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EDITORIAL NOTE

This is the first volume second issue of the Pan-African Journal of Business Management (PAJBM) hosted at the Faculty of Business Management at Open University of Tanzania. This second issue includes a variety of articles covering free cash flows, agency costs and performance of firms, the influence of economic growth, product diversification, public expenditure and social capital, public expenditure, and social capital for family business sustainability. All areas are of interest to scholars in Africa. The researchers in this issue deal with conditions in both Tanzania and Kenya.

The Editorial Board hopes that the readers will find the articles useful and contribute to the academic knowledge in the respective areas.

Prof. Jan-Erik Jaensson
Chief Editor

General information

The Journal is produced by the Faculty of Business Management at The Open University of Tanzania. It will accept theoretical, conceptual and research-based papers in a wide range of topics on business management concerning Africa. It also accepts cases, book reviews and summaries of dissertations.

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Free Cash Flows, Agency Costs and Performance of Firms Listed at the Nairobi Securities Exchange

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Abstract: *Firm performance is affected by various factors, both internal and external. Internal factors include firm characteristics such as firm size, age, liquidity, leverage, profitability, growth prospects among others. External factors include regulation, agency costs and general macro-economic factors. This paper sought to establish the influence of agency costs on the relationship between free cash flows and firm performance. The second objective was to assess the influence of agency costs on the relationship between free cash flows and performance of firms listed at the Nairobi securities exchange. The study used both primary data and secondary panel data which were obtained from all firms listed at the NSE for the period 2006 to 2015. Panel data and simple regression analyses using OLS were employed in the study. Results indicate that free cash flows have a significant positive relationship with firm performance, and, agency costs have a positive significant moderating effect on the relationship between free cash flows and firm performance. All the predictor variables had a joint positive and significant effect on performance. The main academic contribution of the study is that free cash flows have a positive relationship with firm performance and that agency costs; and specifically, firm monitoring and corporate governance has a positive and significant effect on the performance of firms listed at the NSE. Firm managers, shareholders, practitioners, the government and other regulators should, therefore, enhance firm monitoring and corporate governance because the benefits derived from investing therein seem to outweigh the costs.*

Keywords: Free cash flows, Agency costs, Firm Performance.

Introduction

The separation of firm proprietorship and management in public firms causes a conflict of interests between firm owners (principals) and firm managers (agents). While the primary incentive of firm owners is to maximize their wealth by improving firm value, the goals of firm managers are varied and may include enrichment of personal wealth and status. This varying of interests sometimes leads managers to engage in insider dealings where there are no mechanisms for effective monitoring, validation and approving of managerial decisions (Wang, 2010).

Jensen and Meckling (1976) argue that agents resort to extraction of private benefits from firms that they manage if they are not shareholders. This has the effect of raising agency costs which are manifested through inefficient investment choices and inefficient or insufficient effort expended by firm managers. The rise in agency costs eventually affects firm performance (Tirole, 1986). Brush, Bromiley and Hendrickx (2000) also show that management's self-interest

motivates wastage and inefficiency in the presence of free cash flows (FCF) which similarly increases agency costs and eventually affects firm performance.

Brush et al. (2000) observe that agency theory examines how management's behaviour could be focused on shareholders' interests by reducing agency costs. Jensen and Meckling (1976) and Jensen (1986) describe three forms of agency costs. First, the monitoring cost of management's actions; second, the bonding cost of restrictive covenants; and lastly, residual loss due to suboptimal management's decisions. The goal of management is to maximize personal wealth instead of shareholders' wealth. This self-interest encourages wastage when FCF are present; hence, implying the FCF hypothesis. Nyong'o (2000) observes that Kenya has experienced turbulent times with regard to the agency problem and its corporate governance (CG) practices in the last two and half decades, resulting in generally low corporate profits across the economy. Ongore and K'Obonyo (2011) also note that agency problems were fairly well replicated globally during the same period. This study, based on the agency theory and the FCF hypothesis, aims at exploring how agency costs influence the relationship between FCF and performance of firms listed at the Nairobi Securities Exchange (NSE).

Free Cash Flows

The concept of FCF, introduced by Jensen (1986), refers to the sum of the surplus funds available after funding profitable projects. Wang (2010) observes that the original definition of FCF, according to Jensen (1986) is net operating income less capital expenditure (CAPEX), inventory cost and dividend payment. On the other hand, Brealey, Myers and Allen (2005) describe FCF as net income plus depreciation and amortization, less CAPEX, less change in non-cash working capital, plus net borrowing.

Richardson (2006) argues that firms that have excess funds risk ending up wasting them in unprofitable projects and that since FCF is financial resources at the management's discretion to allocate, it is also called idle cash flows. FCF represents the cash that a firm is able to generate after setting aside cash required to maintain or expand its asset base.

Agency Costs

Agency costs refer to the cost that a firm incurs due to inconsistent interests of management and shareholders (Berle and Means, 1932). Jensen and Meckling (1976) point out that the incomplete contractual relationship between the principal (shareholders) and the agent (management) might cause agency problem. The agency problem caused by the management would result in a loss in shareholders' wealth in the following ways: first, management, from the aspect of self-interest motive, would increase perquisite consumption and shirking behaviour, which in turn leads to an increase in agency costs. Second, management might not choose the highest Net Present Value (NPV) investment project, but the one that maximizes their own interest, which would expose shareholders to unnecessary investment risk.

Tirole (1986) argues that there are two important manifestations of agency costs: first, inefficient investment choices; and second, inefficient or insufficient effort expended by managers. Agency cost measures should, therefore, depend on inefficient asset utilization (because of poor investments), excessive production cost and wasteful managerial perks (resulting in higher

expenses), and insufficient effort exerted by management (resulting in lower revenues and earnings). The efficiency of asset utilization is measured by asset turnover ratio which is defined as the ratio of sales to assets. This reflects how management uses the assets under their control for revenue generation. Production cost efficiency, on the other hand, is measured as operating expenses divided by sales.

Firm Performance

Gleason and Barnum (1982) define firm performance as a firm's ability to achieve planned results as measured against its intended outputs. It encompasses outcomes related to financial performance, market performance and shareholder return. On the other hand, Daft (1995) defines firm performance as the firm's ability to attain its goals by using resources in an efficient and effective manner.

The Balanced Score Card (BSC) was developed by Kaplan and Norton (2001) and it measures financial performance, customer satisfaction, efficiency of internal business processes and learning and growth perspectives of performance. The sustainable BSC has been applied to integrate the environmental and social aspects into successful implementation of both conventional corporate strategy and explicit corporate sustainability strategies (Figge, Hanh, Schaltegger and Wagner, 2002).

Research Problem

The FCF hypothesis implies that a higher level of FCF could lead to more unnecessary administrative waste and inefficiency, negatively impacting on firm performance. The agency problem, the vice of managerial fraud, accounting irregularities and other governance abuses is a global phenomenon, afflicting many firms including Enron Corporation in the United States of America (USA), China Aviation, and Uchumi Supermarkets in Kenya (Ongore and K'Obonyo, 2011). Frentrup (2003) has reported that there is still lack of concurrence on identifying the extent and dealing with the complexities that are inherent in CG processes. Waithaka, Ngugi, Aiyabei, Itunga and Kirago (2012) note that FCF caused conflict between management and shareholders which in turn affected the performance of firms listed at the NSE.

Globally, empirical literature shows mixed findings regarding FCF and firm performance. For instance, Nekhili, Amar, Chtioui and Lakhali (2014) carried out a study in Australia and found increased agency costs emanating from the presence of FCF. Similarly, Brush et al. (2000) conducted a study in the USA and found that weak CG caused inefficiency in the allocation of FCF. While these findings support the argument that FCF negatively affects firm performance; on the contrary, Gregory (2005), whose study was conducted in the UK found that mergers with a higher level of FCF would perform better than those with a lower FCF. Locally, Wambua (2013) found a positive correlation between FCF and performance of firms listed at the NSE, which again invalidates the hypothesis that there is a negative relationship between FCF and firm performance.

Wang (2010) and Lin and Lin (2014) excluded CAPEX and net borrowings in their operationalization of FCF. This study included both CAPEX and net borrowings in the definition of FCF. Additionally, unlike Njuguna and Moronge (2013) who used asset utilization efficiency

as the sole measure of agency costs, this study also incorporated production cost efficiency and also developed a monitoring index to measure agency costs that arise out of monitoring management's actions. These measures of FCF and agency costs are more robust. Studies such as Brush et al. (2000) and Wambua (2013) used financial performance outcomes only in measuring firm performance. Apart from financial performance outcomes, this study incorporated non-financial outcomes (BSC and non-market performance measures) because non-financial aspects such as customer satisfaction, efficiency of internal business processes, and learning and growth perspectives are an integral part of the overall firm performance.

Literature Review

Free Cash Flows and Firm Performance

Wang (2010) studied the impacts of FCF and agency costs on firm performance with empirical data obtained from Taiwan Stock Market and Taiwan Economic Journal for the period 2002 to 2007. Using 505 firms as the sample, the study used the variable of standard FCF to measure FCF and six proxy variables to measure agency costs. Descriptive statistics, correlations and regression analyses were employed in the study and found significant effects of FCF on agency costs. The effects were however contrary; on one hand, FCF could increase the incentive for management to increase perquisite consumption and shirking, thus leading to an increase in agency costs and lower firm performance. On the other hand, he found that FCF is generated due to management's operating efficiency such that there may be a negative relationship between FCF and agency costs. However, in his definition of FCF, Wang (2010) did not take into account CAPEX and net borrowings, which are critical in the FCF definition.

These findings are consistent with results by Gregory (2005) who studied the long run abnormal performance of United Kingdom (UK) acquirers and the relationship between FCF and firm performance. In the study, Gregory (2005) found that mergers with a higher level of FCF would perform better than those with a lower FCF. In testing the hypothesis, the study used "long-term returns" and also "analyzed announcement month return". However, the study did not look at daily returns around announcement, which could probably yield different results. Furthermore, the study focused on financial performance outcomes only.

Brush et al. (2000) investigated the agency argument that sales growth in firms with FCF is less profitable than sales growth for firms with lower FCF. Data were obtained from USA firms; covering eight years, 1988 to 1995 and used Tobin's Q to identify whether firms have positive NPV projects available to determine FCF, and returns to shareholders as a performance measure. As cited by Bromiley (1990), it is erroneous to use shareholder returns as a measure of performance because it assumes capital market efficiency, which argues that the returns largely reflect surprises to the market. Thus, if the market anticipates a firm's sales growth and profitability, even highly profitable sales growth should not show up in shareholder returns in the period in which it occurred. The study found that firms with FCF gain less from sales growth than firms without FCF. The study also found that different types of strong governance affect performance and sales growth in different ways: owner-managed firms with FCF use it to grow faster than firms without FCF (average of 5.7% compared to averages around 4.5%). The

findings by Wang (2010) and Gregory (2005) on the one hand and Brush et al. (2000) on the other hand reveal inconsistencies. These contradictions indicate that the relationship between FCF and firm performance is still unresolved.

Free Cash Flows, Agency Costs and Firm Performance

Lin and Lin (2014) investigated the agency costs of FCF and bidders' long-run takeover performance in Australia, using data for the period 1993 to 2000. Using a sample of 556 acquiring firms, the study introduced two proxies of FCF; excess cash holdings and excess accounting cash flow and tested the relationship between the level of excess cash and bidders' long-run post-acquisition performance. The results indicated that the level of excess cash holdings did not provide a significant explanation for the cross-sectional variation in long-run post-acquisition performance. Results from the flow measure of cash indicated that the acquisitions carried out by bidders with excess accounting cash flow did not increase agency costs and therefore were not value decreasing. Instead, bidders with higher excess accounting cash flows had better long-run post-acquisition performance. This finding is contrary to the argument that substantial FCF increases agency costs which subsequently negatively impacts on firm performance. However, Lin and Lin's (2014) definition of FCF ignores CAPEX and net borrowings which are critical variables.

Nekhili et al. (2014) analyzed the moderating effect of CG and ownership features in lessening earnings management practices when there is FCF. Using a sample of 85 French listed firms during the period 2001 to 2010, the results highlight the opportunistic behaviour of firm managers in the presence of high FCF. The study measured FCF by multiplying the retained cash flows by the inverse of Tobin's Q. However, like in Lin and Lin (2014), CAPEX and net borrowings were omitted in the definition of FCF. The results show that in the presence of FCF, the propensity of corporate executives to use discretionary accruals depends on firm ownership and the effectiveness of governance mechanisms. The findings show that managers engage in earnings management practices that increase reported earnings, which implies that there are increased agency costs deriving from the presence of FCF, consequently negatively affecting firm performance.

Hypothesis of the Study

H1: Free cash flows have a significant effect on the performance of firms listed at the Nairobi securities exchange.

H2: Agency costs have a significant moderating effect on the relationship between free cash flows and performance of firms listed at the Nairobi securities exchange.

Research Methodology, Data Analysis and Findings

The positivist approach effectively rendered itself to this study, because the study is centered on existing theory and it develops hypotheses which can be verified. The research design adopted for this study was both cross-sectional and longitudinal descriptive survey of all firms listed at the NSE. Secondary data were obtained from published financial statements over a multiple periods of time; ranging from 2006 to 2015 (longitudinal data). Secondary data from firms listed

at the NSE was obtained from published audited financial statements, obtained from the NSE. Yearly data covering the entire study period was collected so as to ensure that enough degrees of freedom in the models to be estimated were available.

Data was analyzed using inferential statistics generated from statistical software, using 95% confidence interval as in Aiken and West (1991). The study also employed panel data regression analysis using the OLS method where the data includes time series and cross-sectional data that is pooled into a panel data set and estimated using panel data regression.

Effect of Free Cash Flows on Firm Performance

In establishing the effect of FCF on firm performance FCF is the independent variable, while firm performance is the dependent variable. In the specification, the standard errors are clustered by firm and year. The regression model for hypothesis 1 is as follows:

$$\bar{Q}_{it} = \alpha + \beta FCF_{it} + \epsilon \text{ ----- (1a)}$$

$$\bar{Q} = \alpha + \beta FCF + \epsilon \text{ ----- (1b)}$$

Where: \bar{Q} = Firm performance measures. Financial performance measures employed Tobin's Q for \bar{Q}_{it} in equation 1a while non-financial measures used \bar{Q} in equation 1b. Non-financial performance measures entailed customer satisfaction; efficiency of internal business processes; learning and growth perspectives; and, non-market perspectives; α = Constant term; β = Beta Coefficient; FCF_{it} = Free cash flows measure in panel data; FCF = free cash flows measure in ANOVA and ϵ = Error term. Firm performance measures were entered into the model one at a time. \bar{Q}_{it} and \bar{Q} are therefore not composite measures of performance.

Agency Costs on the Relationship between Free Cash Flows and Firm Performance

In analyzing hypothesis 2, the relevant variables are FCF (independent variable), agency costs (moderating variable) and firm performance (dependent variable). Moderating effects were examined using hierarchical (stepwise) multiple regression analysis. According to Baron and Kenny (1986), moderator variables have certain distinctive characteristics such as; they are independent, exogenous to criterion variables and often uncorrelated to either the predictor or the criterion variables.

The regression model is as follows:

$$\bar{Q}_{it} = \alpha + \beta_1 FCF_{it} + \beta_2 PCE_{it} + \beta_3 AUE_{it} + (\beta_4 PCE_{it} + \beta_5 AUE_{it}) * (\beta_6 FCF_{it}) + \epsilon_{it} \text{ ---- (2a)}$$

$$\bar{Q} = \alpha + \beta_1 FCF + \beta_2 FMC + (\beta_3 FMC) * (\beta_4 FCF) + \epsilon \text{ ----- (2b)}$$

Where: PCE_{it} = Production cost efficiency;
 AUE_{it} = Asset utilization efficiency;
 FMC = Firm monitoring and governance index

Equation 2a represents the moderation model for panel data while equation 2b represents the moderation equation for cross-sectional data. To avoid potential high multicollinearity with the interaction term (Agency costs), the variables were centered and an interaction term added.

Table 1. Summary of Statistical Tests of Hypotheses

Objective	Hypothesis	Analytical Model	Interpretation
i. To establish the relationship between FCF and performance of firms listed at the NSE	H₁ : FCF have a significant effect on the performance of firms listed at the NSE	<ul style="list-style-type: none"> ANOVA regression model Panel data regression model Test of assumption (normality and multi-collinearity) 	<ul style="list-style-type: none"> Relationship exists if β is significant Relationship will be determined based on R^2
ii. To assess the influence of agency costs on the relationship between FCF and performance of firms listed at the NSE	H₂ : Agency costs have a significant moderating effect on the relationship between FCF and performance of firms listed at the NSE	<ul style="list-style-type: none"> ANOVA regression model Panel data regression model Test of assumption (normality and multi-collinearity) 	<ul style="list-style-type: none"> The intercept of the regression model will be used to tests the influence of agency cost the relationship between free cash flow and firm performance. Regression co-efficient and R^2 will be used to affirm the effect of agency cost on the relationship between free cash flow and firm performance.

The study targeted 63 firms listed at the NSE but three firms were left out of the study. Uchumi was left out because it was delisted for two years before being allowed back in 2015. Frame Tree Group and Home Africa were not included because they were listed at NSE in 2013 and therefore data for some of the study years were missing. From the 60 firms, three managers were targeted bringing the total sample size to 180. A response rate of 81% was achieved, which according to Baruch and Holtom (2008) is good.

Table 2. Responses According to Sector

Sector	Number	%
Banking	28	19.3
Insurance	25	17.2
Commercial and Allied	24	16.6
Manufacturing and Allied	20	13.8
Agricultural	12	8.3
Energy and petroleum	11	7.6
Construction and allied	10	6.9
Automobiles and Accessories	9	6.2
Telecommunication and Technology	3	2.1
Real Estate Investment Trust	3	2.1
Total	145	100.0

Pre-estimation Diagnostics

The study used OLS to estimate regression models 1 through 2. The use of OLS is based on normality, linearity, internal consistency and sampling adequacy of variables used in the regression model. Therefore normality, linearity and internal consistency of these variables were required for the application of OLS. To test whether the variables were normally distributed Shapiro Wilk test for normality was used. The test has a null hypothesis that the data does not come from a population that is normally distributed. The test statistics for normality of each variable are shown in table 3.

Table 3. Normality Test

Variable	Test Statistic	
	Z statistic	P value
Free cash flows	1.751	0.070
Agency costs	1.138	0.128
Firm characteristics	0.710	0.239

Table 3 shows that the p-values for all the variables were greater than 0.05. Therefore, the alternative hypothesis that the variables were normally distributed could not be rejected at 5 percent level of significance. Therefore, OLS could be applied on the data and reliability tests requiring normality of the data such as t-tests and p-values could reliably be used. Field (2009) recommends the use of a visual inspection of histograms or Quantile-Quantile (Q-Q) plots to supplement use of tables and numbers. These plots are presented in Figure 1, Figure 2 and Figure 3.

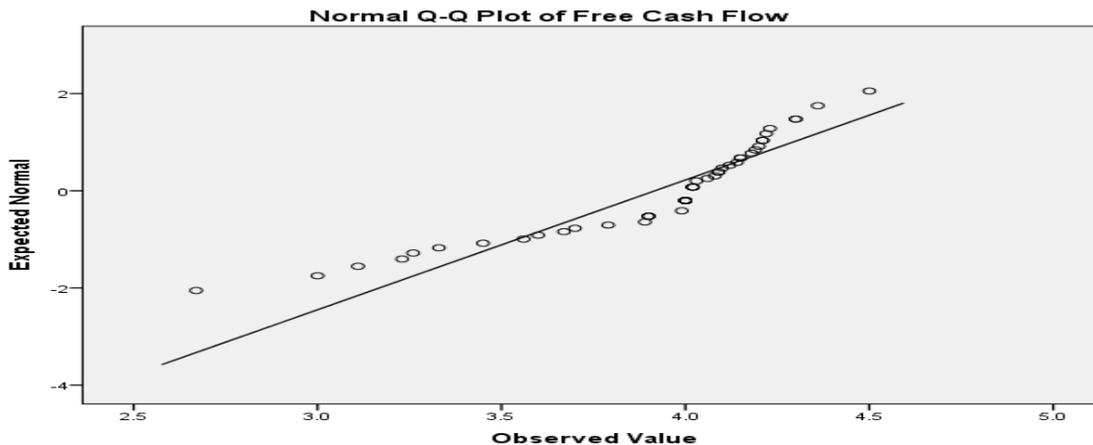


Figure 1. Q-Q Plot of Free Cash Flows



Figure 2. Q-Q Plot of Agency Costs

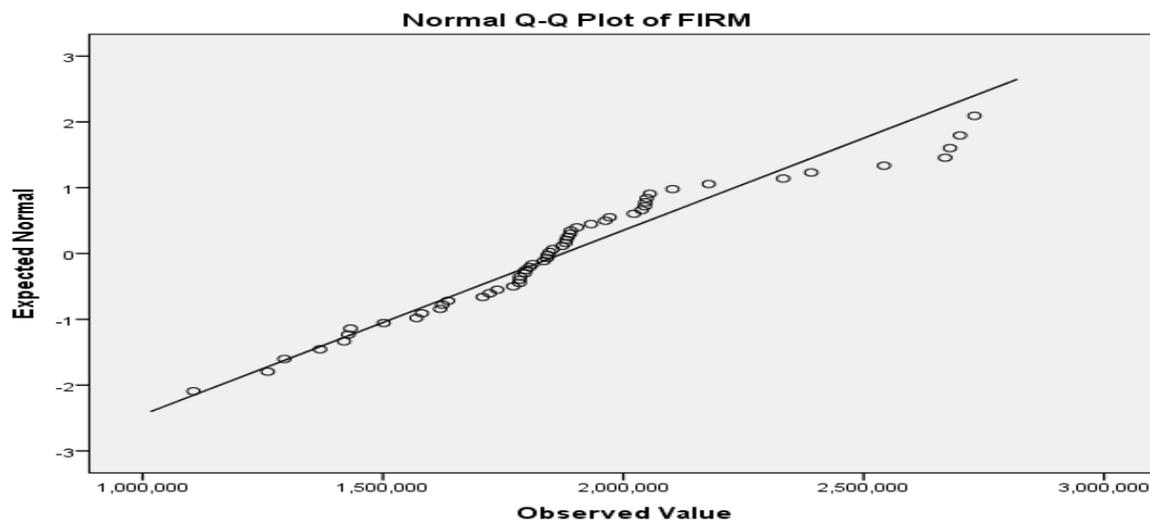


Figure 3. Q-Q Plot of Firm Performance

Reliability Tests

Reliability tests were carried out through Cronbach's alpha tests in Statistical Package for the Social Sciences (SPSS) with the results presented below. The study results reveal that average reliability scores for the variables were 0.745 which is more than 0.700 the accepted score for reliability, thereby showing that the research instrument was deemed good as supported by Bonett and Wright (2014).

Table 4. Reliability Scores for Individual Variables

Variable Item	Cronbach's Alpha
Free Cash Flow	0.738
Agency Costs	0.745
Firm Performance	0.695

Test for Linearity

To test whether the variables were linearly associated, correlation analysis was used. The test had a null hypothesis of no linear association. Table 5 below shows the test statistics for linear associations between the predictor variables and firm performance (explanatory variable).

Table 5. Linearity Test

Reference Variable: Firm Performance	Correlation Coefficient	P-Value
Free cash flows	0.539	0.000
Agency costs	0.530	0.000

Table 5 shows that p-values for the correlation coefficients are less than 0.01. Therefore, all the predictor variables have a significant positive correlation with firm performance at 5 percent level of significance. That is; the predictor variables and firm performance move in the same direction implying a linear relationship. The significant and positive correlation implies that the signage coefficients of the predictor variables in the simple regression models are positive.

