to develop strategic outsourcing and its future core capabilities, firm structure and competitive position and adjust these to the long-term business strategy.

5.0 Conclusion

The study has shown that the BPO contribute significantly to performance. The results of the study demonstrate that although BPO significantly influence the performance of oil and gas distribution firms in the, they are intervened by operational efficiency. Managers must therefore, recognize this interaction and formulate their promotion strategies accordingly. Managers must continuously lay outsourcing strategies on logistics and distribution finance and accounting, human resources, ICT services, procurement and supply chain

6.0 Recommendation

Based on the study findings, the following recommendation was drawn: Operational efficiency policies was found to have an intervening effect on BPO and firm performance. The alignment between BPO, operational efficiency and firm performance is critical in the outsourcing process hence the need to develop strategic outsourcing and its future core capabilities, firm structure and competitive position and adjust these to the long-term business strategy. Operational Efficiency (OE) focuses on the identification of several strategies and techniques to deliver products and services to clients in a cost effective and timely manner without compromising on quality thus improving firm performance the concept of operational efficiency has become the center of academic research due to an upsurge in competition and increasing uncertain business environment. Studies indicate that more than 10 per cent of production capacity may be locked up in process complexity and inefficiency leading to rising investment and operational costs affecting profitability and performance.

7.0 Reference

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