Bartlett's Test of Internal Consistency

The study tested the consistency of the items used in the structured questionnaire to measure the various variables used in the study using Bartlett's test of sphericity. The test has a null hypothesis of no internal consistency (intercorrelated). Failure to reject the null hypothesis means that the principal components that measure a particular section have to be found through principal component analysis. However, rejection of the null hypothesis means that all the items are internally consistent and their composites can be used to measure the variables concerned. The test statistics for each of the sections involved in the linear regression analysis are shown in table 6.

Table 6. Bartlett's Test

Variable	Degrees of freedom	Test statistic	
		Chi-Square	P value
Free cash flows	21	447.7	0.000
Agency costs	10	243.1	0.000
Firm characteristics	10	154.3	0.000
Firm Performance	10	279.1	0.000

Table 6 above shows that the null hypothesis that the variables in question are not intercorrelated in each of the sections is rejected at 5per cent level of significance. This implies that there is internal consistency between the items of each section in the structured questionnaire. Therefore, simple means or summations of Likert items from each dimension of the structured questionnaire could be used as composites for each variable without the use of principal component analysis.

Multicollinearity Test

Multicollinearity occurs if there is a strong relationship between two or more independent variables in a regression model. To test whether the level of multicollinearity in the estimated

models could be tolerated, Variance Inflation Factor (VIF) was used. The rule of the thumb is that a value of VIF that is less than 10 means that the level of multicollinearity can be tolerated (Robinson and Schumacker, 2009). Since multicollinearity test is only applicable for multivariate regressions, only VIF statistics are reported since the regressions involve more than one independent variable.

Table 7. Multicollinearity Test

Variables	VIF
Free Cash Flows	2.26
Asset Utilization Efficiency	1.46
Production Cost Efficiency	1.15
Financial Performance	2.35

Table 7 shows that the VIF for all the models estimated ranged from 1.09 to 2.53 showing that the VIF results are within the acceptable ranges of 1 to 10. This shows that the variables did not exhibit multicollinearity and regression analysis could then be carried out.

Free Cash Flows and Performance of Firms Listed at NSE

The study sought to identify the effect of FCF on firm performance. In the first instance, tests were carried out to determine the type of model to be used (random or fixed effects). This was carried out through Chaw and Hausman tests with results indicating significance of p-value less than 0.05 thus allowing the use of fixed effect panel modelling.

Table 8. Analysis for Free Cash Flows and Firm Performance

Test	Number	Statistics	Statistics Value	Degree of Freedom	Sig
Chaw	600	F	3.5280	(104,593)	0.003
Hausman	600	Chi-Square	42.551	8	0.00
Variable	Coefficient	p-values			
FCF	0.235	0.03			
F-Statistic	Prob > Chi2 = 0.0016				
R-Squared	28%				
Model	R	R ²	Adjusted R ²	Standard Error	
1	0.594	0.352836	0.28462	0.946273	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	10.731	1	10.731	11.897	0.001
Residual	129.838	144	0.902		
Total	140.569	145			
Model	Unstandardized Coefficients		Std Coefficients	t	Sig
	B	Standard Error	Beta		
Constant	.044	.118		-.371	.711
FCF	0.201	0.060	1.96	3.332	0.001

The results in Table 8 indicate that FCF explains 35.3% and 28.5% of the variability in firm performance for primary data and panel data respectively. This contribution is significant at p-value = 0.001, meaning that 64.7% and 71.5% variation in performance respectively is explained by other factors that are not captured by the study. The Table shows that the F statistic = 11.897 which is significant, meaning that the model was robust enough to explain the relationship. Therefore the study rejected the null hypothesis.

$$\bar{Q} = .044 + 0.201FCF + \epsilon$$

Where: \bar{Q}_{it} = Firm Performance; FCF=Free Cash Flows; and, ϵ = Error term

According to the statistics in table 8, the model for panel data analysis and ANOVA is significant thus showing that the model fits the regression analysis. This is indicated by p-values of 0.0016 and 0.001 respectively. There is a significant direct relationship between FCF and performance during the years 2006 to 2015. The results indicate that firms with higher FCF perform better than the firms with lower FCF. There is a positive relationship between FCF and firm performance. These results are inconsistent with the null hypothesis that states that there is no significant relationship between FCF and performance of firms listed at NSE. The findings show that there is a positive significant relationship between FCF and performance measurement criteria line Tobin Q and other non-financial measures. The analysis shows that increasing FCF disposes more resources to firm managers and their good usage of this money contributes to the increasing income and profits.

Hypothesis 1a: Free Cash flows have a Significant Effect on Customer Perspective

Table 9. Relationship between Free Cash Flows and Customer Perspective

Model	R	R ²	Adjusted R ²	Standard Error	
1	0.469	0.219	0.1786	0.56328	
Model	Sum of Squares	DF	Mean Square	F	Sig
Regression	9.734	1	9.734	10.792	0.023
Residual	101.838	144	0.902		
Total	111.572	145			
Model	Unstandardized Coefficients		Std Coefficients		
	B	Standard Error	Beta		
Constant	0.21	.118	0.23	0.12	0.06
FCF	0.06	0.023	1.76	3.332	0.042

The results in Table 9 show that FCF explains 21.9% of the variability in customer perspective (R² = 0.219 with 78.1% being explained by other variables not captured in the study. The regression model is significant at F = 10.792 with p-value = 0.023 which is lower than the cutoff p-value of 0.05. This means that the null hypothesis was rejected. FCF has a significant effect on

customer perspective aspect of non-financial performance. The regression model that explains the variation in customer perspective as a consequence of direct influence of FCF is as shown below:

$$Y=0.21+0.06FCF + \epsilon$$

Where: Y= Firm performance (customer perspective); FCF= Free cash flows; and, ϵ = Error term

Hypothesis 1b: Free Cash flows have a Significant Effect on Internal Business Processes

Table 10. Relationship between Free Cash Flows and Internal Business Processes

Model	R	R ²	Adjusted R ²	Std Error	
1	0.321	0.10304	0.8145	0.108	
Model	Sum of Squares	DF	Mean Square	F	Sig
Regression	10.349	1	10.349	16.5372	0.031
Residual	90.123	144	0.6258		
Total	100.472	145			
Model	Unstandardized Coefficients		Standard Coefficients		
	B	Standard Error	Beta		
Constant	.183	.075			.711
FCF	0.141	0.076	1.76	2.05	0.067

The results in Table 10 show that FCF explains 10.3% of the variability in efficiency of internal business processes ($R^2 = 0.10304$ with 89.7% being explained by other variables not captured in the study. The regression model is at $F = 16.5372$ with $p\text{-value} = 0.031$ which is lower than the cut off $p\text{-value}$ of 0.05. This again means that the null hypothesis was rejected. FCF has a significant effect on internal business processes aspect of non-financial performance. The regression model that explains the variation in efficiency of internal business processes as a consequence of direct influence of FCF is as shown below:

$Y=0.183+0.141FCF + \epsilon$: Where: Y= Firm performance (efficiency of internal business processes); FCF= Free cash flows; and, ϵ = Error term

Hypothesis 1c: Free Cash flows have a Significant Effect on Learning and Growth

Table 11. Relationship between Free Cash Flows and Learning and Growth

Model	R	R ²	Adjusted R ²	Std Error	
1	0.738	0.5446	0.4983	0.6856	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	11.564	1	11.564	14.082	0.034
Residual	118.258	144	0.8212		
Total	129.822	145			
Model	Unstandardized Coefficients		Standard Coefficients		
	B	Std Error	Beta		
Constant	0.245	0.123		2.13	0.645
FCF	0.11	0.052	1.684	1.954	0.041

Table 11 results reveal that FCF explains 54.5% of the variability in learning and growth perspective ($R^2 = 0.5446$ with 45.5% being explained by other variables not captured in the study). The regression model is at $F = 14.082$ with $p\text{-value} = 0.034$ which is lower than the cut off $p\text{-value}$ of 0.05. This again means that the null hypothesis was rejected. FCF has a significant effect on learning and growth perspective aspect of non-financial performance. The regression model that explains the variation in learning and growth perspective as a consequence of direct influence of FCF is as shown below:

$$Y = 0.245 + 0.11FCF + \epsilon$$

Y= Firm performance (Learning and growth perspective); FCF= Free cash flow; and, ϵ = Error term.

Hypothesis 1d: Free cash flows have a Significant Effect on Non-market Perspective

Table 12. Relationship between Free Cash flows and Non-Market Perspective

Model	R	R ²	Adjusted R ²	Std Error	
1	0.521	0.2714	0.213	0.4672	
Model	Sum of Squares	DF	Mean of Square	F	Sig
Regression	11.443	1	11.443	13.318	0.42
Residual	123.726	144	0.8592		
Total	135.169	145			
Model	Unstandardized Coefficients		Std Coefficients		
	B	Standard Error	Beta		
Constant	0.207	.09		3.067	.045
FCF	0.128	0.035	1.87	2.31	0.08

Table 12 results reveal that FCF explains 27.14% of the variability in non-market perspective ($R^2 = 0.2714$ with 72.86% being explained by other variables not captured in the study. The regression model is at $F = 13.318$ with $p\text{-value} = 0.42$ which is higher than the cut off $p\text{-value}$ of 0.05. This means that the null hypothesis was not rejected. FCF has no significant effect on non-market perspective aspect of non-financial performance. The regression model that explains the variation in non-market perspective as a consequence of direct influence of FCF is as shown below:

$$Y = 0.207 + 0.128FCF + \epsilon$$

Y= Firm performance; FCF= Free cash flows; and, ϵ = Error term

Free Cash Flows, Agency Costs and Firm Performance

The study sought to identify the effect of agency costs on the relationship between FCF and firm performance. First, tests were carried out to determine the type of model to be used (random or fixed effects). This was carried out through Chaw and Hausman tests with results indicating the significance of $p\text{-value}$ less than 0.05 thus allowing the use of fixed effect panel modelling.

Table 13. Analysis for Free Cash Flows Agency Costs and Firm Performance

Test	Number	Statistics	Statistics Value	Deg. of Freedom	Significance	
Chaw	600	F	3.570	(104,560)	0.004	
Hausman	600	Chi-Square	40.551	8	0.01	
Variable	Coefficient		p-values			
FCF	0.145		0.003			
AUE	0.418		0.034			
PCE	0.211		0.017			
Constant	0.028		0.043			
F-Statistic	Prob > chi2 = 0.031					
R-Squared	46%					
Model	R		R ²	Adjusted R ²	Standard Error	
1	0.836		0.6988	0.5924	0.84341	
Model	Sum of Squares		DF	Mean of Square	F	Sig
Regression	10.041		1	10.041	11.436	0.042
Residual	126.432		144	0.878		
Total	136.473		145			
Model	Unstandardized Coefficients		Standard Coefficients			
	B	Std Error	Beta			
Constant	.06	.215			-.283	0.031
FCF	0.103	0.197	0.226		1.982	0.034
FMC	0.139	0.2147	0.219		1.032	0.042

$$\bar{Q} = 0.028 + 0.145FCF + 0.418AUE + 0.211PCE + \epsilon$$

\bar{Q} = Firm performance (Financial); FCF= Free cash flows; AUE= Asset Utilization Efficiency; PCE= Product Utilization Efficiency; and, ϵ = Error term

$$Y = 0.06 + 0.103FCF + 0.139FMC + \epsilon$$

Y = Firm performance (non-financial); FCF = Free cash flows; FMC = Firm monitoring costs; and, ϵ = Error term

For testing how agency costs influence the relationship between FCF and firm performance, table 13 displays the regression results based on the models. The F statistics of both models are significantly greater than one, indicating a significant goodness of fit. The FCF variable is found to be significantly positively associated with Tobin Q, indicating no evidence that FCF have a negative effect on firm performance. This is indicated by (0.145, 0.003) and (0.103, 0.034).

From the study findings, it is revealed that the intercept (constant) is positive and significant in both secondary and primary data sets. This is indicated by constant values of 0.028 and 0.06 respectively. Overall, it shows a positive effect of agency costs on the relationship between FCF and firm performance. This is further corroborated by a strong co-efficient of determination for both secondary and primary data. The results indicate that an increase in agency costs by 2.8% or 6% (for secondary data and primary data respectively) will lead to an improvement in firm performance by 1%. These findings are supported by Kangarluei, Motavassel, and Abdollahi (2011) and Khidmat and Rehman (2014) who established a significant positive effect of agency costs on the relationship between FCF and firm performance.

Three different agency cost measures were tested in the study; asset utilization efficiency (secondary data), production cost efficiency (secondary data) and firm monitoring costs (Primary data). The results revealed that firm monitoring cost measure is positive and significantly associated with firm performance (0.0139, 0.042). This can be attributed to the role of the internal control system in reducing agency costs. Asset utilization efficiency was established to be significant and positively related to firm performance (0.418, 0.034).

Results for production cost efficiency (PCE) reveal a positive and non-significant effect on the relationship between FCF and with firm performance (0.211, 0.017). According to the regression results, it was noted that the effect of agency costs on the relationship between FCF and firm performance explains 46% (secondary data) and 70% (primary data) variation in performance of listed firms. This implies that 54% and 30% of the variation in performance of the NSE listed firms is not explained by the regression model (for secondary data and primary data respectively). Results from the ANOVA, indicate that the overall model had a significance value of 0.6% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value) is less than 0.05.

Table 14. Summary of Tests of Hypotheses, Results and Conclusions

Hypothesis	R ²	(p-value)	F-statistic	Conclusion
H1: FCF have a significant effect on performance of firms listed at the NSE	0.28 0.352836	0.03 0.001	3.528 11.897	Alternative Hypothesis supported
H1a.: FCF have a significant effect on performance of firms listed at the NSE (customer perspective)	0.219	0.042	10.792	Alternative Hypothesis supported
H1b.: FCF have a significant effect on performance of firms listed at the NSE (efficiency of internal business processes)	0.10304	0.067	16.5372	Alternative Hypothesis not supported
H1c.: FCF have a significant effect on performance of firms listed at the NSE (Learning and growth perspective)	0.5446	0.041	14.082	Alternative Hypothesis supported
H1d.: FCF have a significant effect on performance of firms listed at the NSE (Non-market perspective)	0.2714	0.08	13.318	Alternative Hypothesis not supported
H2: Agency costs have a significant moderating effect on the relationship between FCF and performance of firms listed at the NSE	0.46 0.6988	0.043 0.042	0.031 11.436	Alternative Hypothesis supported

Summary, Conclusion and Recommendation

Summary of findings

This study was founded on the premise that FCF has an influence on firm performance, and that the relationship between the two is moderated by agency costs. The first objective of the study was set to find out the relationship between FCF and performance of firms listed at NSE. The findings reveal that FCF has a positive influence on the performance of firms listed at the NSE. The effect of FCF was found to be statistically significant and hence the null hypothesis was rejected. The findings also indicate that agency costs have a positive moderating effect on the relationship between FCF and performance of firms listed at the NSE. Thus the study rejected the null hypothesis that agency costs have no significant moderating effect on the relationship between FCF and performance of firms listed at NSE.

Conclusion

FCF has a positive significant effect on firm performance. Similarly, agency costs have a positive significant moderating effect on the relationship between FCF and firm performance. Firms should strive to increase their FCF since it has a significant positive effect on firm performance. Similarly, firms should invest more in monitoring and CG which; according to

findings in this study, suggest that the benefits derived there from outweigh the agency costs of investing therein.

The findings imply that NSE listed firms have effective control and oversight mechanisms which have allowed managers to make good investment decisions that are geared towards maximizing shareholders' wealth. Therefore, increasing FCF improves the performance of firms listed at NSE. This could be attributed to improved firm monitoring and CG which seem to have achieved the objective of aligning the interests of firm managers and those of shareholders (maximizing shareholders' wealth).

Limitations of the Study

The study relied on primary data which was obtained from managers of the firms listed at the NSE. The key informant approach in the study may have introduced bias into the data obtained. Incorporating data from customers, investors or other practitioners such as consultants could mitigate on the bias. Secondly, the study focused on firms listed at the NSE which operate in a unique environment. Unique factors such as regulatory environment, culture and demographics limit the generalizability of the study results to other countries or markets. However, these limitations did not undermine the robustness and/or the rigour employed in the study.

Recommendations and Suggestions for Further Research

The findings show that there exists a positive relationship between FCF and firm performance. The study, therefore, recommends that firm managers, investors and other practitioners should focus more on the need for firms to generate FCF. Positive FCF indicates that the firm is generating more cash than is used to run the firm and reinvest to grow the business. Such excess funds can be distributed back to shareholders through dividends or share repurchase programs in cases where the firms have limited growth potential and the cash could not be better invested elsewhere.

Results also indicate a positive moderating role of CG and board structure and composition on the relationship between FCF and firm performance. It is therefore recommended that regulators, policymakers, investors and other practitioners should emphasize on CG mechanisms to maintain if not improve the high firm performance. Study results indicate that proper CG mechanisms can bring the actions of firm managers into congruence with those of shareholders; which primarily is, to maximize shareholders' wealth.

This study employed both cross-sectional and longitudinal study designs. Further studies should be conducted with a focus on either cross-sectional design or longitudinal study design. Secondly, the study integrated both financial and non-financial performance outcomes. Further studies need to be conducted with a focus on either of the two performance outcomes. This would create room for use of more performance measurement tools such as ROE, ROI, ROA, DY, sales growth, market share and productivity. Other non-financial measurement tools would include use of the IDRC model, performance prism and the Cambridge performance measurement process.

Lastly, the study targeted NSE listed firms only. Further studies should be conducted on private firms, parastatals, and/ or other agencies.

References

- Aiken, L. S. and West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks, CA: Sage.
- Baron, R. M. and Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baruch, Y. and Holtom, B. C. (2008). Survey Response Rate Levels and Trends in Organizational Research. *Human Relations Journal*, 61(8), 1139-1160.
- Berle, A. A. and Means, G. C. (1932). *The Modern Corporation and Private Property*. McMillan, New York.
- Bonett, D. G. and Wright, T. A. (2014). Cronbach's Alpha Reliability: Interval Estimation, Hypothesis Testing and Sample Size Planning. *Journal of Organizational Behavior*. 36, (1), 3-15.
- Brealey, A. A., Myers, S. C. and Allen, F. (2005). *Principles of Corporate Finance (8th ed.)*. Boston: McGraw-Hill/Irwin.
- Bromiley, P. (1990). *Advances in Strategic Management*. JAI Press, Greenwich.
- Brush, H. W., Bromiley, P. and Hendrickx, M. (2000). The Free Cash Flow Hypothesis for Sales Growth and Firm Performance. *Strategic Management Journal*, 21, 455-472.
- Daft, R. L. (1995). *Organization Theory and Design (11 ed.)*. West Publishing Company, New York.
- Field, A. (2009). *Discovering Statistics Using SPSS*. Sage Publications Ltd, London.
- Figge, F., Hanh, T., Schaltegger, S. and Wagner, M. (2002). The Sustainability Balanced Score Card-Linking Sustainability Management to Business Strategy. *Business Strategy and Environment*, 11, 269-284.
- Frentrop, P. (2003). On the Discretionary Power of Top Executives. *Journal of Asset Management*, 5 (2), 91-104.
- Gleason, J. M. and Barnum, D. T. (1982). Toward Valid Measures of Public Sector Productivity: Performance Measures in Urban Transit. *Management Science*, 28(14), 379-386.
- Gregory, A. (2005). The Long-run Abnormal Performance of UK Acquirers and the Free Cash Flow Hypothesis. *Journal of Business Finance and Accounting*, 32(5), 777-814.
- Jensen, M. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, 76 (2), 323-329.
- Jensen, M. C. and Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure. *Journal of Financial Economics*, 3, (4), 305-360.
- Kaplan, R. S. and Norton, D. P. (2001). Transforming Balanced Score Card from Performance Measurement to Strategic Management: Part 1. *Accounting Horizons*, 87-104.
- Kangarluei, S. J., Motavassel, M., and Abdollahi, T. (2011). The Investigation and Comparison of Free Cash Flows in the Firms Listed in Tehran Stock Exchange (TSE) with an Emphasis on Earnings Management. *International Journal of Economics and Business Management*, 2(2), 5352-118.

- Khidmat, W. B, and Rehman, M. U. (2014). The Impact of Free Cash Flows and Agency Costs on Firm Performance - An Empirical Analysis of KSE Listed Companies of Pakistan. *Journal of Financial Engineering, 01(03), 145 – 175.*
- Lin, L. and Lin, D. (2014). Agency Cost of Free Cash Flow and Bidders' Long-run Takeover Performance. *Universal Journal of Accounting and Finance, 2(1), 1-8.*
- Nekhili, M., Amar, I. F. B., Chtioui, T. and Lakhali, F. (2014). Free Cash Flow and Earnings Management: The Moderating Role of Governance and Ownership. *Journal of Financial Economics, 11 (13), 847 – 875.*
- Njuguna, L. and Moronge, M. (2013). Influence of the Managerial Behavior of Agency Cost on the Performance of Listed Firms on NSE. *International Journal of Social Sciences and Entrepreneurship, 1 (7), 397-410.*
- Nyong'o, A. P. (2000). The Context of Privatization in Kenya. *African Academy of Sciences. Colour Printers, Nairobi, Kenya.*
- Ongore, V. and K'Obonyo, P. (2011). Effects of Selected Corporate Governance Characteristics on Firm Performance: Empirical Evidence from Kenya. *International Journal of Economics and Financial Issues, 1 (3), 99-122.*
- Richardson, S. (2006). Over-investment of Free Cash Flow and Corporate Governance. *Review of Accounting Studies, 11, 159-189.*
- Robinson, C. and Schumacker, R. E. (2009). Interaction Effects: Countering Variance Inflation Factor and Interpretation Issues. *Multiple Linear Regression View Points, 35(1), 6-11.*
- Tirole, J. (1986). *The Theory of Corporate Finance.* Princeton University Press, Princeton NJ.
- Waithaka, S. M., Ngugi, J. K., Aiyabei, J. K., Itunga, J. K. and Kirago, P. (2012). Effects of Dividend Policy on Share Prices: A Case of Companies in Nairobi Securities Exchange. *Journal of Business Administration and Management, 2 (8), 642-648.*
- Wambua, P. (2013). Effects of Agency Costs on Financial Performance of Companies Listed at the Nairobi Securities Exchange. *International Journal of Social Sciences and Entrepreneurship, 1 (5), 587-607.*
- Wang, G. Y. (2010). The Impacts of Free Cash Flows and Agency Costs on Firm Performance. *Journal of Service Science and Management, 3, 408-418.*

The Intervening Influence of Economic Growth on Fiscal Policy Stance and Public Expenditure in Kenya

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Abstract: *This paper investigates the intervening influence of economic growth on the relationship between fiscal policy stance and public expenditure in Kenya from 1964 to 2015 using a Vector Error Correction Model. The results indicate that economic growth has an intervening influence on the relationship between fiscal policy stance and public expenditure in Kenya. The findings further show that fiscal policy, economic growth and public expenditure are cointegrated using the Johansen test and the bound test but there is no short-run causality between the variables as indicated by the Wald test statistics. The findings suggest that economic growth explains the extent to which fiscal policy stance affects the level of public expenditure in Kenya even though fiscal policy stance has a negative relationship with public expenditure.*

Keywords: Fiscal policy stance, public expenditure, economic growth

Introduction

There have been growing concerns for governments to prudently and effectively utilise public resources the world over especially in developing countries where transparency and accountability in public spending have been a major challenge. This is considering that there are limited resources yet there are numerous public demands. It is expected that a government would effectively use fiscal policy as a tool to control the level of public expenditure in any given economic environment regardless of whether an economy is at a boom or recession. Therefore this study seeks to answer the question of whether economic growth in a country can influence the effect of fiscal policy stance on the level of public expenditure. Public expenditure can be described as the expenses incurred by a government in order to sustain its citizens and the economy as a whole. Barro and Grilli (1994) and Njeru (2003) generally explain that public expenditure entails government expenses on various activities and it can be classified as recurrent expenditure and development expenditure.

Fiscal policy is a tool used by a government in order to control the level of public expenditure as it aims to redistribute and reallocate resources while enhancing stability in an economy. Fiscal

policy stance can either be contractionary or expansionary. On the other hand, economic growth refers to the level of gross domestic product (GDP) growth in an economy or a country. The analysis of economic growth cycles is a method that can explain economic conditions in an economy. Pailwar (2008) indicates that economic conditions can be explained by economic growth cycles in terms of boom, recession and depression. A boom is when an economy expands but the rate of growth is higher than the rate of growth at full employment level of output while a recession is when the actual growth rate is lower than the growth rate at the full employment level. A depression can be described as the acute and severe contraction of economic activities. During a boom, it is expected that public expenditure would increase steadily as argued by Wagner's Law of increasing state activities while in a recession public expenditure is expected to be declining. Therefore Wagner's law seems to support pro-cyclicality of public expenditure which has been the case in developing economies. However, in developed economies, public expenditure has been countercyclical whereby it has been declining during booms and it has resulted in enhancing economic stability (Alesina and Tabellini, 2005).

In the finance empirical literature, the relationship between fiscal policy stance and public expenditure is inconclusive and insufficiently studied except a few studies such as Brownbridge and Canagarajah (2008) and Stancik and Valila (2012) with the findings of these studies generally arguing that fiscal policy stance affects public expenditure. It is also notable that the intervening influence of economic growth on the relationship between fiscal policy stance and public expenditure has not been examined in the existing empirical literature apart from extensive studies done on the relationship between economic growth and public expenditure. In fact, there has been a long debate in the public finance literature on whether economic growth affects public expenditure or vice versa. These contrasting notions were put across by Wagner (1863) while explaining the Law of increasing state activities by arguing that economic growth would affect public expenditure. Also, Peacock and Wiseman (1961) seem to concur with Wagner's Law. However, Keynes (1936) argued that public expenditure would affect economic growth especially through borrowing money from the private sector and then returning it to them through various spending programmes.

There is insufficient evidence on the intervening effect of economic growth on the relationship between fiscal policy stance and public expenditure from the existing finance literature. Therefore this paper aims to examine the intervening influence of economic growth on the relationship between fiscal policy stance and public expenditure in Kenya. This paper is divided into the following sections: introduction, literature review, research methodology, data analysis and conclusion.

Literature Review

There are various studies that have been undertaken to examine the relationship between fiscal policy and economic growth. For instance, Semmler et al. (2007) using time series modelling argue that the scope of the fiscal policy to influence economic growth depends on the underlying model of growth but studies done by Temple (2003); Glomm and Rioja (2006) while supporting the Solow (1956) model of growth, view fiscal policy as having an insignificant influence on long-term growth. This implies that there are divergent research findings as to the extent to

which fiscal policy would influence economic growth. However, Temple (2003) argues that the scope for policy to have an influence on the level of output should merit the attention of policymakers and analysts but has been neglected because of a misguided focus on effects on the long-term growth rate and an undervaluation of level effects. Also, Tanzi and Zee (1996) analysed fiscal policy by reviewing the literature and concluded that despite the lack of robust empirical results, fiscal policy could affect long-run growth performance of countries.

On the other hand, Greiner et al. (2005) argue that a time series perspective on economic growth may be more useful to pursue in designing growth strategies since it would ultimately allow the use of econometric time series methods and drafting important implications for growth policies. Hence most studies such as M'Amanja and Morrissey (2005); Perotti (2007); Semmler et al. (2007) while analysing the effect of fiscal policy on economic growth have adopted time series techniques in data analysis. However, Tanzi and Zee (1996) used a literature review perspective to recommend that fiscal policy can affect economic growth while Brownbridge and Canagarajah (2008) have used a descriptive research approach to examine fiscal policy for growth in Tajikistan. The study concludes that fiscal policy must play a greater role in strengthening the supply side of the economy through the delivery of key public services which can complement private investment and enhance human capital.

M'Amanja and Morrissey (2005) sought to test the effect of fiscal policy on economic growth in Kenya from 1964 to 2002 using a time series techniques known as the autoregressive distributed lag (ARDL) model. The findings indicate that productive government expenditure has strong adverse effects on growth while government investment was found to be beneficial to growth in the long run. However, Perotti (2007) while using the structural vector autoregression approach (SVAR) faults the use of Granger causality tests used by M'Amanja and Morrissey (2005) because the methodology fails to capture the structural shocks on fiscal policy and that indicates challenges of identification and definition of the relevant variables. On the other hand, Semmler et al. (2007) used a calibration technique to establish the use of fiscal policy in promoting economic growth and the findings are that foreign aid per capita and the productivity factor have a positive and linear effect on per capita GDP and welfare.

The empirical literature on the relationship between public expenditure and economic growth presents mixed findings. For instance, studies undertaken by Barro (1991) and Romer (1990) found that public expenditure affects economic growth hence supporting the Keynesian view. Similarly, Sakyi and Adams (2012) using ARDL and cointegration approach from 1960 to 2008 in Ghana found that democracy and government spending have a positive effect on economic growth in the short run and long run. Gurgul and Lach (2010) using linear and nonlinear Granger causality tests from the first quarter of 2008 to the third quarter of 2008 in Poland found that total public expenditure affects economic growth. However, in the analysis of sub-categories of public expenditure and economic growth, mixed results were reported in the study by Gurgul and Lach in 2010. That is expenditure on net interest payments affected economic growth, other remaining expenditure was affected by economic growth while expenditure on human resources and physical resources was found to have no effect on economic growth.

Various studies such as Srinivasan (2013) using Error Correction Model (ECM) and cointegration from the period 1973 to 2012 in India, report that economic growth affects public expenditure hence in support of the Wagner's law of increasing state activities. However, we have studies that find no significant relationship between economic growth and public expenditure. For instance, Bagdigen and Cetintas (2003) investigated the relationship between economic growth and public expenditure in Turkey using Granger causality tests and found no causality in both directions. Similarly, studies on components of public expenditure such as education and defence do not have a significant relationship with economic growth. Deskins et al. (2010) using a series of fixed effects regressions from 1992 to 2002 in the US using panel data found that education spending does not have a significant relationship with economic growth. Also, Heo (2010) using augmented Solow model from 1954 to 2005 in the US found that defence spending does not significantly affect the US economy. However, Dao (2012) using simultaneous equation modelling from 2008 to 2010 in selected developing economies found that health spending affects the growth of an economy.

Methodology

This paper adopted the causal research design since it enabled the determination of the cause and effect in examining the influence of economic growth on the relationship between fiscal policy stance and public expenditure in Kenya. The study population period was 1964 to 2015 since it captured the universe of these variables in Kenya. Secondary data on fiscal policy, economic growth and public expenditure were collected from Kenya National Bureau of Statistics (KNBS) economic surveys, statistical abstracts and annual budget estimates books.

The data collected were analysed using descriptive and inferential statistics where it involved a description of the data, undertaking of diagnostic tests and finally time series modelling. In establishing the influence of economic growth on the relationship between fiscal policy stance and public expenditure, three steps were involved in testing the intervening influence according to the Baron and Kenny (1986) approach. The first step involved regressing fiscal policy stance against public expenditure using a VECM model as follows;

$$PExp_t = \alpha_{10} + \alpha_{11} PExp_{t-1} + \alpha_{12} FP_{t-1} + \varepsilon_{1t} \quad (1)$$

Where:

$PExp_t$ = Public Expenditure

$PExp_{t-1}$ = Lagged Public Expenditure

FP_{t-1} = Fiscal Policy Stance

α_{10} = The Constant or Intercept

α_{11} = Model Coefficient of the Lagged Public Expenditure

α_{12} = Model Coefficient of Fiscal Policy Stance

ε_{1t} = Error Term or Structural Shock

The second step involved regressing fiscal policy stance against economic growth using a VECM model as follows;

$$FP_t = \alpha_{10} + \alpha_{11} EG_{t-1} + \alpha_{12} FP_{t-1} + \varepsilon_{1t} \quad (2)$$

Where:

FP_t = Fiscal Policy Stance

FP_{t-1} = Lagged Fiscal Policy Stance

EG_{t-1} = Economic Growth

α_{10} = The Constant or Intercept

α_{11} = Model Coefficient of Economic Growth

α_{12} = Model Coefficient of Lagged Fiscal Policy Stance

ε_{1t} = Error Term or Structural Shock

The final step involved regressing fiscal policy stance and economic growth on public expenditure using a VECM model as follows;

$$PExp_t = \beta_0 + \beta_1 PExp_{t-1} + \sum_{i=1}^m \gamma_i X_{it} + \varepsilon_t \quad (3)$$

Where:

$PExp_t$ = Public Expenditure

$PExp_{t-1}$ = Lagged Public Expenditure

X_{it} = Economic Growth, Fiscal Stance

β_0 = The Constant or Intercept

β_1 = Model Coefficient of the Lagged Public Expenditure

γ_i = Model Coefficients of Economic Growth, Fiscal Stance

ε_t = Error Term or Structural Shock

Data Analysis

Data Description

Time series annual data was collected from KNBS reports from 1964 to 2015. The description of data commences with a trend on public expenditure as shown in Figure 1.

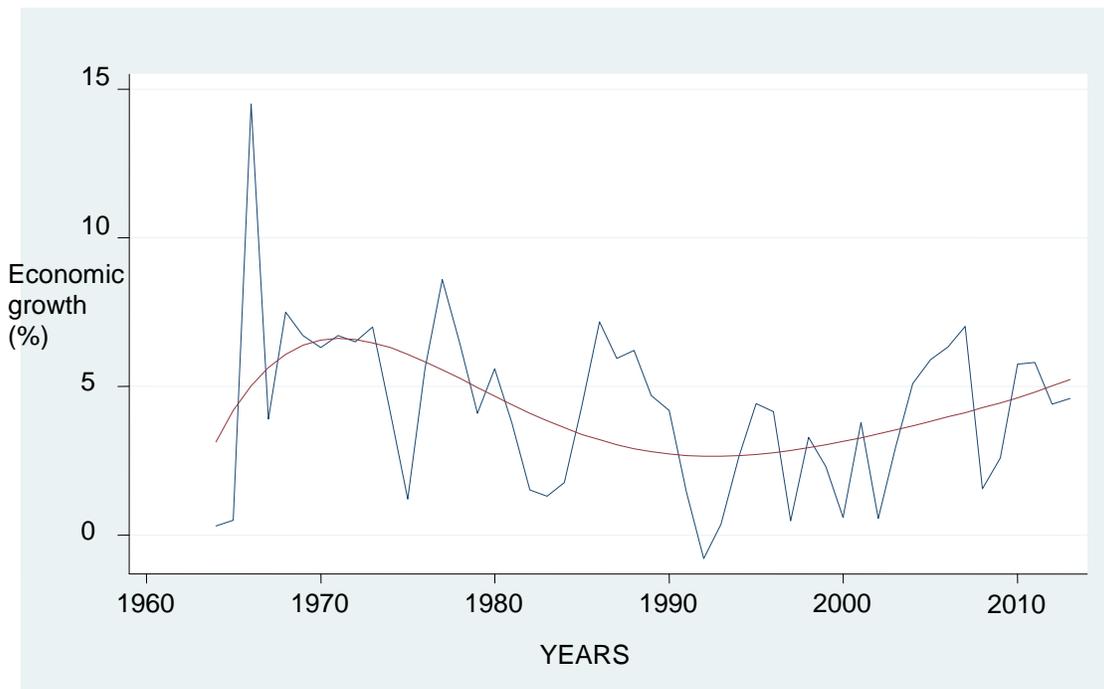


Figure 1. Economic Growth Cycles in Kenya, 1964 – 2015

The trend on the economic growth in Kenya as measured by GDP growth rates from 1964 to 2015 is presented in Figure 1. The economic growth cycle as shown in Figure 1 was generated using non-parametric analysis which involves local polynomial smoothing. The trend indicates when the Kenyan economy is at a boom, recession or depression where the peaks represent the booms while the troughs represent the depressions. The trend line in Figure 1 represents the full employment line or potential GDP. The trend line usually depicts the full employment level of output over a period of time. In summary, the line is the long run growth path for GDP (Pailwar, 2008).

Figure 1 represents the economic growth cycles in Kenya from 1964 to 2015 and the same diagram depicts economic growth in terms of boom, recession or depression. A boom is when the economy expands but the rate of growth is higher than the rate of growth of full employment level of output while a recession is when the actual growth rate is lower than the growth rate at the full employment level. A depression is when there is an acute and severe contraction of economic activities. Essentially from Figure 1, the peaks represent the booms; the troughs represent the depressions while recessions fall in between the peaks and troughs. The smooth curve represents the potential GDP or full employment line, which is the level of output where all the factors of production are utilized at the optimum level.

Summary Statistics

The Table 1 in the appendix indicates the summary statistics of the variables in this paper. Fiscal policy stance (budget deficit) has a mean of Ksh. 42507.66 million while fiscal policy stance (tax) has a mean of Ksh. 123379.8 million. Economic growth has a mean of 4.168 with a standard deviation of 2.69. For public expenditure, the mean is Ksh. 192760.3 million with a

standard deviation of Ksh. 294372.1 million. Fiscal policy stance, economic growth and public expenditure are positively distributed as indicated by the skewness of 2.14, 1.95, 0.92 and 1.96 respectively. This means that the distribution is skewed to the right. On kurtosis, the variables are highly peaked relative to the peakedness of a normal distribution since fiscal policy stance, economic growth and public expenditure has a value of 6.24, 5.84, 5.53 and 6.13 respectively as indicated in the appendix in Table 1. A normal distribution usually has a kurtosis value averaging three which means a value greater than three represents a highly peaked distribution.

Diagnostic Test Results

This paper employed the Augmented Dickey-Fuller (ADF) test for stationarity and Johansen test for cointegration in undertaking diagnostic tests. The stationarity tests were undertaken on fiscal policy stance (tax, budget deficit), economic growth and public expenditure in order to determine if they are stationary or non-stationary. In Table 2 in the appendix, the stationarity results indicate economic growth is stationary at level ($p=0.0015$) while the tax is stationary at first differencing ($p=0.0000$) which means that they are integrated at order zero $I(0)$ and one $I(1)$ respectively. On the other hand, budget deficit and public expenditure are stationary at second differencing meaning that they are integrated at order two $I(2)$. Stationarity tests are usually undertaken so as to ensure that the data to be used has a constant mean and variance before time series modelling can be undertaken.

Cointegration tests were undertaken in order to test if the variables have a long run relationship between them. The Johansen test for cointegration was conducted using the trace statistic and maximum Eigen values. For cointegration to exist, the trace statistic should be greater than the critical values at 5% level of significance. Table 3 in the appendix indicates that fiscal policy stance, economic growth and public expenditure are cointegrated meaning that they have a long run relationship between them. It is from these cointegration results that one determines the time series model to be used implying that a VECM model is applicable since cointegration exists between the variables. Furthermore, in Table 4 in the appendix, fiscal policy stance, economic growth and public expenditure are cointegrated using the Auto Regressive Distributed Lag (ARDL) bound test for cointegration. The bound test requires one to check the f-statistic in the Wald test and compare it with the upper and lower bound values obtained from the Pesaran et al. (2001) Table. In Table 4 in the appendix, the f-statistic is 6.771846 at 5% level of significance is greater than the upper bound value of 4.85 from the Pesaran table, then there is cointegration existing between the study variables.

Model Specification

Fiscal Policy Stance, Economic Growth and Public Expenditure

The main objective of this study was to establish the influence of economic growth on the relationship between fiscal policy stance and public expenditure in Kenya. Stepwise regression was undertaken where it involved three main steps. The first step entailed regressing fiscal policy stance on public expenditure, the second step involved regressing fiscal policy stance on economic growth while the third step involved regressing fiscal policy stance and economic growth on public expenditure. The three steps were used based on mediation analysis done by Baron and Kenny (1986) and further supported by MacKinnon et al. (2002) on the key steps in

establishing if a variable has a mediating or intervening influence on a dependent to independent variable relationship. Furthermore, there can be various forms of intervening effects ranging from full mediation, partial mediation or no mediation.

According to Baron and Kenny (1986), full mediation is when the independent to dependent relationship is insignificant but the effect on the dependent variable is significant when the intervening variable is introduced. Partial mediation exists when the independent to dependent relationship is less significant compared to the relationship among the independent variable, intervening variable and the dependent variable. Lastly, no mediation is when the independent to dependent relationship is insignificant and also insignificant effect on the dependent variable when the intervening variable is introduced.

The first step of testing intervening or mediating influence involved fiscal policy stance and public expenditure whereby the model used was VECM. The results are indicated in Table 5 in the appendix, where they show that the effect of fiscal policy stance on public expenditure is statistically insignificant. The second step of testing intervening or mediating influence which entailed fiscal policy stance and economic growth was established using a VECM model as determined by the existence of cointegration between the variables in a model. Pre-diagnostic checking and post-diagnostic checking was undertaken. Table 1 shows the lag length criteria/selection method used in testing the effect of fiscal policy stance on economic growth.

Table 1. Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-771.0984	NA	8.31e+10	33.65645	33.77571	33.70113
1	-590.0648	330.5831	46941845*	26.17673*	26.65377*	26.35543*
2	-586.9909	5.212178	61092833	26.43439	27.26920	26.74712
3	-573.4892	21.13315*	50941094	26.23866	27.43125	26.68541
4	-568.8531	6.651798	63224488	26.42840	27.97877	27.00917

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

LR: Likelihood Ratio

LogL: Log Likelihood

FPE: Final Prediction Error

AIC: Akaike Information Criterion

SC: Schwartz Information Criterion

HQ: Hannan-Quinn Information Criterion

Source: Researcher's Computations

From the Table 1, one (1) lag was selected since under the FPE, AIC, SC and HQ the lag value was the lowest. After the lag selection was done, the effect of fiscal policy stance on economic growth was undertaken using a VECM model. Before running the VECM model, diagnostic tests were done such as Johansen cointegration test and Stationarity test so as to ensure that the model

would generate robust results. The data were tested for Stationarity at level and if it was not stationary then it was made stationary at first differencing or second differencing. For the cointegration tests, there was cointegration between fiscal policy stance and economic growth hence a VECM model being the most appropriate model to be used. The VECM model is as shown next;

Table 2. VECM Model for Fiscal Policy Stance and Economic Growth

$$D(\text{ECONG}) = C(1) * (\text{ECONG}(-1) + 1.04851253678 * \text{TAX}(-1) - 1.03871427468 \text{E} - 05 * \text{BDEFIC}(-1) - 14.5272113118) + C(2) * D(\text{ECONG}(-1)) + C(3) * D(\text{TAX}(-1)) + C(4) * D(\text{BDEFIC}(-1)) + C(5)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1.044203	0.187351	-5.573517	0.0000
C(2)	0.121683	0.139693	0.871075	0.3886
C(3)	1.555897	2.148352	0.724228	0.4728
C(4)	8.21E-06	1.58E-05	0.521292	0.6048
C(5)	-0.203948	0.461810	-0.441628	0.6610
R-squared	0.512022	Mean dependent var		0.087500
Adjusted R-squared	0.466629	S.D. dependent var		3.231798
S.E. of regression	2.360256	Akaike info criterion		4.653750
Sum squared resid	239.5448	Schwarz criterion		4.848667
Log likelihood	-106.6900	Hannan-Quinn criter.		4.727409
F-statistic	11.27967	Durbin-Watson stat		1.517122
Prob(F-statistic)	0.000002			

Source: Researcher's Computations

From Table 2, the effect of fiscal policy stance on economic growth is statistically insignificant as indicated in the p-values while the R² is 51.2% meaning that 51.2% of the variations in economic growth can be explained by fiscal policy stance. The p-value of C(1) or the constant is 0.0000 meaning that there is a long run causality running from fiscal policy stance to economic growth. The Prob. (F-statistic) is 0.000002 meaning that the model fits the data well. Short run causality was also tested using the Wald test as indicated in Tables 3 and 4.

Table 3. Wald Test for the Effect of Tax on Economic Growth

Test Statistic	Value	Df	Probability
t-statistic	0.724228	43	0.4728
F-statistic	0.524506	(1, 43)	0.4728
Chi-square	0.524506	1	0.4689

Null Hypothesis: $C(3)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(3)	1.555897	2.148352

Source: Researcher's Computations

As shown in Table 3, there was no short-run causality running from tax to economic growth as indicated by the p -value of 0.4689.

Table 4. Wald Test for the Effect of Budget Deficit on Economic Growth

Test Statistic	Value	Df	Probability
t-statistic	0.521292	43	0.6048
F-statistic	0.271746	(1, 43)	0.6048
Chi-square	0.271746	1	0.6022

Null Hypothesis: $C(4)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(4)	8.21E-06	1.58E-05

Source: Researcher's Computations

As indicated in Table 4, there was no short-run causality running from budget deficit to economic growth as indicated by the p -value of 0.6022.

Table 5. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	7.181737	Prob. F(1,42)	0.0105
Obs*R-squared	7.009175	Prob. Chi-Square(1)	0.0081

Source: Researcher's Computations

From the Table 5, we reject the null hypothesis that there is no serial correlation in the series residual as indicated by the p -value of 0.0081.

Table 6. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.083394	Prob. F(6,41)	0.3883
Obs*R-squared	6.568740	Prob. Chi-Square(6)	0.3626
Scaled explained SS	7.753723	Prob. Chi-Square(6)	0.2567

Source: Researcher's Computations

As indicated in Table 6, we accept the null hypothesis that states that there is no heteroscedasticity as indicated by the p -value of 0.3626 at 5% level of significance. The corresponding R^2 is 6.568740 which is the heteroscedasticity test statistic for the null hypothesis of no heteroscedasticity. The non-existence of heteroscedasticity, in essence, means that the variance of each error term is constant.

The final step of testing intervening influence involves regressing fiscal policy stance and economic growth on public expenditure using a VECM model as determined by the existence of cointegration between the variables. Pre-diagnostic checking and post-diagnostic checking was undertaken. Table 7 shows the lag length criteria/selection method used in testing the effect of fiscal policy stance and economic growth on public expenditure.

Table 7. Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1338.147	NA	2.59e+20	58.35420	58.51321	58.41377
1	-1117.845	392.7118	3.60e+16	49.47152	50.26658*	49.76935
2	-1093.203	39.64067*	2.52e+16*	49.09580*	50.52691	49.63190*
3	-1078.703	20.80462	2.80e+16	49.16101	51.22817	49.93538
4	-1065.798	16.27239	3.49e+16	49.29554	51.99875	50.30818

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

LR: Likelihood Ratio

LogL: Log Likelihood

FPE: Final Prediction Error

AIC: Akaike Information Criterion

SC: Schwartz Information Criterion

HQ: Hannan-Quinn Information Criterion

Source: Researcher's Computations

From the Table 7, two (2) lags were selected since under the LR, FPE, AIC and HQ the lag value was the lowest. After the lag selection was done, the effect of fiscal policy stance and economic

growth on public expenditure was undertaken using a VECM model. Before running the VECM model, diagnostic tests were done such as Johansen cointegration test and Stationarity test so as to ensure that the model would generate robust results. The data were tested for Stationarity at level and if it was not stationary then it was made stationary at first differencing or second differencing. For the cointegration tests, there was cointegration between fiscal policy stance, economic growth and public expenditure hence a VECM model being the most appropriate model to be used. The VECM model is as shown next;

Table 8. VECM Model for Fiscal Policy Stance, Economic Growth and Public Expenditure

$$D(\text{PEXP}) = C(1) * (\text{PEXP}(-1) + 17254.5019034 * \text{TAX}(-1) - 0.555828617665 * \text{BDEFIC}(-1) + 22833.7504095 * \text{ECONG}(-1) - 433109.506478) + C(2) * D(\text{PEXP}(-1)) + C(3) * D(\text{PEXP}(-2)) + C(4) * D(\text{TAX}(-1)) + C(5) * D(\text{TAX}(-2)) + C(6) * D(\text{BDEFIC}(-1)) + C(7) * D(\text{BDEFIC}(-2)) + C(8) * D(\text{ECONG}(-1)) + C(9) * D(\text{ECONG}(-2)) + C(10)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.264607	0.077014	3.435818	0.0015
C(2)	-0.670086	0.305600	-2.192692	0.0347
C(3)	-0.010339	0.295119	-0.035034	0.9722
C(4)	16279.59	38737.21	0.420257	0.6767
C(5)	-36613.46	27482.71	-1.332237	0.1909
C(6)	-0.194314	0.222949	-0.871559	0.3891
C(7)	0.188864	0.250937	0.752636	0.4564
C(8)	-3111.858	1504.511	-2.068352	0.0478
C(9)	-1480.582	1578.495	-0.937971	0.3543
C(10)	44391.28	9773.105	4.542188	0.0001
R-squared	0.743859	Mean dependent var	26379.71	
Adjusted R-squared	0.681554	S.D. dependent var	50108.75	
S.E. of regression	28276.87	Akaike info criterion	23.52378	
Sum squared resid	2.96E+10	Schwarz criterion	23.91743	
Log likelihood	-542.8088	Hannan-Quinn criter.	23.67191	
F-statistic	11.93906	Durbin-Watson stat	1.914769	
Prob(F-statistic)	0.000000			

Source: Researcher's Computations

From Table 8, the effect of fiscal policy stance and economic growth on public expenditure is statistically significant as indicated in the *p*-values while the R^2 is 74.39% meaning that 74.39% of the variations in public expenditure can be explained by fiscal policy stance and economic growth. The *p*-value of C(1) or the constant is 0.0015 meaning that there is a long run causality running from fiscal policy stance and economic growth to public expenditure. The value of Prob.

(f-statistic) is 0.000000 meaning that the model fits the data well. Short run causality was also tested using the Wald test as indicated in Tables 9, 10 and 11.

Table 9. Wald Test for the Effect of Tax on Public Expenditure

Test Statistic	Value	Df	Probability
F-statistic	1.029971	(2, 37)	0.3670
Chi-square	2.059942	2	0.3570

Null Hypothesis: $C(4)=C(5)=0$
 Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(4)	16279.59	38737.21
C(5)	-36613.46	27482.71

Source: Researcher's Computations

As indicated in Table 9, there was no short-run causality running from tax to public expenditure as indicated by the p -value of 0.3570.

Table 10. Wald Test for the Effect of Budget Deficit on Public Expenditure

Test Statistic	Value	Df	Probability
F-statistic	0.781015	(2, 37)	0.4653
Chi-square	1.562029	2	0.4579

Null Hypothesis: $C(6)=C(7)=0$
 Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6)	-0.194314	0.222949
C(7)	0.188864	0.250937

Source: Researcher's Computations

As shown in Table 10, there was no short-run causality running from budget deficit to public expenditure as indicated by the p -value of 0.4579.

Table 11. Wald Test for the Effect of Economic Growth on Public Expenditure

Test Statistic	Value	Df	Probability
F-statistic	1.443792	(2, 37)	0.2490
Chi-square	2.887584	2	0.2360

Null Hypothesis: $C(8)=C(9)=0$
 Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(8)	-3111.858	1832.043
C(9)	-1480.582	1578.495

Source: Researcher's Computations

As indicated in Table 11, there was no short-run causality running from economic growth to public expenditure as indicated by the p -value of 0.2360.

Table 12. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.394928	Prob. F(2,35)	0.6767
Obs*R-squared	1.037256	Prob. Chi-Square(2)	0.5953

Source: Researcher's Computations

From the Table 12, we accept the null hypothesis that there is no serial correlation in the series residual as indicated by the p -value of 0.5953.

Table 13. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.105546	Prob. F(12,34)	0.0440
Obs*R-squared	20.03707	Prob. Chi-Square(12)	0.0664
Scaled explained SS	31.94662	Prob. Chi-Square(12)	0.0014

Source: Researcher's Computations

As indicated in Table 13, we accept the null hypothesis that states that there is no heteroscedasticity as indicated by the p -value of 0.0664 at 5% level of significance while the

corresponding R^2 is 20.03707 which is the heteroscedasticity test statistic for the null hypothesis of no heteroscedasticity. The non-existence of heteroscedasticity, in essence, means that the variance of each error term is constant.

In the final step of testing intervening influence which involves regressing fiscal policy stance and economic growth on public expenditure using a VECM model as indicated in Table 8, the results indicate that the lagged variable of economic growth and public expenditure have a significant influence on public expenditure. Therefore, economic growth has a mediating/intervening influence on the relationship between fiscal policy stance and public expenditure.

The Table 13 shown next indicates a summary of the model coefficients before and after the intervening variable is introduced as also indicated in Table 5 in the appendix and Table 8 respectively. Also, the percentage change as a result of the intervening variable which is economic growth is also indicated.

Table 14. Intervening Influence of Economic Growth on Fiscal Policy Stance and Public Expenditure

Variables		Coefficients without intervening variable	Coefficients with intervening variable	% Change in the coefficients
Fiscal Policy Stance	Tax(-1)	-0.0038	16279.59	100
	Tax(-2)	-0.1580	-36613.46	99.99
	Budget Deficit (-1)	-0.00000141	-0.1943	99.99
	Budget Deficit (-2)	0.0000000587	0.1889	99.99
Economic Growth	Economic Growth (-1)		-3111.86	
	Economic Growth (-2)		-1480.58	

Source: Researcher's Computations

As indicated in Table 14, there is a significant change in the model coefficients after the intervening variable (economic growth) is introduced in the relationship between fiscal policy stance and public expenditure. The percentage changes are approximately 100%. Therefore, economic growth has a mediating influence on the relationship between fiscal policy stance and public expenditure since there is a significant change in the variable coefficients and also in the final step of testing intervening influence the model results are statistically significant unlike the results in step one and step two.

Conclusion

The statistically insignificant effect of fiscal policy stance on economic growth implies that there could be a combination of other macroeconomic factors or policies that could explain the effect on economic growth apart from only fiscal policy stance. That is considering that economic

growth is one of the several macroeconomic factors that express the economic state of a country. Studies conducted by Temple (2003) and Glomm and Rioja (2006) contend that fiscal policy has an insignificant influence on the economic growth in the long term. These studies are in support of the classical study of Solow (1956) model of economic growth.

However, M'Amanja and Morrissey (2005) in testing the effect of fiscal policy on economic growth in Kenya found that productive government expenditure has a strong adverse effect on growth. On the other hand, this study found a weak effect of fiscal policy stance on economic growth. The divergence of research findings could be attributed to the differences in methodology whereby this study used VECM modelling as opposed to ARDL modelling and the regressing of only fiscal policy stance as a single independent variable against economic growth. In testing the effect of fiscal policy on economic growth, Perotti (2007) faults the study done by M'Amanja and Morrissey (2005) since it did not capture the structural shocks in the economy that is the impulses present when undertaking the analytical modelling.

Using the stepwise regression approach, the results indicated a full mediating or intervening influence of economic growth on the relationship between fiscal policy stance and public expenditure in Kenya. This means that the level of economic growth in a country would significantly influence the relationship between fiscal policy stance and public expenditure.

References

- Alesina, A., and Tabellini, G. (2005). Why is fiscal policy often pro-cyclical? *National Bureau of Economic Research Working Paper Series*, No. 11600.
- Bagdigen, M., and Cetintas, H. (2003). Causality between public expenditure and economic growth: the Turkish case. *MPRA Paper* No. 8576.
- Baron, R. M., and Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173 – 1182.
- Barro, R. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106, 407– 444.
- Barro, R., and Grilli, V. (1994). *European macroeconomics*. Basingstoke, Hampshire: Macmillan.
- Brownbridge, M., and Canagarajah, S. (2008). Fiscal policy for growth and development in Tajikistan. *World Bank Policy Research Working Paper* No. 4532, World Bank.
- Dao, M.Q. (2012). Government expenditure and growth in developing countries. *Progress in Development Studies*, 12(1), 77–82.
- Deskins, J., Hill, B., and Ullrich, L. (2010). Education spending and state economic growth: Are all dollars created equal? *Economic Development Quarterly*, 24(1), 45–59.
- Glomm, G., and Rioja, F. (2006). *Fiscal policy and long-run growth in Brazil*. Mimeo, Indiana University.
- Greiner, A., Semmler, W., and Gong, G. (2005). *The forces of economic growth - A time series perspective*. Princeton: Princeton University Press.

- Gurgul, H., and Lach, L. (2010). Causality analysis between public expenditure and economic growth of Polish economy. *Statistics in Transition*, 11(2), 329 – 359.
- Heo, U. (2010). The relationship between defence spending and economic growth in the United States. *Political Research Quarterly*, 63(4), 760 –770.
- Keynes J.M. (1936). *The general theory of employment, interest and money*. (vol. 7). Cambridge: MacMillan.
- M’Amanja, D., and Morrissey, O. (2005). Fiscal policy and economic growth in Kenya. *CREDIT Research Paper No. 05/06*.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., and Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7, 83 – 104.
- Njeru, J. (2003). The impact of foreign aid on public expenditure: the case of Kenya. *AERC Research Paper No. 135*, AERC.
- Pailwar, V. (2008). *Economic environment of business*. New Delhi: Prentice-Hall of India, Private Limited.
- Peacock, A., and Wiseman, J. (1961). *The growth of public expenditure in the United Kingdom*. Princeton: Princeton University Press.
- Perotti, R. (2007). Fiscal policy in developing countries: a framework and some questions. *World Bank Research Working Paper No. 4365*, World Bank.
- Pesaran, M.H., Shin, Y. and Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16, 289 – 326.
- Romer, P. (1990). Human capital and growth: theory and evidence. *Carnegie-Rochester Conference Series on Public Policy*, 40, 47–57.
- Sakyi, D., and Adams, S. (2012). Democracy, government spending and economic growth: The case of Ghana, 1960–2008. *Margin—The Journal of Applied Economic Research*, 6(3), 361–383.
- Semmler, W., Greiner, A., Diallo, B., Rezai, A., and Rajaram, A. (2007). Fiscal policy, public expenditure composition and growth. *World Bank Policy Research Working Paper No. 4405*, World Bank.
- Solow, R. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics* 70, 65 – 94.
- Srinivasan, P. (2013). Causality between public expenditure and economic growth: The Indian case. *International Journal of Economics and Management*, 7(2), 335 – 347.
- Tanzi, V., and Zee, H. (1996). Fiscal policy and long run growth. *IMF Working Paper No. 96/119*.
- Temple, J. (2003). The long-run implications of growth theories. *Journal of Economic Surveys*, 17(3), 497–510.
- Wagner, A. (1863). *Grundlegung der politischen ökonomie*. Retrieved on 09/11/2016 from <http://www.google.com>.

Product diversification, Capital structure and Dynamic adjustments: Empirical evidence from Tanzania

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Abstract: *This study assessed the role of product diversification on capital structure variability and its dynamic nature. It used static, dynamic and hierarchical regression techniques. Both fixed effects and general methods of moments' estimators were employed. Related product diversification was significantly negatively related to capital structure while unrelated and total product diversification was significantly positively related to it. Hierarchical regression indicated that product diversification had a significant share of contribution to capital structure variability. These findings highlight the significance of co-insurance and monitoring effects implicit to product diversification. Related diversification is risky and thus associated with internal financing. Unrelated product diversification is less risky. It highlights the fact that the type of product diversification has different effects on firm financing. The speed of adjustment of capital structures was low, indicating that firms are slowly adjusting their capital structures towards optimum levels.*

Keywords: Product diversification, Capital structure, Dynamic Adjustment, Tanzania

Introduction

Capital structure is the combination of debt and equity capital in the firm's financing (Abor, 2007). The issuance of bonds or long-term notes payable or long-term borrowing generate debt, while issuance of equity, such as ordinary shares and preferred shares create equity. The proportion of debt to equity financing is coined as leverage. (Fauz *et al.*, 2013; Gul *et al.*, 2013). The debate on capital structure is yet unresolved (Al-Najjar and Hussainey, 2011). Capital structure theory has its genesis in the pioneering work of Modigliani and Miller (1958). They were the first ever to theorize on capital structure (Gill *et al.*, 2012). Their theory was later met by contentious theories, namely; the Trade-off theory, the Pecking-order theory, the Agency-theory, among others, which equally suffer from scholarly criticisms. A review of the capital structure mystery and its theories yield different and diametrically opposed conclusions and

outcomes (Barclay and Smith, 2005). Similarly, the empirical relevance of the predominant theories such as; the Trade-off theory, the Pecking-order theory, and the Agency theory, have been questioned (Fauzi *et al.*, 2013).

Various works (e.g. Modigliani and Miller, 1958; Myers, 1984; Jensen and Meckling, 1976; Wen *et al.*, 2002; Abor and Biekpe, 2005; Bokpin and Arko, 2009; Morellec *et al.*, 2012; Obradovichi and Gill, 2013, etc.) indicate that firm characteristics such as firm size, business risk, liquidity, profitability, growth rate, asset tangibility, corporate governance, among others, impact on capital structure. Although there is a copious research output in this area of study, extended since the seminal work of Modigliani and Miller (1963), many of such studies have been devoted to explaining the extent to which capital structure theories can be applied to different circumstances (Fauzi *et al.*, 2013).

Another related strand of literature on capital structure, led by notable scholars (e.g. Jensen, 1986; Barton and Gordon, 1987; Titman and Wessels, 1988; Kaplan and Weisbach, 1992; Li and Li, 1996; Singh *et al.* 2003; Alonso, 2003; La Rocca *et al.*, 2009) have delved into uncovering the role of diversification in its various conceptualizations, such as corporate, international and product diversification and how they affect capital structure. Few and prominent scholars (e.g. Menéndez-Alonso, 2003; La Rocca *et al.*, 2009) have particularly devoted efforts into assessing the contribution of product diversification to capital structure particularly in the Spanish and Italian context.

The involvement of a firm in multiple business segments is referred to as product diversification (La Rocca *et al.*, 2009). Product diversification is normally decomposed into several types based on various criteria. One such type, based on geographical categories, is local vs. international product diversification (Apostu, 2010) and the other, based on the degree of relatedness, is related vs. unrelated product diversification (La Rocca *et al.*, 2009; Apostu, 2010). This paper focuses on the latter category, which is based on the degree of relatedness and how it affects capital structure, in which related product diversification is an involvement of a firm in similar but not same products based on the extent of resource sharing in production and services, while unrelated product diversification is an involvement of a firm in dissimilar or diverse products that do not share resources in their production (La Rocca *et al.*, 2009). Similarly, a distinction is normally made between diversity and diversification. Diversity measures the degree of involvement of a firm in many distinct businesses, products or segments at a point in time. Diversification measures diversity across time and industry simultaneously (La Rocca *et al.*, 2009).

Concerted attempts have been made to assess diversification and its effects on capital structure. La Rocca *et al.*, (2009, p. 28) maintains that "... an assessment of capital-structure choices must take into account diversification..." They further argue that "it is equally important that it differentiates between related and unrelated product diversification". They insist, "This conclusion implies that diversification strategy is a feature that differentiates firms with respect to their financial behaviours." A common consensus among scholars indicates that the separate effects of both related and unrelated product diversification are vital. However, empirical evidence is mixed on how each type of diversification affects the capital structure (Menéndez-Alonso, 2003; La Rocca *et al.*, 2009; Apostu, 2010). Arguably, these evidence pose more

problems for research than they try to solve. An important question that arises is; which product diversification strategy should a firm undertake and in which circumstance (Benito-Osorio *et al.*, 2012). Such a question has raised interest in product diversification choices and their impacts on firm outcomes (Singh *et al.*, 2003; Klein and Lien, 2009). The present study is yet another attempt to contribute to the debate on whether such choices matter in capital structure decisions, by providing evidence from a frontier capital market in Tanzania.

Diversification effects on firm outcomes have been studied over time (e.g. Menéndez-Alonso, 2003; Singh *et al.*, 2003; Klein and Lien, 2009; La Rocca *et al.*, 2009; Apostu, 2010). Some of these outcomes are; opposing the bad effects on sales and earnings decline in the maturity stage of business cycle, defeating pressures from competition, diluting business risk, evading takeovers through expansion in order to maintain control and regulating consumer tastes among many. Any outcome from these is not without a financing sacrifice from the firm. One obvious research problem, which was the main focus of this study, is how firms should choose between debt and equity finances based on diversification decisions they make (Klein and Lien, 2009). There is scanty evidence from frontier capital markets, particularly Tanzania in this subject area. For instance, Bundala (2012) offer evidence for factors affecting capital structure among listed companies. He includes the traditional factors that affect capital structure, namely; firm size, profitability, growth rate, asset tangibility, liquidity and dividend pay-out. He documents evidence for firm profitability and asset tangibility as two key determinants of capital structure. He further maintains that firm size and liquidity are indicative determinants of capital structure.

The motivation for this study came from the wide indication of product diversification among companies listed in Tanzania. The aim of the present study is to assess the effects of product diversification on capital structure using companies from Dar es Salaam Stock Exchange (DSE) in Tanzania. The innovation and contribution of this article is not based on finding the best combination of factors that explain a lot of effects on capital structure, but rather are fourfold. First, we offer empirical justification on how capital structure decisions are influenced by product diversification decisions among companies listed at DSE. Particularly, we demonstrate that related product diversification is related to internal financing, while unrelated product diversification is related to external financing. Second, we document panel data evidence for capital structure determinants from companies listed at DSE. Third, we offer empirical evidence, for capital structure dynamics from companies listed in Tanzania. Fourth, we offer capital structure determinants implications for researchers, managers and regulators in a Tanzanian and African business environment. This work was led by the following two specific objectives. One, to assess both separate and combined contributions of related and unrelated product diversification on capital structure of listed non-financial firms in Tanzania. Two, to assess the effects and speed of capital structure adjustment among listed non-financial firms in Tanzania.

Product Diversification Choices

The analysis of product diversification is based on business classification approaches. The Standard Industrial Classification (SIC) is one particularly popular classification approach based on United Kingdom business classification (Prosser, 2009). Product diversification is, therefore, the extent to which a firm is involved in more than a single business product or segment. The product or segment is taken as a proxy for core product types. For instance, an undiversified

business is one that is involved in only one type of product or segment. For example, a firm that sales furniture, household goods, hardware and ironmongery products, which all belong to SIC class (i.e. SIC code 46.15) is considered undiversified. Similarly, a firm that manufactures toys and games belonging to SIC 32.40 only, or manufactures electric motors, electric motors and transformers belonging to SIC code 27.11 only, is still considered as undiversified in its products. Conversely, a firm that, for example, produces products across two or more SIC codes is generally considered as diversified in its products (Menénde-Alonso, 2003; La Rocca *et al.*, 2009; Prosser, 2009; Kapaya, 2017).

The degree of relatedness in product diversification is normally judged by the level of product classification diversity entailed in the industry classification approach of a researcher's choice. A participation of a firm in *similar* but not *same* products that are within four SIC code digits is referred to as related product diversification (La Rocca *et al.*, 2009; Kapaya, 2017). For example, wholesale of sugar, chocolate and sugar confectionery (SIC code 46.36), and wholesale of coffee, tea, cocoa and spices (SIC code 46.37) are each four SIC digit codes. A firm producing in these both SIC codes, which vary only by at most the last two digits is considered related diversified in its products since the two SIC codes (i.e. 46.36 and 46.37 are considered *similar* or *related* but *not same*. The relatedness of a product is based on the degree of sharing of resources (such as technology, materials, labour and equipment) in products production or sale. The classes (i.e. 46.36 to 46.37) in this example share selling resources. Note as well that, this example does not refer to production or manufacturing of such same products in the example above, because that would be in other SIC classes. On a similar vein, for example, the manufacture of cocoa, cocoa butter, cocoa fat, cocoa oil is in SIC class 10.82, while the manufacture of ground coffee, soluble coffee, extracts, concentrates of coffee, tea and mate is in SIC class 10.83. In these classes (i.e. 10.82 and 10.83) grouping the sharing of resources is not based on selling resources but rather on manufacturing resources. These two SIC classes (i.e.10.82 and 10.83) are considered to be related since they are within four digits of SIC codes (Kapaya, 2017).

A participation of a firm in *dissimilar* or diverse products that vary within the first two digits of the SIC codes is considered as one with unrelated product diversification (La Rocca *et al.*, 2009). In this case, the SIC codes vary by the first two digits of SIC codes. These represent a wide range of variations in the production, services or sale of the products. Such products require independent resources in production, service or sale which would not allow sharing of resources. For example, the manufacture of distilled, portable, alcoholic beverages such as whisky, brandy, gin and liqueur, belong to SIC code 11. While, the manufacture of tobacco, chewing tobacco and snuff belongs to SIC code 12. A firm participating in both of these two SIC codes (i.e. SIC codes 11 and 12) is considered unrelated diversified. These two ranges of products vary by the first two digits, they are thus unrelated products. On the other hand, total product diversification is normally a combination of both related and unrelated product diversification. On a similar vein, it is worth noting that, while product diversification considers product mix across industry and time, product diversity considers product mix across industry within a particular time only (Kapaya, 2017).

Theoretical and Empirical Perspectives

Capital structure dynamics have been explained from different angles. The capital structure of a firm is often represented by the capital structure ratio. Which is the proportion of debt to equity or total assets or total capital employed. This is often referred to as financial leverage. The effects product diversification on capital structure has been explained mostly through the co-insurance effects theory, the agency cost theory and the transaction cost theory.

The Co-Insurance Effect Theory

Lewellen (1971) pioneered the idea of *co-insurance effect* for corporate outcomes. He maintained that the merging of two or more firms whose earning streams were less-than-perfectly correlated reduce the risk of default for the merged firms. This results in a mutual insurance of the merged firms, thereby increasing the debt capacity or borrowing ability of the merged firms (Kim and McConnel, 1977; Monteforte and Stagliano, 2014). On a similar thought, an involvement of a firm, merged or unmerged, in two or more diverse business segments or products, would arguably yield the same comparative co-insurance effect. Particularly, the co-insurance effect results into a reduction of operating risk emanating from imperfect correlations between cash flows of a firm running diverse businesses (La Rocca *et al.*, 2009). Debt capacity or borrowing ability and financial leverage would depend on the degree of the co-insurance effects present in the firm's product diversification strategy, such a firm should be able to absorb more debt (Singh *et al.*, 2003; La Rocca *et al.*, 2009; Kapaya, 2017).

The co-insurance effect present in a product diversified firm increases with the degree of product relatedness in the product diversification portfolio. The more unrelated a product diversification strategy is, the more the co-insurance effect that will result. Explicitly stated, it is expected that the co-insurance effect is more intense in a firm that follows on unrelated product diversification strategy. Therefore; co-insurance effect predicts a positive relationship between the degree of firm product diversification and capital structure variability.

The Agency Cost Theory

The Agency cost theory was first presented by Jensen and Meckling (1976) in explaining firm outcomes. The theory is rooted in the agency conflicts between firm's management and owners. In the presence of a corporate governance structure that does not serve the interests of shareholders (owners of the firm), they can use debt as governance tool to reduce the availability of free cash flows at the disposal of managers (Jensen, 1986; La Rocca *et al.*, 2009; Apostu, 2010). Increases in debt obligations, decreases free cash flows, decrease agency costs and conflicts, by turning away management from investing in value-decreasing assets. In this sense, debt is endorsed as an effective corporate governance mechanism to regulate managerial opportunistic behaviour which is detrimental to owners' interest (Apostu, 2010; Kapaya, 2017).

Agency cost theory and product diversification are related in the following ways. First, in line with conflict of interests between management and owners, the optimal balance between debt and equity is attained by increasing the benefits of debt against the cost of debt, by encouraging the use of debt in value-increasing product diversification investments against value-decreasing product diversification investments (Apostu, 2010). Explicitly stated, agency costs postulation indicates that product diversification, at times, can be considered as a value-decreasing

investment strategy. When this value-decreasing investments argument holds, the agency cost theory envisages a negative relationship between debt level and the degree of firm product diversification (La Rocca *et al.*, 2009). Conversely, based on monitoring effect arguments, Jensen (1986) maintains that debt could be endorsed by shareholders to play the disciplining role on managerial behaviour.

Secondly, once debt is introduced into the capital structure, a second conflict of interest arises between firm ownership and its financial liability. In highly levered firms, Chen *et al.* (1998) argue, the inducements for shareholders to drive managers into following riskier product diversification projects can give rise to “an asset substitution effect”, where equity instruments are substituted for debt instruments. Thus, a deterrent from shareholders for managers to use debt financing happens based on the need to protect ownership control. Therefore, the *agency costs theory*, based on the monitoring effect argument, predicts that to reduce agency conflicts and cost, shareholders may endorse product diversification investments in order to promote debt usage, thereby projecting a positive relationship between product diversification and capital structure. Conversely, in order to protect firm's value, based on the assets substitution effect argument and value-decreasing investment argument, shareholders may discourage debt usage, resulting into a negative relationship between product diversification and capital structure.

The Transaction Cost Theory

The transaction cost theory emerged from transaction cost economics, beginning with the works John R. Commons in 1931, it was popularised by Oliver Williamson in 1979 (Hartd, 2009; Valentinov, 2012). Basing on the theory's premises, Williamson (1988) contends that debt and equity are corporate governance substitutes and that the optimal capital structure depends on characteristics of firm's assets, particularly the level of re-deployability of assets in given situations. Debt, which closely proxy a market mode of organization is preferred when assets specificity is low, while equity, a proxy for internal organization, is inevitable when relationship specific investments are more prominent. The types of product diversification adopted by a firm rely on the nature of excess unutilised assets. Since the asset characteristics of a firm influence the financing decisions of a firm, it is possible to establish a relationship between product diversification and financing decisions through assets specificity effect arguments (La Rocca *et al.*, 2009; Kapaya, 2017).

When asset specificity is high, the assets of a firm are considered for specific or limited use only, inflexible, and thus illiquid. They are not easily re-deployable into alternative uses. Consequently, lenders will not be willing to offer loans to such a firm, as such the firm will inevitably use equity in its financing. In contrast, debt is the preferred possible financing tool in the presence of general use or flexible assets, which have low asset specificity level. They are more valuable as collateral and retain more of their value in the event of liquidation since they are highly solvent (Apostu, 2010). Similarly, firms diversify their activities in response to the presence of excess of unutilised assets. Firms will often adopt related product diversification strategy when they have excess of highly specific or inflexible assets because these are only easily transferable to similar or related business products. The presence of physical resources, intangible resources and internal financial resources are more associated with related product diversification. Conversely,

knowledge-based resources, other flexible resources, and external financial resources, are more associated with unrelated product diversification.

Transaction cost arguments suggest that, firms that are diversified across several business segments have a lower employment of specific assets and, hence, can support more debt (Chatterjee and Wernerfelt, 1991; Apostu, 2010). Therefore, related product diversification is associated with the availability of inflexible resources and it is related to internal financial resources. But, unrelated product diversification is associated with the availability of flexible resources. It normally attracts external financial resources, such as loans and bonds. Therefore, related product diversification is expected to be negatively related to capital structure ratios, while unrelated product diversification is expected to be positively related to capital structure ratios.

Diversification-Capital Structure Empirical Evidences

The relationship between product diversification and capital structure has limited evidence. Some studies have looked into this phenomenon within the developed economies context. One particular study is that of Kochhar and Hitt (1998), who showed that equity financing was associated with related product diversification, while debt financing was associated with unrelated product diversification. They documented that related product diversification brings in more specialised assets, whereas unrelated product diversification brings in assets less specialised to the firm. Their findings confirm the transaction cost theory postulations. They argue that less specialized assets have high liquidation value, and as a result, such assets attract more debt financing than specialized assets. They also indicate that related product diversification brings in more specialized assets whereas unrelated product diversification put in assets less specialized to the firm.

Menéndez-Alonso (2003) empirically researched 480 Spanish firms between 1991 and 1994 using panel data analysis. For robustness of the results, he applied several measures of capital structure; i.e. total debt ratio, a logistic transformation of total debt ratio, short-term debt ratio, and long-term debt ratio. He also applied two separate proxies of product diversification strategies; the Barry-Herfindahl index and the Entropy index of total product diversification. He then controlled for firms' specific characteristics such as; growth opportunities, firm size, intangible assets and firm profitability. He reports no significant relationship between product diversification and capital structure ratios.

La Rocca *et al.* (2009) critically researched the effects of product diversification on capital structure. They used a panel data from 190 Italian firms, covering the period from 1980 to 2006, where 76 were listed in stock markets. They tested a target adjustment model, estimated using Generalized Method of Moments (GMM) approach. They report that total product diversification negatively affect capital structure ratios. They indicate that product relatedness is vital in determining the type of contribution of product diversification to capital structure ratios. Confirming the transaction cost hypothesis, they showed that related product diversification, based on business resource sharing, was negatively related to capital structure ratios. They also found that, unrelated product diversification based on co-insurance effects and synergies was positively related to capital structure ratios. Moreover, they showed that product diversification

type causes different speeds of influence on capital structure ratios towards optimum ones. That is, firms pursuing related product diversification and firms that are undiversified move towards their optimum capital structure ratios more slowly while firms pursuing unrelated product diversification move towards their optimum capital structure ratios more quickly.

They observe, at 1% significant level, that the previous year's capital structure ratio has a positive effect on the current capital structure ratio. The coefficient of the lagged capital structure ratios level variable, $(1 - \alpha)$, interpreted according to the direction was in the range of 0.29–0.65. As a result, the parameter α , which measures a firm's rate of adjustment of the existing debt ratio on the way to a target debt ratio, was in the range 0.35-0.71. Consistent with transaction cost arguments, the adjustment process was shown to be a trade-off between the adjustment (transaction) costs involved in moving towards a target ratio and the costs of being in disequilibrium. Thus, firms that have adopted related product diversification have greater transaction costs and they consequently adjust their capital structure ratios slowly towards optimum ones. Unrelated product diversified firm, on the other hand, have lesser transition cost and as a result, they quickly adjust their capital structure ratios towards optimum ones.

Other empirical studies, e.g. Barton and Gordon (1988), Taylor and Lowe (1995), Kochhar and Hitt (1998), La Rocca *et al.* (2009), showed that firms pursuing unrelated product diversifications have higher capital structure ratios while those following related product diversifications have lower capital structure ratios. Their findings are consistent with the co-insurance effect and the transaction cost suggestions. That is, capital structure ratios increase with the *degree* of relatedness of product diversification. Similarly, the findings were consistent to the agency-cost theory which predicts that capital structure ratios decrease with the *degree* of relatedness level of product diversification, especially when the level of investments in product diversification detriments increases with the degree of relatedness of product diversification, based on value-decreasing investment arguments. However, studies by other researchers produced mixed results; Menéndez-Alonso (2003) and Singh *et al.* (2003) established a negative but insignificant relationship between capital structure ratios and total diversification, and La Rocca *et al.* (2009) established a negative but significant relationship between total product diversification and capital structure ratios. Conversely, Apostu (2010) confirms that firms that are involved in product diversification investments use more debt than firms that are not involved in any type of diversification investments.

Therefore, kind of resources in a firm and possibility of resource sharing lead to the kind of product diversification likely to be adopted. The type of product diversification matters in the ongoing debate and analysis of separate product diversification effects on capital structure ratios. Theoretical as well as empirical evidence is mixed on how the types of product diversification affect capital structure ratios, due to various reasons such as, industry types, approaches in analysis and study focus. The directions of effects between the types of product diversification on capital structure ratio rely on the pattern of diversification adopted. But, a related conclusion is based on the fact that, the related-unrelated degree of diversification or what we have noted as the level of relatedness, influence the speed at which product diversified firms adjust their capital structure ratios towards their optima.

Research Hypotheses

The study was guided by the following hypotheses. They are stated based on the reviewed theories and empirical findings above. H₁: The level of product relatedness influences capital structure leverage, among listed non-financial companies in Tanzania. H_{1A}: Related product diversification negatively affects capital structure ratios. Thus, related product diversification is influenced by internal financing. H_{1B}: Unrelated product diversification positively affects capital structure ratios. Thus, unrelated product diversification is influenced by external financing. H₂: Prior years' capital structure ratios influence subsequent years' capital structure ratios among listed non-financial firms in Tanzania. Thus, firms' capital structure ratios follow adjustment processes towards their optimal levels.

Methodology

Data and Variable Measurements

This study followed panel data regression modelling and analysis. It is argued that every time panel data is accessible, different scholars, practitioners, and students have been captivated by panel data modelling for the reason that this type of data has more variability and permit investigating more issues than do cross-sectional or time-series data alone (Park, 2011). Baltagi (2001) specifically argues that "Panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency" (p.6). The research study population panel is the firms listed on the Dar es Salaam Stock Exchange in Tanzania. It covers years from 1998 to 2014, where by 2015, 22 listed companies were listed on the stock exchange. The study was based on an unbalanced panel data design, running from 1998 to 2014, for a duration of 17 years to maximize the number of observations in the panel. The design excluded 11 highly regulated firms, particularly financial firms (banks and insurance firms), and included cross-listed non-financial companies. The final sample was made up of 8 non-financial local companies and 3 non-financial cross-listed companies. Therefore, the total design included 11 non-financial, both local and cross-listed companies (Dar es Salaam Stock Exchange, 2015, "Listed companies", para.1-2). Based on these exclusion and inclusion criteria, the maximum number of firm years (observations) was 128.

The data was mainly sourced from the Dar es Salaam Stock Exchange database. However, data on product diversification was obtained from the annual reports and complemented by management internal information on product diversification. The dependent variable was the ratio of total debt over total capital, defined as total debt plus equity), as this is considered to be the best estimate of past financing choices (e.g. Mayer and Whittington, 2003; Menéndez-Alonso, 2003; La Rocca *et al.*, 2009; Qian *et al.*, 2010). Consistent with dynamic adjustment arguments of capital structure which allows for measuring of speed of adjustment, the current study included lagged capital structure ratios. The study measured the dependent variables in book values rather than market values because of data limitations (Apostu, 2010).

The first group of independent variables included related unrelated and total product diversification. These variables were measured using *Entropy* measure, based on SIC codes categories and their respective products sales values. Entropy index as a measure of diversification is popularly used (e.g. Menéndez-Alonso, 2003; La Rocca *et al.*, 2009; Apostu,

2010). Thus, total product diversification (TDIVE) for a firm (i) and at a time (t), is given by $TDIVE_{i,t} = \sum_{j=1}^n P_j \ln\left(\frac{1}{P_j}\right)$; where P_j is the proportion of business sales of business or segment j defined by the 4 digit SIC codes. Unrelated product diversification (UDIVE) for a firm (i) and at a time (t) is given by $UDIVE_{i,t} = \sum_{j=1}^n S_j \ln\left(\frac{1}{S_j}\right)$; where S_j is the proportion of business (sales) of segment j defined according to the first 2 digits of the SIC code. Related product diversification (RDIVE) for a firm (i) and at a time (t) is given by $RDIVE_{i,t} = TDIVE_{i,t} - UDIVE_{i,t}$. It's worth noting that, as in La Rocca et al. (2009) and Apostu (2010), SIC business segments are used as proxies for product diversification.

A second group of independent variables included the lagged variable in the dynamic model (L.TGEAR) (e.g. La Rocca et al., 2009; Apostu, 2010), and firm-specific characteristics as control variables in the models. These were; Asset tangibility (TANG): non-current assets to total assets (e.g. La Rocca et al., 2009; Apostu, 2010). Firm size (SIZE): natural logarithms of total assets (e.g. Menéndez-Alonso, 2003; La Rocca et al., 2009). Profitability (PROF): the ratio of earnings before interests, taxes, depreciation and amortization to total assets (e.g. Apostu, 2010; Vries, 2010; Oh et al., 2014). Growth opportunities (GROP): sales annual growth rate (e.g. Apostu, 2010; Oh et al., 2014). Going concern (GOCO): age of the firm in number of years since incorporation (e.g. Menéndez-Alonso, 2003; La Rocca et al., 2009; Apostu, 2010). Non-debt tax shields (NDTS): the ratio of depreciation and amortization on total assets (e.g. Booth et al., 2001; Menéndez-Alonso, 2003; La Rocca et al., 2009; Apostu, 2010).

Regression Models

The analysis relied on panel data regression techniques. The fixed effect (FE), random effects (RE) and general methods of moments (GMM) techniques were employed in the search for the best model that fits the data better as research analysis would require. The model incorporated industry and time dummies to control for threat of omitted variable biases and to facilitate pooling of different firms into a single sample. The analysis used both the static regression model (1) and dynamic regression model.

$$D_{i,t} = \mu_i + \beta X_{i,t} + \gamma Z_{i,t} + d_t + v_i + \varepsilon_{i,t} \dots \dots \dots (1)$$

$$D_{i,t} = \mu_i + \delta D_{i,t-1} + \beta X_{i,t} + \gamma Z_{i,t} + d_t + v_i + \varepsilon_{i,t} \dots \dots \dots (2)$$

Where;

μ_i : A constant term of each firm i.

$D_{i,t}$: The capital structure {TGEAR} of firm i at time t.

$D_{i,t-1}$: A lagged dependent variable for firm i at time t-1.

$X_{i,t}$: Diversification variables {DIVE}, decomposed into; (related diversification {RDIVE_{i,t}}, unrelated diversification {UDIVE_{i,t}}, or total diversification {TDIVE_{i,t}} for firm i at time t).

$Z_{i,t}$: Conventional variables (TANG_{i,t}, SIZE_{i,t}, PROF_{i,t}, GROP_{i,t}, GOCO_{i,t}, NDTS_{i,t}) for firm i at time t.

β : A vector of coefficients for all diversification strategies.

γ : A vector of coefficients for conventional variables.

δ : A coefficient for lagged dependent variable.

d_t : Time-effect dummies for time t.

v_i : Industry-effect dummies for firm i.

$\varepsilon_{i,t}$: The error term for unobserved heterogeneity conditions for firm i at time t.

Model (1) is a static regression model while Model (2) is a dynamic regression model.

Data Analysis, Techniques and Estimation

The analysis involved descriptive statistics and tests of differences between the related and unrelated diversified firms. ANOVA and T-test were done for a robust comparison of the groups. This as in La Rocca *et al.* (2009) helped establish if firms are following separate product diversification based on firms' characteristics. The regression analysis was in three parts. First, the analysis compared the static model's specifications and performance to meet the assumptions of regression modelling. The F-test confirmed firm and time effects. The Breusch-Pagan Lagrange multiplier (LM) test confirmed the absence of random effects. Further, the Hausman test confirmed the choice of a fixed effect model (FEM) for our regression analysis. Due to the presence of fixed effects, the regression was initially based on the FEM, which employed least square dummy variable one approach (LSDV1). Its name underscores its procedure, in that it applies dummy variables, but in its calculation, drops the first dummy. The method is a good way to understand fixed effects and how they are controlled (Park, 2011). The dummy variables were statistically significant, indicating that they were useful in absorbing the unobservable heterogeneities, which results from differences in firms' characteristics and time conditions. This way pure effects of independent variables on dependent variables were reliably estimated. Since results were sensitive in the way robust standard errors were computed, standard errors autocorrelation across panels, contemporaneous correlations in the error term and heteroscedasticity, to control for these additional issues, the FEM was improved through the use of Prais-Winsten Clustered Standard Errors (PCSE).

Second, previous studies (e.g. Kremp *et al.*, 1999; Ozkan, 2001; La Rocca *et al.*, 2009; Apostu, 2010) have put emphasis on the dynamic adjustment effects in the capital structure. Following the recommendations by La Rocca *et al.*, (2009) and empirical evidence from these studies, the dynamic effects of previous year capital structure ratios on current capital structure ratios were analysed. Since there is no one single comprehensive technique that can address all known regression limitations and assumptions, two different techniques were used to analyse the dynamic effects, namely; the lagged PCSE estimator and the General Method of Moments (GMM) estimator, the latter being a comprehensive method that further developed by Arellano-Bond (1991). This estimator, used by for example, La Rocca *et al.* (2009) and Apostu (2010), is considered to be more robust because, it eliminates firms' non-observable specific effects given the estimates in first difference; it controls for possible endogeneity since lagged values are used as instruments, and it eliminates correlations between lags of the dependent variable and the error term. Particularly, La Rocca *et al.* (2009) noted that, panel data and the GMM estimator, when used in studies of the dynamic capital structure at firms' level, help to eliminate unobservable heterogeneity and control for endogeneity problems in the analysis. Third, the amount of factors contribution to effects on capital structure ratios was accounted for through the use of hierarchical regressions analysis.

Findings and Discussion

Product Diversification

Centered on the study's 128 observations, results in Table 1 showed that total product diversification (TDIVE) had a mean of 0.528 with standard deviations of 0.307 demonstrating a considerable amount of variability across firms and over the years. Related product diversification (RDIVE) was lower at a mean of 0.458 while unrelated product diversification (UDIVE) was much lower at mean of 0.114. Their individual standard deviations were respectively 0.332 and 0.222, which specify substantial variability in these types of product diversification over time and between firms. La Rocca *et al.* (2009) used 2,085 observations, a much large panel and found that the mean for total, related and unrelated product diversification were 0.391, 0.172 and 0.219 separately. Their individual standard deviations were 0.445, 0.298 and 0.358 separately.

Table 1. Descriptive Analysis

	Count	Mean	Std. Dev	Min	Max
TGEAR	128	0.4690	0.2494	0.1312	1.0884
RDIVE	128	0.4580	0.3328	0.0000	1.6321
UDIVE	128	0.1148	0.2227	0.0000	0.6919
TDIVE	128	0.5289	0.3076	0.0000	1.6321
TANG	128	0.5449	0.1657	0.1953	0.8786
SIZE	128	24.390	1.6830	20.649	27.610
PROF	126	0.2884	0.2329	-0.3206	1.0910
GROP	116	0.1490	0.1979	-0.6870	1.1140
GOCO	128	39.875	20.410	1.0000	84.000
NDTS	123	0.0625	0.0530	0.0064	0.3954
<i>N</i>	128				

The variability was not very diverse from this study's panel, signifying that product diversification has been changing over time and among companies and is probably not based on a stochastic process or random chance. Such a changeability helps to point to the fact that companies listed at DSE have been wilfully selecting product diversification strategies for numerous drives and returns which product diversification offers. These returns are such as firm expansion, profit-making, acquisitions, shareholders controlling the management, responding to market needs, reducing business risk, responding to the presence of unutilized resources in the firms, beating and timing the competition and the need to expand and grow.

Table 2. Anova and T-test

Variables	Count	Means for each variable		Mean [diff.]	Test statistics	
		Related [means]	Unrelated [means]		ANOVA [F]	T-test [T]
TGEAR	128	0.383607	0.650314	-0.26671	42.21***	- 6.4972***
RDIVE	128	0.575717	0.208224	0.36749	46.03***	6.7843***
UDIVE	128	0.003582	0.350849	-0.34727	144.10***	- 12.004***
TDIVE	128	0.579300	0.421912	0.15739	7.68***	2.7708**
TANG	128	0.501945	0.635923	-0.13398	21.11***	- 4.5948***
SIZE	128	24.79804	23.52403	1.27401	18.12***	4.2568***
PROF	126	0.362085	0.130005	0.23208	34.34***	5.8598***
GROP	116	0.152251	0.142046	-0.01021	0.07	0.2577
GOCO	128	39.41379	40.85366	-1.43987	0.14	-0.3711
NDTS	123	0.059138	0.070455	-0.01132	1.18	-1.0872
N	128	87	41			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

On the other hand, in the univariate analysis in Table 2, companies' characteristics or factors indicated statistically significant differences. The treatment involved two groups i.e. companies that followed related product diversification and companies that followed unrelated product diversification. The differences were in terms of capital structure or gearings for total gearing usages. Also in terms of differences in assets structures, tangibility of assets, size of the firms and firms' profitability. Such differences point to the fact that firms embarking on related product diversifications were constrained by factors which only allow them to diversify in similar or related business lines. While, on the other hand, firms that adopted unrelated product diversification were few and were only probably able to do so, across unrelated business segments. The findings confirmed that related product diversified firms were less levered while the unrelated product diversified firms were more levered, although they were few in number. The related diversified firms did not have much of a combination of the two type of product diversification, while the unrelated product diversified firms had more of the combination of the two types of product diversifications, based on their means.

Supporting the co-insurance hypothesis argument, related product diversification (Table 3) is negatively related to capital structure ratio as expected, indicating that it is more associated with internal financial resources than debt. Similarly, unrelated product diversification is positively related to capital structure ratio, indicating that it is more associated with external financing particularly debt than internal financing. The latter case, support the monitoring effect argument based on agency cost theory. The negative relationship between profitability and capital structure ratio indicate a possible substitutionary financing effects between debt and retained profit. Size is

negatively associated with capital structure ratio indicating that it is not key to increasing debt usage. Conversely, tangibility is positively associated with capital structure ratio indicating that it is increasing debt financing. Related and unrelated product diversification are negatively related, confirming that they are two possible dimensions of product diversification with differentiated effects on firms' outcomes. Profitability is positively (negatively) associated with related (unrelated) product diversification as expected. Against the Transaction cost hypothesis, tangibility which proxies assets inflexibility is negatively (positively) associated with related (unrelated) product diversification.

Table 3. Correlation Analysis

	TGEA R	RDIV E	UDIV E	TDIV E	TANG	SIZE	PROF	GRO P	GOC O	NDT S
TGEA R	1									
RDIV E	-0.225*	1								
UDIV E	0.525** *	- 0.377* **	1							
TDIV E	0.0086 9	0.910* **	- 0.0374	1						
TANG	0.484** *	- 0.327* **	0.322* **	- 0.180*	1					
SIZE	-0.203* 9	0.0212	-0.152	- 0.081 9	- 0.0570	1				
PROF	- 0.596** *	0.297* **	- 0.479* **	0.112	- 0.397* **	0.429* **	1			
GROP	0.0266	- 0.0483	- 0.0597	- 0.088 5	- 0.0217	0.115	0.213* 1			
GOCO	- 0.0983	- 0.0862	- 0.0344	- 0.070 2	0.154	0.401* **	0.229* *	- 0.031 6	1	
NDTS	0.138	0.160	0.0287	0.204* 3	0.0569	-0.156	0.130	- 0.028 3	0.061 0	1
N	128									

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In the multivariate regression analysis, the results indicated that total product diversification is positively related to capital structure ratio in both the static and dynamic models. The relationship was significant for all models (Table 4). This is consistent with the agency cost

monitoring effect argument. This is contrary to the findings of La Rocca *et al.* (2009) and Apostu (2010) who found a negative and significant relationship between the two. As noted earlier, the *agency costs theory* predicts that debt will be used for monitoring purposes against self-interests oriented management. Consequently, shareholders will promote the use of debt through value-enhancing investments, such as product diversification, as a device to discipline managerial behaviour up to the point when their objective is realised. Hence, we expect a positive relationship between total product diversification and capital structure ratios up to that realization. Thus, founded on theoretical notion and findings, it appears that owners of companies listed at DSE are not considering total product diversification strategy employed as detrimental to the interests of the firms. Similarly, based on co-insurance postulation; the positive relationship between unrelated product diversification and capital structure ratio confirms the existence of co-insurance effects from investments that yield uncorrelated cash flows. Such sorts of cash flows reduce business risk and thereby making the firm more attractive to lenders. Conversely, this effect is not possible in related product diversified firms as witnessed by the negative relationship between related product diversification and capital structure ratio.

Table 4. Regression Model Estimations

	(1) LSDV1		(2) PCSE		(3) dPCSE		(4) GMM_ab	
CONSTANT	4.064*	(2.17)	4.064***	(3.50)	3.594***	(4.58)	1.892**	(2.78)
L.TGEAR					0.660***	(10.20)	0.689***	(11.87)
RDIVE	-0.234	(-1.50)	-0.234**	(-2.64)	-0.114	(-1.73)	-0.106*	(-2.35)
UDIVE	0.0277	(0.21)	0.0277	(0.24)	0.147**	(2.71)	0.146***	(4.35)
TDIVE	0.370*	(2.22)	0.370***	(4.49)	0.252***	(3.77)	0.197***	(6.32)
TANG	0.0528	(0.33)	0.0528	(0.70)	0.101	(1.56)	0.119	(1.26)
SIZE	-0.0832	(-1.13)	-0.0832	(-1.76)	-0.127***	(-3.46)	-0.0923*	(-2.46)
PROF	-0.175	(-1.63)	-0.175*	(-2.08)	-0.362***	(-5.58)	-0.404**	(-2.75)
GROP	0.120	(1.60)	0.120*	(2.57)	0.187***	(5.16)	0.197***	(5.23)
GOCO	-0.123	(-0.99)	-0.123*	(-2.24)	-0.0407	(-1.36)	0.0109**	(2.65)
NDTS	0.737**	(2.90)	0.737**	(2.74)	0.700***	(4.52)	0.419***	(3.76)
N	112		112		112		100	
DF			33		34			
R ²	0.868		0.868		0.936			
R ² _adjusted	0.807							
RMSE	0.110		0.110		0.0768			
MSS	6.040		6.040		6.519			
RSS	0.921		0.921		0.443		1.104	
F	14.23							
Chi2			343318.5		511479.9		341062.7	
SARGAN:	<i>Sargan test of overidentifying restrictions:</i>						chi2(90)=95.48814	
	<i>H0: overidentifying restrictions are valid</i>						Prob >chi2=0.3262	

ABOND:	<i>Arellano-Bond test for zero autocorrelation in first-differenced errors</i>	z	Prob > z
	<i>H0: no autocorrelation</i>		
Order(1)		-2.2361	0.0253
Order(2)		-1.1472	0.2513

t statistics in parentheses, level of significance * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Capital Structure Ratios Levels and Adjustments

In this study's analysis, the level of capital structure is evidently variable. The standard deviation of 0.249 for capital structure ratio shows a considerable economy in variation (Table 1). This variability from 112 (note that there is a loss of observations from 128 to 112 for models 1, 2 and 3, and 100 for model 4, this is due to lagging of variables) observations is close to that of La Rocca *et al.* (2009) who documented a standard deviation of 0.235 from 2085 observations. Latridis and Zaghmour (2013) based on a comparative study for Moroccan and Turkish firms find standard deviations of 0.1693 and 0.1741 respectively. In this study's findings, capital structure ratio was at the mean of 47% and standard deviation of 0.249 compared to the means of 9.19% and 13.75% respectively for Latridis and Zaghmour (2013) in their two countries sub-samples. Akinyomi and Olagunju (2013) based on a sample of 240 observations found a mean gearing of 57.6% and standard deviation of 0.074 for firms listed in Nigeria. Kodongo *et al.* (2014) based on Kenyan listed firms found the mean for gearing was 57% with a standard deviation of 0.233. Similarly Hove and Chidodo (2012) employing 84 observations from listed companies in Zimbabwe found equivalent results, where total gearing was at the mean of 23.8% with a standard deviation of 0.2187. Thus, DSE firms are in range with other comparable countries in terms of variability and level of capital structure ratio. This points to the fact that this variability in capital structure ratio is not inadvertent or accidental. There are influences that can be accredited to it.

Capital Structure Ratios Speed of Adjustments

A further aspect of capital structure variability is measured by considering the speed of adjustment of capital structure ratio across firms and time concurrently as recommended by Abor (2007; 2008), La Rocca *et al.* (2009) and Apostu (2010). The dynamic regression analysis has an added important advantage; it can depict this speed. If the coefficient $(1 - \alpha)$ is close to 1, the adjustment process is slow; if it is close to 0, then adjustment occurs rapidly (La Rocca *et al.* 2009). The lagged total debt variable coefficient (L.TGEAR) was 0.660 and significant at 0.001 level (in model 3, Table 4), indicating that for a 1 unit increase in prior year's gearing there is a 0.660 increase on proceeding years' gearing. According to Moyo *et al.* (2013), firms have target leverages towards which they adjust over time. Based on the procedure suggested by La Rocca *et al.* (2009) and Apostu (2010) for extracting alpha values (α), which measures the speed of adjustment or transaction costs of debt, it was found to be in the range 0.311 to 0.340 (i.e. $1 - \alpha =$ lagged debt coefficient) thus $1 - \text{lagged debt coefficient} = \alpha$, i.e. $1 - 0.66 = 0.34$ for dPCSE estimator and 0.311 for GMM_ab estimator (model 4, Table 4). Therefore based on this finding by considering the lowest and the highest alpha values in the dynamic models, alpha is in the range of 0.311-340 and below 0.5 and is approaching 0, it is evident that firms at DSE do not adjust their capital structure ratios (total debt) automatically, capital structure ratios also seem to

stay close to their previous years values (i.e. 0.660, 0.689), there are high transaction costs associated with increasing total debt, the costs associated with being in disequilibrium are low and thus firms slowly adjust their capital structure ratios.

Moyo *et al.* (2013) maintain that if the speed of adjustment is zero, firms have no leverage targets and therefore do not follow an adjustment process. But in cases where the speed of adjustment is greater than zero, then firms have capital structure target levels that they adjust to. Therefore, firms listed in DSE seem to have target debt levels to which they struggle to adjust to. These firms seem to slowly adjust to their total gearing due to their low adjustment coefficients. Moyo *et al.* (2013) further indicate that, in a perfect market, firms always sustain their target or optimal ratio; but in an imperfect market, firms merely slowly adjust because of information asymmetries, transaction and adjustment costs. A similar conclusion can be inferred in our results (Table 4). The results depict the following facts which support findings of Moyo *et al.* (2013) that the speeds of target adjustment differ between countries, reflecting the disparity in various factors. Countries such as Tanzania, with unpredictable legal systems, unfavourable institutional features and unstable or stagnant or slowly growing economies will exhibit a low speed of adjustment. These characteristics increase adjustment costs and hence hinder faster and more frequent adjustment.

Influence of Product Diversification on Capital Structure Ratios

Related product diversification was negatively related to capital structure ratios, the results were significant in the GMM_ab estimator (Table 4). This finding is consistent with that of La Rocca *et al.* (2009) and Apostu (2010). It is consistent with the *co-insurance effects theory*, which suggests that product diversification in related business segments results into correlated returns, this does not lower returns volatility. This in turn discourages lenders from offering loans, and vice versa. Therefore, internal financing, that is retained profit, is more connected to related product diversification (Table 3). A negative and significant relationship between related product diversification and capital structure ratio was expected and consequently supported by the findings. The positive and significant correlation between profitability and related product diversification (Table 3) highlights the fact that retained profits services a financing role for related product diversification in our panel.

Unrelated product diversification was consistently positively related to capital structure ratios. The results were significant in the dynamic regression models. The positive relationship highlights the fact that investment in unrelated products results in uncorrelated cash flows thus reducing the risk of business, thus easily attracting external financing particularly debt. This is consistent with the *co-insurance theory*. On the other hand, unrelated product diversification investments lower cash flow risk and consequently lending costs. Thus, unrelated product investments are attractive to lenders due to increased debt capacity projected by such firms. Total product diversification was positively significantly related to total gearing. The effects of unrelated product diversification outweighed that of related product diversification in the total product diversification index. Thus, total product diversification investments seem to be attractive to lenders. Such a scenario can be attributed to perceived reduced risk that is offered by product diversification advantages. The monitoring effect argument based on agency cost theory

is supported by the findings, hence lending an alternative explanation to the results. Shareholders seem to endorse debt financing to curtail management self-interest motives.

Table 5. Hierarchical Regression Models for R-Squared Change

Model	Added variable(s)	R ²	p-values	R ² change	p-values
1:	(TANG SIZE PROF GROP GOCO (L.TGEAR)	0.858***	0.000		
	(RDIVE)	0.928***	0.000	0.070***	0.000
	(UDIVE)	0.929***	0.000	0.000	0.522
		0.932***	0.000	0.004*	0.040
2:	(TDIVE)	0.936***	0.000	0.004*	0.034
3:	(RDIVE UDIVE TDIVE)	0.936***	0.000	0.008*	0.027

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

A point on the economic contribution of factors is highlighted by the hierarchical regression analysis. It indicated that the contribution of product diversification to capital structure variability was 0.041 (4.1%). This finding was statistically significant (Table 5). It indicates that this factor, when taken in its totality, has a large and significant contribution which needs to be accounted for during capital structure decisions. Prior years' capital structure ratios seem to have a substantial impact (7.0%) as well on capital structure ratios, significant at 0.1%.

Conclusions, Recommendations and Future Research

Conclusions

The findings point to the importance of product diversification in its various types in influencing financing choices of firms at DSE. It contributes to the understanding of motivations behind firms financing. The difference in the directions of effects for related and unrelated product diversification helps to point to the fact that the type of product diversification adopted by the firm matters in capital structure choices. The separate effects of related and unrelated product diversification on capital structure help to point to the fact that the nature of firm cash flows prescribes the kind of product diversification to be considered by a particular firm in order to attract the desired financing option.

The negative relationship between related product diversification and capital structure indicate that related product diversification is associated with internal financing; such as retained profits. Firms are forced to use internal financing to finance related product diversification investments. Such investments do not attract lenders due to high risks resulting from highly correlated returns. These investments discourage managers to borrow due to high debt transaction costs reflected by debt markets. The high costs are due to high risks from such correlated cash flows. Conversely, the positive relationship between unrelated product diversification and capital structure helps to point to the fact that, the presence of uncorrelated cash flows projected by unrelated product diversification investments reduces a firm's risk profiles thus attracting more debt financing among such firms. The varying and increasing levels of product diversification over time and across firms help to point to the presence of conscious diversification policies employed by firms to take advantages of various benefits that product diversification entails, such as business risk reduction, staying competitive, expansion motives and trying to grow big among others.

Capital structure ratios adjustments point to the fact that firms are trying to adjust their capital structure to reflect the costs and advantages of each financing choice. The speed of adjustment helps to depict the fact that firms are trying to move their capital structures towards optimum ones. The low speed of adjustment of capital structure ratios indicates that the cost of adjustment is rather high among DSE firms. Thus, transaction costs (such as legal, litigation, interests, listing and information) both direct and indirect seem to be high among DSE companies. Prior years' capital structure ratios are closely predicting proceeding years' debt levels. As noted previously firms are cautiously adjusting their debt levels, keeping them in line with prior years' levels. Such capital structure ratios are adjusted so cautiously towards optimum ones due to the risk eminent from debt usage.

The huge R^2 in the range of 0.868—0.936 and the adjusted R^2 at 0.807 (Table 4) account for a very large and substantial effects of these factors under study on capital structure ratios. This evidences the importance of these factors during capital structure decisions. In Table 5, the R^2 change for L.TGEAR was big (0.07) and significant followed by TDIVE, UDIVE and RDIVE (0.041) when entered together, but it is 0.04 when only TDIVE is entered alone. Since the changes were large and significant, it indicates that these factors are crucial and critical in capital structure decisions. Thus, managements, policymakers, regulators and investors need to account for these factors when making policy, regulating the financial markets, and investing in these listed companies.

Recommendations

Due to high transaction costs that are indicative from the dynamic adjustment analysis, it is important that transaction cost resulting from information asymmetry, listing requirements, information flow, legal litigation and interests' obligations be studied and monitored to reduce transaction costs, to improve transparency, to improve the flow of correct and reliable information to investors and lenders. This will help firms easily adjust their capital structure ratios to maximize their financing choices.

Companies at DSE are evidently product diversified. Specifically, they are following both related and unrelated product diversification strategies. Thus, investors need to invest among firms that are embarking on unrelated product diversification due to reduced business risk from uncorrelated cash flows. But, similarly, when constructing their investment portfolios, it is significant that they choose firms according to a combination of related and unrelated product diversification, rather than investing only on companies with only related product because that would signal high risk in their investments portfolios. Companies that are well diversified in unrelated products normally exhibit uncorrelated cash flows, which normally result in low business risk and high profitability. Therefore, banks and lenders need to consider product diversification as a criterion for screening debt candidates.

Investments through product diversifications have both implicit and explicit effects on capital structure of firms. Therefore, the management needs to undertake such investments with informed practices on how product diversification and its types affect their companies' capital structure and consequently cash flow, profitability and value. Consequently, the types of product

diversification adopted by the management matters in capital structure choices. The study recommends that companies should diversify across projects as a way to make cash flows more predictable thereby decreasing the agency costs of decision-making prudence.

Further, with a possibility of business synergies and resources sharing in the presence of resources such as skills, machinery, equipment and finance; companies should not hesitate to diversify their business. But, equally important is the fact that related product diversification is more related to internal financing while unrelated product diversification is more related to external financing. Therefore, it is prudent to finance related product diversification with internal financing and finance unrelated product diversification with external financing. Firm-specific factors, such as tangibility, size, profitability, non-debt tax shield, going concern and growth opportunity seem to account for a large share of variability on capital structures of these firms. Thus, these factors need to be taken into serious account when considering capital structure decisions.

Future Research

Studies need to look at the possible interactive effects of related and unrelated product diversification on capital structure and other firm outcomes. A separate analysis could be for related and unrelated product diversification within large samples to help verify these findings. More samples based on the industry could be involved in the analysis for comparative purposes. The research needs to extend into other types of product diversification by identifying international diversification and how it impacts capital structure ratios and other firm outcomes. In line with the co-insurance effects hypothesis, research on cash flow volatility need to be done to ascertain the nature of firms' cash flows and product diversification and how they impact capital structure ratios and other firm outcomes. Based on transaction cost hypothesis, more research needs to look at nature and structure of firm resources and how they influence product diversification and consequently capital structure and other firm outcomes. The agency cost offers a green field in which corporate governance factors in conjunction with product diversification decisions could be studied to establish the role of shareholders through boards of director could influence product diversification investments and therefore capital structure decisions and other firm outcomes.

References

- Abor, J. (2007). Capital structure and financing of SMEs: Empirical evidence from Ghana and South Africa. Athesis for the award of PhD degree at the University of Stellenbosch, Stellenbosch, Republic of South Africa. 245pp.
- Abor, J. (2008). Determinants of the capital structure of Ghanaian firms. *AERC Research Paper 176*, African Economic Research Consortium.
- Akinyomi, O.J., and Olagunju, A.A., (2013). Determinants of capital structure in Nigeria. *International Journal of Innovation and Applied Studies*. 3(4): 999-1005.
- Al-Najjar, B., and Hussainey, K. (2011). Revisiting the capital-structure puzzle: UK evidence. *The Journal of Risk Finance*. 12(4): 329 – 338.

- Apostu, A. (2010). The effects of corporate diversification, strategies on capital Structure: An empirical study on European companies. A dissertation for the award of MSc. In Finance and International Business at Aarhus University, Nordre Ringgade, Denmark. 103pp.
- Arellano, M., and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *Review of Economic Studies* 58, 277–297.
- Barclay, M. J., and Smith, C. W. (2005). The capital structure puzzle: The evidence revisited. *Journal of Applied Corporate Finance*. 17 (1): 8-17.
- Baltagi, B. H. (2001). *Econometric analysis of panel data*. (2ndEd). Chichester, John Wiley and Sons.
- Bokpin, G. A., and Arko, A. C. (2009). Ownership structure, corporate governance and capital structure decisions of firms: Empirical evidence from Ghana. *Studies in Economics and Finance*. 26(4): 246-256.
- Benito-Osorio, D., Guerras-Martín, L. A., and Zúñiga-Vicente, J. A. (2012). Four decades of research on product diversification: A literature review. *Management Decision*. 50(2): 325-344.
- Booth, L., Aivazian, V., Demircuc-Kunt, A., and Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance*. 56: 87-130.
- Bradley, M., and Chen, D. (2014). Does Board Independence Reduce the Cost of Debt? (Unpublished).
- Bundala, N. N. (2012). Do Tanzanian companies practice pecking order theory, agency cost theory or trade-off theory? An empirical study in Tanzanian listed companies. *International Journal of Economics and Financial Issues*. 2(4): 401—422.
- Chatterjee, S., and Wemerfelt, B. (1991). The link between resources and type of diversification: Theory and evidence. *Strategic Management Journal*. 12: 33—48.
- Chen, L.H., Lensink, R., and Sterken, E. (1998). The determinants of capital structure: Evidence from Dutch panel data. Paper presented at the European Economic Association Annual Congress, Berlin.
- Coase, R. H. (1937). The Nature of the Firm. *Economica*. 4(16): 386--405.
- Commons, J. R. (1931). Institutional Economics. *American Economic Review*. 21(4): 648–657.
- Fauzi, F., and Locke, S. (2012). Board structure, ownership structure and firm performance: a study of New Zealand listed-firms. *Asian Academy of Management Journal of Accounting and Finance*. 8(2): 43–67.
- Fauzi, F., Basyith, A., and Idris, M. (2013). The determinants of capital structure: An empirical study of New Zealand-listed firms. *Asian Journal of Finance and Accounting*. 5(2): 1-21.
- Gill, A., Biger, N., Mand, H. S., and Shah, C. (2012). Corporate governance and capital structure of small business service firms in India. *International Journal of Economics and Finance*. 4(8): 83-92.
- Gul, S., Malik, F., Siddiqui, M. F., and Razzaq, N. (2013). Corporate governance and financing decisions of listed firms in Pakistan. *European Journal of Business and Management*. 5 (23): 74-81.
- Hardt, L. (2009). The history of transaction cost economics and its recent developments. *Erasmus Journal for Philosophy and Economics*, 2 (1) 29-51.

- Hussainey, K., and Aljifri, K. (2012). Corporate governance mechanisms and capital structure in UAE, *Journal of Applied Accounting Research*. 13(2): 145-160.
- Hove, B., and Chidoko, C. (2012). Examination of multinational corporate capital structure decisions in Zimbabwe. *International Journal of Economic Research*.3(2): 1-15.
- Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm: managerial behaviour, agency costs and capital structures. *Journal of Financial Economics*. 3:305-60.
- Jensen, M. C. (1986) Agency costs of free cash flow, corporate finance and takeovers. *Am Econ Rev* 76:323–339.
- Kapaya, S. M. (2017). Capital structure variability of firms listed on the Dar es Salaam stock exchange: assessing the role of product diversification. A thesis for the award of PhD degree at Open University of Tanzania, Dar es Salaam, United Republic of Tanzania. 207pp.
- Kim, E. H., and McConnell, J. J. (1977). Corporate mergers and the co-insurance of corporate debt. *Journal of Finance*.32: 349-365.
- Klein, P.G., and Lien, L.B. (2009). Diversification, industry structure, and firm strategy: An organizational economics perspective, economic institutions of strategy advances in strategic management. *Emerald Group Publishing Limited*.26: 289–312.
- Kochhar, R., and Hitt, M. A. (1998). Linking corporate strategy to capital structure: Diversification strategy, type and source of financing. *Strategic Management Journal*.19: 601—610.
- Kodongo, O., Mokoaleli-Mokoteli, T., and Maina, L. (2014). *Capital structure, profitability and firm value: Panel evidence of listed firms in Kenya*. MPRA Paper No. 57116.
- Kremp, E., Stoss, E., and Gerdesmeier, D. (1999). Estimation of a debt function: Evidence from French and German firms panel data. In: Sauve A., Scheuer M. (eds.). *Corporate finance in Germany and France*. Deutsche Bundesbank and the Banque de France. 139-194.
- La Rocca, M., La Rocca, T., Gerace, D., and Smark, C. (2009). Effect of diversification on capital structure. *Accounting & Finance*.49: 799-826.
- Latridis, G.,and Zaghmour, S. (2013). Capital structure in the MENA region: empirical evidence from Morocco and Turkey. *Investment Management and Financial Innovations*. 10 (1):68-77.
- Lewellen, W. G. (1971). A pure financial rationale for the conglomerate merger. *Journal of Finance*.26: 527–537.
- Menéndez-Alonso, E. J. (2003). Does diversification strategy matter in explaining capital structure? Some evidence from Spain. *Applied Financial Economics*.13(6): 427—430.
- Modigliani, F., and Miller, M.H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*. 68(3): 261—97.
- Modigliani, F., and Miller, M. (1963). Corporate income taxes and the cost of capital: A correction'. *American Economic Review*. 53: 443—453.
- Monteforte, D., and Staglianò, R. (2014). Firm complexity and capital structure: Evidence from Italian diversified firms. *Managerial and decision economics*.1-16.
- Morellec, E., B. Nikolov, and Schurhoff, N. (2012). Corporate governance and capital structure dynamics. *Journal of Finance*. 67:803-848.
- Moyo, V., Wolmarans, H.P., and Brummer, L.M., (2013). Dynamic capital structure determinants: Some evidence from South African firms, *Journal of Economics and Financial Science*. 6(3): 661-682.

- Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*. 39:575-592.
- Myers, S. C., and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics*, 13, 187-221.
- Obradovichi, J., and Gill, A. (2013). The impact of corporate governance and financial leverage on the value of American firms, Faculty Publications and Presentations. Paper 25.
- Oh, C. H., Sohl, T., and Rugman, A. M. (2014). Regional and product diversification and the performance of retail multi-nationals. Discussion Paper, Number: JHD-2014-02, John H Dunning Centre for International Business, Henley Business School, and University of Reading.
- Ozkan A. (2001). Determinants of capital structure and adjustment to long run target: Evidence from UK company panel data. *Journal of Business Finance & Accounting*. 28 (1/2): 175-198.
- Park, H. M. (2011). *Practical Guides to Panel Data Modeling: A Step-by-step Analysis Using Stata*. Tutorial Working Paper. Graduate School of International Relations, International University of Japan.” This document is based on Park, Hun Myoung. 2005-2009. *Linear Regression Models for Panel Data Using SAS, Stata, LIMDEP, and SPSS*. The University Information Technology Services (UITS) Center for Statistical and Mathematical Computing, Indiana University.
- Prosser, L. (2009) (ed.). UK Standard Industrial Classification of Economic Activities (SIC) (2007): Structure and explanatory notes. Office of National Statistics, Palgrave-Macmillan, Thousampton.
- Qian, G., Khoury, T., Peng, M., and Qian, Z. (2010). The performance implications of intra- and interregional geographic diversification. *Strategic Management Journal*.31: 1018—1030.
- Singh, M., Davidson, I. W. N., and Suchard, J. A. (2003). Corporate diversification strategies and capital structure. *Quarterly Review of Economics & Finance*. 43: 147—167.
- Taylor, P., and Lowe, J. (1995). A note on corporate strategy and capital structure. *Strategic Management Journal*.16: 411—414.
- Valentinov, V. (2012).The economics of the nonprofit sector: Insights from the institutionalism of John R. Commons. *The Social Science Journal*. 49: 545–553.
- Wen, Y., Rwegasira, K., and Bilderbeek, J. (2002). Corporate governance and capital structure decisions of the Chinese listed firms. *Corporate Governance: An International Review*. 10(2): 75-83.
- Williamson, O. E. (1988). Corporate finance and corporate governance. *Journal of Finance*. 43(3): 567-591.

Fiscal Policy Stance and Public Expenditure in Kenya

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Abstract: *This paper investigates the relationship between fiscal policy stance and public expenditure in Kenya from 1964 to 2015 using a Vector Error Correction Model. The results indicate that there is a negative relationship between fiscal policy stance and public expenditure. The findings further indicate that fiscal policy and public expenditure are cointegrated using the Johansen test and the bound test but there is no short-run causality between the variables as indicated by the Wald test statistics. This means that fiscal policy stance does not have a strong direct effect on public expenditure as supported by the theory of fiscal policy that policy makers could have a lower incentive to pursue public interests as compared to their personal interests.*

Keywords: Fiscal policy stance, public expenditure, economy

Introduction

There are numerous studies that have been undertaken on public expenditure especially on the determinants of public expenditure, the relationship between economic growth and public expenditure and even the nexus between macroeconomic factors and public expenditure. However, the topical issue of fiscal policy stance and public expenditure has not been investigated conclusively except by a study such as Stancik and Valila (2012). It is of concern to examine the effect of fiscal policy stance on public expenditure especially in a developing country such as Kenya because it would aid in responding to the question of the extent to which governments would redistribute or reallocate public resources effectively. Furthermore, the theory of fiscal policy states that fiscal policy should aim to redistribute and reallocate resources apart from aiming to stabilize an economy.

Fiscal policy is a government discretionary measure that influences the direction of the economy by making changes in the level and composition of public spending and funding. It is a tool that governments use in controlling the level of public expenditure as argued by Tanzi (2006) and Perotti (2007) since fiscal policy aims at redistributing and reallocating economic resources while enhancing stabilization in an economy. Fiscal policy stance can be termed as contractionary or tight when there is an increasing fiscal surplus or a decreasing fiscal deficit over a time period. On the other hand, fiscal policy stance can be expansionary or loose when the

fiscal balance is in deficit and the level of deficit is increasing or the extent of surplus is decreasing compared to other time periods (Pailwar, 2008). Dornbusch et al. (2004) state that one of the main policy tools the government can use to enhance economic growth at a reasonable rate with low inflation is fiscal policy. It is a policy tool that is utilized in shortening recessions and regulating booms by changes in the level and composition of public spending and funding.

Alesina and Tabellini (2005) and Blanchard (2010) argue that fiscal policy in developed economies has mainly been counter-cyclical whereas in developing economies it has been pro-cyclical which is regarded as a suboptimal policy due to political agency problems. Perotti (2007) also concurs with the argument that counter-cyclical fiscal policy, that is an expansionary fiscal stance when the economy is at a boom, would be optimal as compared to pro-cyclical policy since it would enhance macroeconomic stability. However, Canuto (2009) and Svante (2010) have dissenting views where they argue that pro-cyclical policies are preferable especially when economies are facing an economic turmoil.

The relationship between fiscal policy stance and public expenditure has not been extensively examined. However, Stancik and Valila (2012) while examining the effect of fiscal policy stance on public expenditure found that changes in fiscal policy stance affects the composition of public spending, with fiscal tightening increasing the relative share of investment and loosening consumption expenditure. Also Kirchgassner (2001) and Brownbridge and Canagarajah (2008) have examined fiscal policy stance and public expenditure and the findings generally indicated that fiscal policy should focus on controlling the level of public spending and further allocate more resources to the education and health sectors. This paper aims to examine the relationship between fiscal policy stance and public expenditure in Kenya. Also the relationship between fiscal policy stance and recurrent expenditure in Kenya and also fiscal policy stance and development expenditure in Kenya is examined. This paper is divided into the following sections: introduction, literature review, research methodology, data analysis and conclusion.

Literature Review

This paper is anchored on two main theories which include; the theory of fiscal policy and Wagner's law of increasing state activities. The theory of fiscal policy as asserted by studies done by Musgrave (1959) and Johansen (1965) states that the goals of fiscal policy extend beyond stabilization since fiscal tools can also be used for redistributing income and for reallocating resources. It is viewed that policymakers have an objective of promoting the social welfare of the citizens which is dependent on several indicators depending on the government in power (Tanzi, 2006). Hence this theory asserts that fiscal policy can influence the increase or decrease in public spending depending on priorities at hand but it does not explicitly state whether it supports pro-cyclical or countercyclical measures. However, the theory of fiscal policy has fundamental weaknesses. First, there is a deep suspicion of governments and scepticism that policymakers and bureaucrats can be separated from their personal interests and incentives in the pursuit of the public interest and second the theory will have higher validity if better institutions and better institutional arrangements are in place (Tanzi, 2006). Hence, this theory tends to be a normative theory in the sense that it tends to state what should be done instead of what usually happens in regard to fiscal policy.

Wagner's Law argues that there is a long run propensity for government expenditure to grow relative to national income. Wagner (1863) based the Law of increasing state activities on the German economic context and observed that all types of governments exhibited increasing public expenditure irrespective of their sizes or intentions. Wagner's law has not presented the hypothesis in a mathematical form. Nevertheless, Musgrave (1959) argues that Wagner's focus was on the size of the public sector in the total economy but states that it is not fruitful to seek an explanation for the total expenditure. Wagner's contribution to public expenditure theories is particularly significant when we consider that before Wagner made the observations, the prevailing view was the notion that as a country grows richer, government activities would have a tendency to decline (Henrekson, 1993).

Fiscal policy has mainly been pro-cyclical or counter-cyclical depending on the prevailing economic condition in a country or region. It is notable that pro-cyclical fiscal policies have been common to developing countries whereas developed countries have been adopting counter-cyclical policies (Perotti, 2007; UNCTAD, 2010). These mixed findings could be attributed to developing nations' history of insufficient borrowing capacity, political economy factors, policy conditions imposed by the international financial institutions and existence of fiscal rules designed to attain debt sustainability (Alesina and Tabellini, 2005). On the other hand, counter-cyclical policy measures have been recommended because they enhance macroeconomic stability. Perotti (2007) emphasizes that counter-cyclical fiscal policy would be optimal if certain conditions hold such as; all credit markets are perfect for all agents such as individuals, firms and government and that firms and individuals are credit constrained.

However, with regard to fiscal policy and public expenditure, there are insufficient studies reviewing this relationship but the effects of fiscal policy on economic growth or a descriptive analysis of the impact of fiscal policy have extensively been examined. However, studies done by Stancik and Valila (2012) using panel data analysis examined the effect of changes in fiscal stance on the composition of public expenditure. The findings indicate that contractionary fiscal policy stance increases the level of development expenditure while loosening recurrent expenditure.

On the relationship between budget deficit and public expenditure, most studies report a positive relationship. Beetsma et al. (2008) using a panel vector-regression approach examined the effects of increases in public expenditure on trade balances and budget deficits in 14 European Union countries from 1970 to 2004. The findings indicate that a 1% GDP increase in public expenditure leads to a 1.2% on impact rise and a 1.6% peak rise in GDP. Additionally, the public expenditure increase would lead to increases in budget deficits.

On fiscal policy and growth, Brownbridge and Canagarajah (2008) argue that fiscal policy should focus on halting the deterioration of human capital by allocating greater resources to recurrent expenditures in the education and health sectors, while also ensuring that macroeconomic stability is not compromised by higher domestic borrowing or that fiscal sustainability is not threatened by excessive external borrowing for capital projects. Also, Kirchgassner (2001) using a conceptual research approach while focusing on a study period of

30 years seem to concur to the notion that fiscal policy is a key tool in reallocation and redistribution of resources. Specifically, the study examines the effect of fiscal institutions on public finance and finds that statutory fiscal institutions have mainly been effective in reducing public expenditure. Also, budgetary procedures present a feasible alternative way of attaining fiscal sustainability.

On the other hand, Tanzi (2006) undertook a conceptual research and found that there is asymmetric information between policymakers and civil servants who draft legislative proposals on the various fiscal instruments such as taxes, aid and public expenditure and also disagreements in the use of these instruments hence posing the weakness of fiscal policy. However, the study is unclear on the link between economic growth and fiscal policy stance and also the extent to which fiscal policy stance affects public expenditure.

Research Methodology

This paper adopted the causal analytical research design since it enabled the determination of the cause and effect of the relationship between fiscal policy stance and public expenditure in Kenya. Zikmund (2002) indicates that the main goal of undertaking causal research is to determine the cause and effect relationships among variables. The study population period was 1964 to 2015 since it captured the universe of these variables in Kenya. Secondary data on fiscal policy, recurrent expenditure and development expenditure was collected from Kenya National Bureau of Statistics (KNBS) economic surveys and statistical abstracts and annual budget estimates books.

The data collected were analysed using descriptive and inferential statistics where it involved a description of the data such as the determination of the mean, standard deviation, skewness and kurtosis. Diagnostic testing was then done where it included stationarity tests and cointegration tests and finally time series modelling. The time series model used was the VECM which enabled the testing of the relationship between fiscal policy stance and public expenditure. The model is as follows;

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \sum_{i=1}^m \gamma_i X_{it} + \varepsilon_t$$

Where:

Y_t = Dependent Variable

Y_{t-1} = Lagged Dependent Variable

X_{it} = Independent Variables

β_0 = The Constant or Intercept

β_1 = Model Coefficient of the Lagged Dependent Variable

γ_i = Model Coefficients of the Independent Variables

ε_t = Error Term or Structural Shock

Data Analysis

Data Description

Time series annual data was collected from KNBS reports from 1964 to 2015. Data description begins with trends in fiscal policy (budget deficit), recurrent expenditure and development expenditure (recurrent and development expenditure adds up to public expenditure) as indicated in figures 1 and 2 respectively.

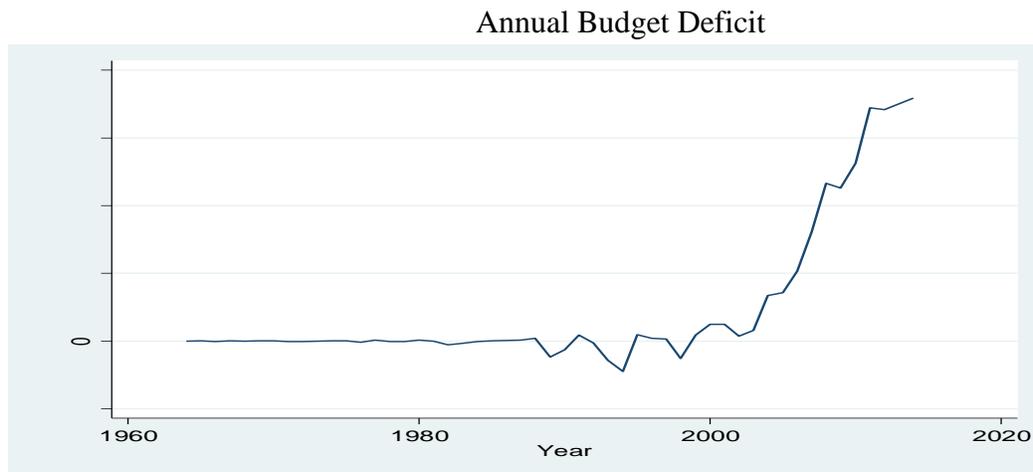


Figure 1. Budget Deficit in Kenya, 1964 – 2015

The budget deficit in Kenya as indicated by Figure 1 seems to be constant from 1964 to 1990. Subsequently, in the 1990s the deficit was volatile implying that there were years when we had budget surpluses. However, after the year 2000 up to 2015 budget deficit has been on an increasing trend implying that there was a shortfall of budgeted revenue over budgeted public expenditure. As the budget deficit has been on an increasing trend also public expenditure has had a sharp rise over that time period. Alesina and Perotti (1994) argued that budget deficits should mainly be observed during war and recessions yet in the Kenyan context there has been an increasing trend of deficits from the year 2000 to 2015. This implies that the government is always willing to run budget deficits even when there is an economic boom so as to enhance its popularity to the citizens.

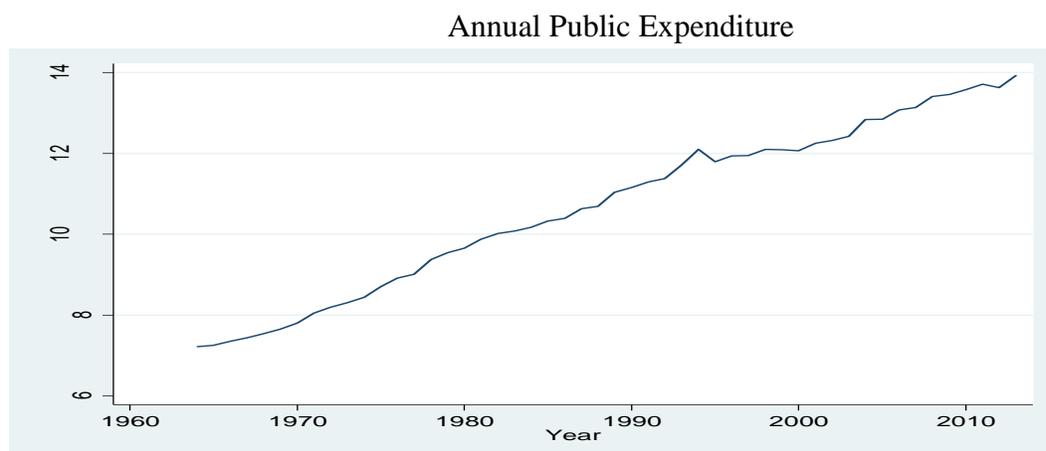


Figure 2. Public Expenditure in Kenya, 1964 – 2015

The total public expenditure from 1964 to 2015 is shown in Figure 2. The graph indicates an increasing smooth trend in public expenditure which concurs with Wagner's Law that public expenditure growth tends to be smooth over time. Also, Henrekson (1993) concurs with Wagner's findings on the nature of public expenditure growth and further emphasizes the need to focus on the time series behaviour of public expenditure as addressed in this study. That is unlike the Peacock and Wiseman hypothesis which argues that public expenditure tends to move in a step-like manner as argued by Peacock and Wiseman (1961) and supported in a subsequent study by Henry and Olekalns (2000).

Summary Statistics

Fiscal policy stance (budget deficit) has a mean of Ksh. 42507.66 million with a standard deviation of Ksh.100432.6 million. Fiscal policy stance (tax) has a mean of Ksh. 123379.8 million with a standard deviation of Ksh. 196962.8 million. For public expenditure, the mean is Ksh. 192760.3 million with a standard deviation of Ksh. 294372.1 million. Recurrent expenditure has a mean of Ksh. 154004.7 million with a standard deviation of Ksh. 225055.6 million while development expenditure has a mean of Ksh. 38755.66 million with a standard deviation of Ksh. 70916.40 million. Fiscal policy stance, recurrent, development and public expenditure are positively distributed as indicated by the skewness. On kurtosis, the variables are highly peaked relative to the peakedness of a normal distribution.

Table 1. Summary Statistics

	Budget Deficit (Ksh. m)	Tax (Ksh. m)	Recurrent Expenditure (Ksh. m)	Development Expenditure (Ksh. m)	Public Expenditure (Ksh. m)
Mean	42507.66	123379.8	154004.7	38755.66	192760.3
Median	395.50	30486.6	42632.13	10795.19	53007.75
Maximum	350050.0		941192.1	300204.2	1241396.0

		786196.0			
Minimum	-44986.00	735.32	1080.80	272.40	1362.40
Std. Dev.	100432.6	196962.8	225055.6	70916.40	294372.1
Skewness	2.14	1.95	1.82	2.34	1.96
Kurtosis	6.24	5.84	5.61	7.51	6.13
Jarque-Bera	59.90	48.39	41.77	87.96	52.44
Probability	0.00	0.00	0.00	0.00	0.00
Sum	2125383.0	6168990.0	7700234.0	1937783.0	9638017.0
Sum Sq. Dev.	4.94E+11	1.90E+12	2.48E+12	2.46E+11	4.25E+12

Source: Researcher's Computations

Diagnostic Test Results

This paper employed the Augmented Dickey-Fuller (ADF) test for stationarity and Johansen test for cointegration in undertaking diagnostic tests. The stationarity tests were undertaken on fiscal policy stance (tax, budget deficit), recurrent expenditure, development expenditure and public expenditure in order to determine if they are stationary or non-stationary.

Table 2. Results of Stationarity Tests

Variable	ADF Statistic at Level	ADF Statistic at First Differencing	ADF Statistic at Second Differencing
Tax	-0.5459 (0.8728)	-6.9760 (0.0000)	
Budget Deficit	-0.2621 (0.9223)	-0.7274 (0.8293)	-10.7528 (0.0000)
Recurrent Expenditure	8.0696 (1.0000)	2.5409 (1.0000)	-13.8973 (0.0000)
Development Expenditure	-0.2716 (0.9214)	-8.3704 (0.0000)	
Public Expenditure	9.5844 (1.0000)	4.5209 (1.0000)	-16.1278 (0.0000)

Source: Researcher's Computations

In Table 2, the stationarity results indicate that tax and development expenditure are stationary at first differencing which means that they are integrated at order one I(1). On the other hand, budget deficit, recurrent expenditure and public expenditure are stationary at second differencing meaning that they are integrated at order two I(2). Cointegration tests were undertaken in order to test if the variables have a long run relationship between them. The Johansen test for cointegration was conducted using the trace statistic and maximum Eigen values. For

cointegration to exist, the trace statistic should be greater than the critical values at 5% level of significance.

Table 3. Results of Johansen Cointegration Trace Statistic Test

	Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.
Budget Deficit & Public Expenditure	None*	0.7121	67.3906	20.2618	0.0000
	At most 1	0.1469	7.6267	9.1645	0.0971
Budget Deficit & Recurrent Expenditure	None*	0.6929	63.6804	20.2618	0.0000
	At most 1	0.1360	7.0190	9.1645	0.1254
Budget Deficit & Development Expenditure	None*	0.2969	24.9769	20.2618	0.0104
	At most 1	0.1548	8.0709	9.1645	0.0803
Tax & Public Expenditure	None*	0.4578	50.7290	20.2618	0.0000
	At most 1*	0.3733	21.9590	9.1645	0.0001
Tax & Recurrent Expenditure	None*	0.5181	56.6370	20.2618	0.0000
	At most 1*	0.3781	22.3222	9.1645	0.0001
Tax & Development Expenditure	None*	0.3736	28.4927	20.2618	0.0029
	At most 1	0.1182	6.0388	9.1645	0.1877

* denotes rejection of the null hypothesis at the 0.05 level of significance

Source: Researcher's Computations

The results in Table 3 indicate that budget deficit and public expenditure are cointegrated since the trace statistics of 67.3906 is greater than the critical value of 20.2618 at 5% level of significance. Similarly, there is cointegration between tax and public expenditure since the trace statistics is greater than the critical value at 5% level of significance. However, it is notable that tax seems to have a stronger level of cointegration which is essentially a stronger long-run relationship with public expenditure as compared to budget deficit with public expenditure as evidenced by the number of co-integrating equation results in Table 3. Cointegration tests using the ARDL bound test approach was also used in testing if the variables are cointegrated as shown in Table 4.

Table 4. ARDL Bound Test for Cointegration

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	8.801457	(3, 35)	0.0002
Chi-square	26.40437	3	0.0000

Null Hypothesis: $C(10)=C(11)=C(12)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(10)	0.260739	0.121434
C(11)	967.8103	4778.604
C(12)	0.043329	0.231911

Restrictions are linear in coefficients.

Source: Researcher's Computations

According to Table 4, fiscal policy stance and public expenditure are cointegrated using the Auto Regressive Distributed Lag (ARDL) bound test for cointegration. The bound test requires one to determine the f-statistic in the Wald test and compare it with the upper and lower bound values obtained from the Pesaran et al. (2001) Table. The f-statistic is 8.801457 at 5% level of significance is greater than the upper bound value of 4.85 obtained from the Pesaran Table, then there is cointegration existing between the study variables.

Granger causality tests were undertaken so as to determine if one variable causes another or simply testing the level of prediction of one variable against another. The null hypothesis in the Granger causality test states that a variable x does not Granger cause variable y in the first regression while variable y does not Granger cause variable x in the second regression at 5% level of significance.

Table 5. Results of Granger Causality Tests

Null Hypothesis	f-Statistic	Probability
Budget deficit does not Granger cause development expenditure	0.7476	0.4796
Development expenditure does not Granger cause budget deficit	2.0310	0.1436
Recurrent expenditure does not Granger cause tax revenue	2.4433	0.0988
Tax revenue does not Granger cause recurrent expenditure	0.6179	0.5438
Tax revenue does not Granger cause public expenditure	0.2904	0.7494
Public expenditure does not Granger cause tax revenue	2.4340	0.0997
Budget deficit does not Granger cause tax revenue	0.4930	0.6142
Tax revenue does not Granger cause budget deficit	1.6651	0.2011

Source: Researcher's Computations

The findings in Table 5 indicate that budget deficit does not Granger-cause development expenditure and vice versa at 5% level of significance as indicated by the *p*-values of 0.4796 and 0.1436. Recurrent expenditure does not Granger-cause tax revenue and vice versa at 5% level of significance as indicated by the *p*-values of 0.0988 and 0.5438. Tax revenue does not Granger-cause public expenditure and vice versa at 5% level of significance as indicated by the *p*-values of 0.7494 and 0.0997.

Model Specification

Fiscal Policy Stance and Public Expenditure

The main objective was to examine the effect of fiscal policy stance on public expenditure in Kenya. Before the modelling was done, lag selection was undertaken to determine the number of lags in each variable and in essence how many lags can be used in a model for analysis. The common techniques used in establishing the lag structure include the Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwartz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ). The techniques were used in establishing the total lags in all the study variables and also the number of lags in each study variable. One advantage of the above lag selection techniques is that they are useful for not only in-sample but also out-of-sample forecasting performance of a regression model. The smaller the FPE, AIC, SC and HQ value, the better the model. Table 6 shows the lag length selection of the relationship between fiscal policy stance and public expenditure. The abbreviations LogL and LR stand for log likelihood and likelihood ratio respectively.

Table 6. Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-644.7833	NA	3.42e+08	28.16449	28.28375	28.20917
1	-452.3442	351.4105	117779.3	20.18888	20.66592*	20.36758
2	-437.8954	24.50021*	93478.64*	19.95197*	20.78679	20.26470*
3	-430.9990	10.79427	103876.2	20.04344	21.23603	20.49019
4	-426.9937	5.746833	132508.2	20.26059	21.81096	20.84137

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

Source: Researcher's Computations

From the Table 6, two (2) lags were selected since under the AIC, FPE, LR and HQ the lag value was the lowest. After the lag selection was done, the effect of fiscal policy stance on public expenditure was undertaken. Before running the VECM model, diagnostic tests were done such as Johansen cointegration test and stationarity test so as to ensure that the model would generate robust results. The data were tested for stationarity at level and if it was not stationary then it was made stationary at first differencing or second differencing. For the cointegration tests, there was cointegration between fiscal policy stance and public expenditure hence a VECM model being the most appropriate model to be used. The VECM model is as shown below;

Table 7. VECM Model of Fiscal Policy Stance and Public Expenditure

$$D(\text{PEXP}) = C(1) * (\text{PEXP}(-1) - 1.03485617939 * \text{TAX}(-1) + 1.23422707728E-07 * \text{BDEFIC}(-1) - 0.150503713201) + C(2) * D(\text{PEXP}(-1)) + C(3) * D(\text{PEXP}(-2)) + C(4) * D(\text{TAX}(-1)) + C(5)$$

$$*D(TAX(-2)) + C(6)*D(BDEFIC(-1)) + C(7)*D(BDEFIC(-2)) + C(8)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.251640	0.270345	-0.930811	0.3577
C(2)	-0.253809	0.224387	-1.131122	0.2649
C(3)	-0.007484	0.205753	-0.036373	0.9712
C(4)	-0.003788	0.190341	-0.019899	0.9842
C(5)	-0.157971	0.156606	-1.008717	0.3193
C(6)	-1.41E-06	1.02E-06	-1.377510	0.1762
C(7)	5.87E-08	1.05E-06	0.056019	0.9556
C(8)	0.211818	0.048616	4.357002	0.0001
R-squared	0.128431	Mean dependent var	0.142247	
Adjusted R-squared	-0.028004	S.D. dependent var	0.122805	
S.E. of regression	0.124513	Akaike info criterion	-1.174978	
Sum squared resid	0.604633	Schwarz criterion	-0.860059	
Log likelihood	35.61198	Hannan-Quinn criter.	-1.056472	
F-statistic	0.820986	Durbin-Watson stat	1.974580	
Prob(F-statistic)	0.575843			

Source: Researcher's Computations

From Table 7, the effect of fiscal policy stance on public expenditure is statistically insignificant as indicated in the p-values while the R^2 is 12.84% meaning that 12.84% of the variations in public expenditure can be explained by fiscal policy stance. The p -value of C(1) or the constant is 0.3577 meaning that there is no long-run causality running from fiscal policy stance to public expenditure. Short run causality was also tested using the Wald test as indicated in Tables 8 and 9.

In the Wald test, the null hypothesis states that there is no short-run causality from tax to public expenditure if the coefficients of tax C(4) and C(5) all equal to zero. If the coefficients are equal to zero, then there is no short-run causality.

Table 8. Wald Test for Tax and Public Expenditure

Test Statistic	Value	df	Probability
F-statistic	0.621301	(2, 39)	0.5425
Chi-square	1.242602	2	0.5372
Null Hypothesis: C(4)=C(5)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	

C(4)	-0.003788	0.190341
C(5)	-0.157971	0.156606

Source: Researcher's Computations

The Wald Test results indicated in Table 8, we accept the null hypothesis that there is no short-run causality running from tax to public expenditure as indicated by the p -value of 0.5372.

Table 9. Wald Test for Budget Deficit and Public Expenditure

Test Statistic	Value	df	Probability
F-statistic	0.997535	(2, 39)	0.3780
Chi-square	1.995070	2	0.3688

Null Hypothesis: $C(6)=C(7)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6)	-1.41E-06	1.02E-06
C(7)	5.87E-08	1.05E-06

Source: Researcher's Computations

The null hypothesis states that there is no short-run causality from budget deficit to public expenditure if the coefficients of budget deficit $C(6)$, $C(7)$ all equal to zero. If the coefficients are equal to zero, then there is no short-run causality. To test for short-run causality, we use the Wald Test. As indicated in Table 9, we can accept the null hypothesis that there is no short-run causality as indicated in the p -value of 0.3688. In summary, there is no long run and short run causality running from tax and budget deficit to public expenditure. Post-diagnostic tests were done such as serial correlation tests and heteroscedasticity tests so as to determine the robustness of the VECM model. The results are as indicated in the Tables 10 and 11.

Table 10. Serial Correlation Test in the Model

Breusch-Godfrey Serial Correlation LM Test:

	1.08425		
F-statistic	4	Prob. F(2,37)	0.3487
	2.60208		
Obs*R-squared	6	Prob. Chi-Square(2)	0.2722

Source: Researcher's Computations

From the Table 10, there is no serial correlation as indicated by the p -value of 0.2722. This means that the variables in the VECM model are not correlated.

Table 11. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

	3.20411		
F-statistic	0	Prob. F(9,37)	0.0058
	20.5862		
Obs*R-squared	8	Prob. Chi-Square(9)	0.0146
	31.7470		
Scaled explained SS	8	Prob. Chi-Square(9)	0.0002

Source: Researcher's Computations

The results in the Table 11 indicate that there is heteroscedasticity as shown by the p -value of 0.0146 at 5% level of significance while the corresponding R^2 is 20.58628.

Fiscal Policy Stance and Recurrent Expenditure

The effect of fiscal policy stance on recurrent expenditure was also established using a VECM model and similar pre-diagnostic checking and post-diagnostic checking was undertaken. Table 12 shows the lag length criteria/selection method used.

Table 12. Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-650.2900	NA	4.35e+08	28.40391	28.52317	28.44859
1	-453.3590	359.6131	123092.5	20.23300	20.71004*	20.41170
2	-436.7182	28.21708*	88814.68*	19.90079*	20.73561	20.21352*
3	-428.0622	13.54854	91424.27	19.91575	21.10834	20.36250
4	-425.1641	4.158077	122376.2	20.18105	21.73142	20.76183

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

Source: Researcher's Computations

From the Table 12, two (2) lags were selected since under the LR, FPE, AIC and HQ the lag value was the lowest. After the lag selection was done, the effect of fiscal policy stance on public expenditure was undertaken. Before running the VECM model, diagnostic tests were done such as Johansen cointegration test and Stationarity test so as to ensure that the model would generate robust results. The data were tested for Stationarity at level and if it was not stationary then it was made stationary at first differencing or second differencing. For the cointegration tests, there was cointegration between fiscal policy stance and recurrent expenditure hence a VECM model being the most appropriate model to be used. The VECM model is as shown below;

Table 13. VECM Model for Fiscal Policy Stance and Recurrent Expenditure

$$D(\text{RECUR}) = C(1) * (\text{RECUR}(-1) - 1.09439442108 * \text{TAX}(-1) + 3.02095143163E-07 * \text{BDEFIC}(-1) + 0.692336931879) + C(2) * D(\text{RECUR}(-1)) + C(3) * D(\text{RECUR}(-2)) + C(4) * D(\text{TAX}(-1)) + C(5) * D(\text{TAX}(-2)) + C(6) * D(\text{BDEFIC}(-1)) + C(7) * D(\text{BDEFIC}(-2)) + C(8)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.218791	0.165707	-1.320352	0.1944
C(2)	-0.277179	0.207882	-1.333349	0.1902
C(3)	0.005265	0.241675	0.021787	0.9827
C(4)	0.036567	0.159434	0.229357	0.8198
C(5)	-0.198036	0.136479	-1.451042	0.1548
C(6)	-1.83E-06	1.11E-06	-1.648477	0.1073
C(7)	-2.55E-07	1.14E-06	-0.223115	0.8246
C(8)	0.216628	0.054969	3.940873	0.0003
R-squared	0.145229	Mean dependent var	0.140679	
Adjusted R-squared	-0.008192	S.D. dependent var	0.121696	
S.E. of regression	0.122193	Akaike info criterion	-1.212588	
Sum squared resid	0.582315	Schwarz criterion	-0.897670	
Log likelihood	36.49582	Hannan-Quinn criter.	-1.094082	
F-statistic	0.946605	Durbin-Watson stat	1.994099	
Prob(F-statistic)	0.482722			

Source: Researcher's Computations

From Table 13, the effect of fiscal policy stance on recurrent expenditure is statistically insignificant as indicated in the p-values while the R^2 is 14.52% meaning that 14.52% of the variations in recurrent expenditure can be explained by fiscal policy stance. The p-value of C(1) or the constant is 0.1944 meaning that there is no long-run causality running from fiscal policy stance to recurrent expenditure. Short run causality was also tested using the Wald test as indicated in Tables 14 and 15.

Table 14. Wald Test of Tax and Recurrent Expenditure

Test Statistic	Value	Df	Probability
F-statistic	1.241021	(2, 39)	0.3003
Chi-square	2.482042	2	0.2891

Null Hypothesis: $C(4)=C(5)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(4)	0.036567	0.159434
C(5)	-0.198036	0.136479

Source: Researcher's Computations

As indicated in Table 14, there was no short-run causality running from tax to recurrent expenditure as indicated by the p -value of 0.2891.

Table 15. Wald Test of Budget Deficit and Recurrent Expenditure

Test Statistic	Value	Df	Probability
F-statistic	1.404529	(2, 39)	0.2576
Chi-square	2.809058	2	0.2455

Null Hypothesis: $C(6)=C(7)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6)	-1.83E-06	1.11E-06
C(7)	-2.55E-07	1.14E-06

Source: Researcher's Computations

As indicated in Table 15, there is no short-run causality running from budget deficit to recurrent expenditure as indicated by the p -value of 0.2455. In summary, there is neither long run nor short-run causality running from tax and budget deficit to recurrent expenditure.

Table 16. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.475893	Prob. F(2,37)	0.6251
Obs*R-squared	1.178705	Prob. Chi-Square(2)	0.5547

Source: Researcher's Computations

From the Table 16 above, we accept the null hypothesis that there is no serial correlation in the series residual as indicated by the p -value of 0.5547.

Table 17. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	5.945660	Prob. F(9,37)	0.0000
Obs*R-squared	27.78685	Prob. Chi-Square(9)	0.0010
Scaled explained SS	47.47749	Prob. Chi-Square(9)	0.0000

Source: Researcher's Computations

As indicated in Table 17, we reject the null hypothesis that states that there is no heteroscedasticity as indicated by the p -value of 0.001 at 5% level of significance while the corresponding R^2 is 27.78685.

Fiscal Policy Stance and Development Expenditure

The effect of fiscal policy stance on development expenditure was also established using a VECM model and pre-diagnostic checking and post-diagnostic checking was undertaken. Table 18 shows the lag length criteria/selection method used. From the Table 18, one (1) lag was selected since under the FPE, SC and HQ the lag value was the lowest. After the lag selection was done, the effect of fiscal policy stance on development expenditure was undertaken.

Table 18. Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-682.4762	NA	1.76e+09	29.80331	29.92257	29.84799
1	-495.7418	340.9934	777173.0*	22.07573	22.55277*	22.25443*
2	-493.1618	4.374696	1033413.	22.35486	23.18968	22.66759
3	-477.3008	24.82592*	777684.3	22.05656*	23.24915	22.50331
4	-472.7872	6.476045	970361.0	22.25162	23.80199	22.83240

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

Source: Researcher's Computations

Before running the VECM model, diagnostic tests were done such as Johansen cointegration test and Stationarity test so as to ensure that the model would generate robust results. The data were tested for Stationarity at level and if it was not stationary then it was made stationary at first differencing or second differencing. For the cointegration tests, there was cointegration between fiscal policy stance and development expenditure hence a VECM model being the most appropriate model to be used. The VECM model is as shown next;

Table 19. VECM Model for Fiscal Policy Stance and Development Expenditure

$$D(\text{DEV}) = C(1) * (\text{DEV}(-1) - 0.976138840865 * \text{TAX}(-1) - 5.77496508736\text{E-}06 * \text{BDEFIC}(-1) + 1.10840586842) \\ + C(2) * D(\text{DEV}(-1)) + C(3) * D(\text{DEV}(-2)) + C(4) * D(\text{DEV}(-3)) + C(5) * D(\text{TAX}(-1)) + \\ C(6) * D(\text{TAX}(-2)) \\ + C(7) * D(\text{TAX}(-3)) + C(8) * D(\text{BDEFIC}(-1)) + C(9) * D(\text{BDEFIC}(-2)) + \\ C(10) * D(\text{BDEFIC}(-3)) + C(11)$$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.137986	0.135585	-1.017712	0.3158
C(2)	-0.104978	0.207005	-0.507131	0.6152
C(3)	-0.012646	0.202130	-0.062562	0.9505
C(4)	0.221253	0.187094	1.182579	0.2449
C(5)	-0.123856	0.276484	-0.447968	0.6569
C(6)	0.216128	0.255025	0.847480	0.4025
C(7)	0.203285	0.272137	0.746995	0.4601
C(8)	-1.19E-06	2.64E-06	-0.453143	0.6532
C(9)	-1.13E-06	2.37E-06	-0.477259	0.6361
C(10)	-1.75E-06	2.48E-06	-0.707843	0.4837
C(11)	0.119427	0.084444	1.414273	0.1661
R-squared	0.194759	Mean dependent var	0.148310	
Adjusted R-squared	-0.035309	S.D. dependent var	0.246581	
S.E. of regression	0.250897	Akaike info criterion	0.277419	
Sum squared resid	2.203226	Schwarz criterion	0.714703	
Log likelihood	4.619360	Hannan-Quinn criter.	0.441228	
F-statistic	0.846526	Durbin-Watson stat	2.065735	
Prob(F-statistic)	0.588852			

Source: Researcher's Computations

From Table 19, the effect of fiscal policy stance on development expenditure is statistically insignificant as indicated in the p-values while the R^2 is 19.48% meaning that 19.48% of the variations in development expenditure can be explained by fiscal policy stance. The p-value of C(1) or the constant is 0.3158 meaning that there is no long-run causality running from fiscal policy stance to development expenditure. Short run causality was also tested using the Wald test as indicated in Tables 20 and 21.

Table 20. Wald Test for Tax on Development Expenditure

Test Statistic	Value	df	Probability
F-statistic	0.731706	(3, 35)	0.5401
Chi-square	2.195119	3	0.5329

Null Hypothesis: $C(5)=C(6)=C(7)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(5)	-0.123856	0.276484
C(6)	0.216128	0.255025
C(7)	0.203285	0.272137

Source: Researcher's Computations

As indicated in Table 20, there was no short-run causality running from tax to development expenditure as indicated by the p -value of 0.5329.

Table 21. Wald Test for Budget Deficit on Development Expenditure

Test Statistic	Value	df	Probability
F-statistic	0.194625	(3, 35)	0.8994
Chi-square	0.583876	3	0.9001

Null Hypothesis: $C(8)=C(9)=C(10)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(8)	-1.19E-06	2.64E-06
C(9)	-1.13E-06	2.37E-06
C(10)	-1.75E-06	2.48E-06

Source: Researcher's Computations

As indicated in Table 21, there was no short-run causality running from budget deficit to development expenditure as indicated by the p -value of 0.9001.

Table 22. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.475752	Prob. F(3,32)	0.2397
Obs*R-squared	5.590697	Prob. Chi-Square(3)	0.1333

Source: Researcher's Computations

From the Table 22 above, we accept the null hypothesis that there is no serial correlation in the series residual as indicated by the p -value of 0.1333.

Table 23. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.610153	Prob. F(12,33)	0.0145
Obs*R-squared	22.39993	Prob. Chi-Square(12)	0.0333
Scaled explained SS	10.44098	Prob. Chi-Square(12)	0.5773

Source: Researcher's Computations

As indicated in Table 23, we reject the null hypothesis that states that there is no heteroscedasticity as indicated by the p -value of 0.0333 at 5% level of significance while the corresponding R^2 is 27.78685.

Fiscal Policy Stance and Public Expenditure

The study findings indicate that there is an insignificant effect of fiscal policy stance on public expenditure which implies that there are other variables that explain the effect on public expenditure. Furthermore, these results seem to validate one of the assumptions of the theory of fiscal policy that policy makers have a lower incentive to pursue public interests in comparison to their personal interests. Again these study findings validate the assertions of Kirchgassner (2001) and Brownbridge and Canagarajah (2008) that fiscal policy should aim to effectively control the level of public expenditure and that budgetary procedures present an alternative feasible way to attaining fiscal sustainability.

However, the study findings differ from those of Stancik and Valila (2012) where they found that contractionary fiscal stance increases the level of development expenditure and loosens recurrent expenditure. On the other hand, most of the control variables used in Stancik and Valila's study such as long-term government interest rate, population, unemployment rate, foreign direct investment inflows and various measures of urbanisation had an insignificant effect on the relationship between fiscal policy stance and public expenditure.

Conclusion

The study findings indicate that fiscal policy stance has an insignificant effect on public expenditure. There was also a weak negative effect of fiscal policy stance on recurrent expenditure and development expenditure. The study findings also showed a negative relationship existing between fiscal policy stance and public expenditure which is similar to the findings of Kirchgassner (2001) and Stancik and Valila (2012). The inverse relationship implies that the interaction of fiscal policy stance and public expenditure in Kenya is countercyclical. The weak effect of fiscal policy stance on public expenditure further highlights the result that fiscal policy stance does not directly affect public expenditure. However, the theory of fiscal policy asserts that fiscal policy should aim at redistributing and reallocating resources even though fiscal policymakers may not have the incentives to pursue public interests and the fiscal institutions may not be strong enough to execute the control of public expenditure effectively.

References

- Alesina, A., and Perotti, R. (1994). The political economy of budget deficits. *National Bureau of Economic Research Working Paper Series*, No. 4673.
- Alesina, A., and Tabellini, G. (2005). Why is fiscal policy often pro-cyclical? *National Bureau of Economic Research Working Paper Series* No. 11600.
- Beetsma, R., Giuliodori, M., and Klaassen, F. (2008). The effects of public spending shocks on trade balances and budget deficits in the European Union *Journal of the European Economic Association*, 6(2-3), 414 – 423.
- Blanchard, O. (2010). Lessons of the global crisis for macroeconomic policy. *IMF Working Paper*, IMF Research Department.
- Brownbridge, M., and Canagarajah, S. (2008). Fiscal policy for growth and development in Tajikistan. *World Bank Policy Research Working Paper* No. 4532, World Bank.
- Canuto, O. (2009). Fiscal policy in developing countries: implications from the current crisis, *65th Annual Congress of the International Institute of Public Finance (IIPF)*, Cape Town, South Africa.
- Dornbusch, R., Fischer, S., and Startz, R. (2004). *Macroeconomics*. 9th Ed, New Delhi: McGraw Hill.
- Henrekson, M. (1993). Wagner's Law: A spurious relationship? *Public Finance*, 48(2), 406 – 415.
- Henry, O., and Olekalns, N. (2000). The displacement hypothesis and government spending in the United Kingdom: some new long-run evidence. *The University of Melbourne Working Paper* No. 750.
- Johansen, L. (1965). *Public economics*. Amsterdam: North Holland Publishing Co.
- Kirchgassner, G. (2001). The effects of fiscal institutions on public finance: A survey of the empirical evidence. *CESifo Working Paper Series* No. 617, CESifo GmbH.
- Musgrave, R. (1959). *The theory of public finance*. New York: McGraw-Hill.
- Pailwar, V. (2008). *Economic environment of business*. New Delhi: Prentice-Hall of India, Private Limited.
- Peacock, A., and Wiseman, J. (1961). *The growth of public expenditure in the United Kingdom*. Princeton: Princeton University Press.
- Perotti, R. (2007). Fiscal policy in developing countries: a framework and some questions. *World Bank Research Working Paper* No. 4365, World Bank.
- Pesaran, M.H., Shin, Y. and Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16, 289 – 326.
- Stancik, J., and Valila, T. (2012). Changes in the fiscal stance and the composition of public spending. *Empirical Economics*, 43: 199 – 217.
- Svante, O. (2010). Public finances and monetary policy. Retrieved on 3/09/2016, from <http://www.bis.org/review/r100428d.pdf>.
- Tanzi, V. (2006). Fiscal policy: When theory collides with reality. *CEPS Working Document*, No. 246.
- UNCTAD (2010). *The financial crisis, macroeconomic policy and the challenge of development in Africa*, Geneva. Retrieved on 31/09/2016.
- Wagner, A. (1863). *Grundlegung der politischenökonomie*. Retrieved on 09/11/2016 from <http://www.google.com>.
- Zikmund, W. (2002). *Business research methods*. 7th Ed. Thomson/South-Western.

The Impact of Social Capital on Family Business Sustainability in Tanzania

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Abstract: *The main objective of this study was to analyze social capital networking in Tanzanian context. The study dwelt on analysing the association between key elements of social networks and the family business sustainability. This was a quantitative study which employed descriptive and inferential statistics. The study population was 320 small or family businesses operated for more than four years. A correlation analysis was used to find out the factors of social capital that have a positive correlation with family business sustainability. The study revealed that relations and connections are the social capital factors that emerged as significant factors with positive impact on family business sustainability. The study finding indicates a positive relationship between networks and business sustainability. The study recommends that there should be a culture of nurturing the youth to take over the role of managing the business. This should be in line with family members to establish short and long-term plans for the future of the business. Moreover, the study recommends that in order to build the family members' confidence and loyalty to the family businesses, there should be a system of compensation in which those who devote much be remunerated proportionally.*

Keywords: social capital, networking, family business, sustainability

Introduction

The concept of social capital and small business development can be traced back to 1890 before becoming widely used in the late 1990s (Ferragina, 2010). Social capital is a form of economic set up in African culture and cultural capital in which social networks are based on. Social capital is built in structure of individuals' relationship with other members. The social networks are marked by trust, cooperation to produce goods and services not for themselves, but for a common good (William, 2006). It has been a practice for African small business to include social capital as a central issue to business commitment and development to serve the community/family (Tonya, 2015). Formal and informal networks empower small firms to generate social capital by forging network ties, building on trust and sharing a vision among stakeholders. It enables them to obtain necessary resources, support, information and knowledge, which may be otherwise inaccessible to them (Saha and Banerjee, 2015).

The social capital concept generally refers to the allocation of resources, and the value of these resources, tangible and intangible; the actor's social capital is human capital or people (Seanman

et al., 2010). Social capital can be viewed as the relationships among these resources for the purpose of community development. The impact of the network relationships has involved in each member of the family and on larger groups (Wilmott, 1986). It is generally seen as a form of capital that produces public goods for a common good (Tonnie, 1995).

Social capital defines the characteristics of the social organization, such as networks, norms and trust, which can increase efficiency by promoting coordinated actions (Josserand, 2012). In management terms, family social capital is the capital that develops between the family members, especially within family firms (Anderson, 2003). This kind of capital is developed in terms of human interactions and communication. Thus, the specificity of family firms is based on the unique coexistence of two forms of social capital: that of the company, which belongs strictly to the economic sphere, and that of the family, which, on the contrary, belongs to the private sphere (Josserand, 2012; Boccato *et al.*, 2010). Social capital has been used to explain the improved performance of diverse groups, the growth of entrepreneurial firms, superior managerial performance, enhanced supply chain relations, the value derived from strategic alliances, and the evolution of communities (Ferragina, 2012; Rose, 2000). The modern emergence of social capital concept renewed the academic interest for an old debate in social science: the relationship between trust, social networks and the development of modern industrial society. Through the social capital concept, the study has proposed a synthesis between the value contained in the communitarian approaches and individualism professed by the rational choice theory (Josserand, 2012). Social capital can only be generated collectively thanks to the presence of communities and social networks, but individuals and groups can use it at the same time. Individuals can exploit social capital of their networks to achieve private objectives and groups can use it to enforce a certain set of norms or behaviours. In this sense, social capital is generated collectively but it can also be used individually, bridging the harmonized approach communitarians versus individualism (Ferragina, 2010).

Theoretical and Conceptual Framework

The study was based on the social theory for individualistic developed by Madison in Federalists in factions. Social capital may be defined as those resources inherent in social relations which facilitates collective action. Social capital resources include trust, norms, and networks of an association representing any group which gathers consistently for a common purpose. A norm of a culture high in social capital is reciprocity, which encourages bargaining, compromise, and pluralistic politics. Another norm is a belief in the equality of citizens, which encourages the formation of cross-cutting groups (Coleman, 1988).

The dimension of a firm's social capital involves the commercial relations with the different stakeholders, the employees, suppliers, customers, and creditors, while that of family social capital concerns all the knowledge, know-how and practices, and all the social values, beliefs and behaviours adopted by the family group (Lin and Hu, 2007). According to Sorenson *et al.* (2009) and Boccato *et al.* (2010), there are four factors that determine the formation of capital from the private sphere to the professional sphere in family businesses:

- i. The stability of the network over time, which promotes the emergence of strong social relations;
- ii. The interactions between family members, which contribute towards the development and preservation of mutual obligations between individuals;
- iii. The interdependence between family members that binds them together and gives value to a collective patrimony; and
- iv. Accessibility (or the closed-loop), which is naturally regulated and defined by the social rules of membership to the community (Combs *et al.*, 2010).

Africans in the past were prone to meeting at as many gatherings as possible to discuss all possible issues of family businesses including social affairs. The gatherings were important to discuss issues related to the development of the family and the community where the family belongs.

Social capital in Africa, and Tanzania, in particular, has been a mode of life, where the family network is powerful for decision making (Tonya, 2015). The small business establishment has been linked to family networks (social capital) and participation of every member in action is important. Decision making of a business regardless of who established it is banked in a family meeting where the family council have the final say of the undertaking (Tonya, 2015).

Despite the multiple definitions of social capital, most involve social networks (structure and connections), trust, norms (of reciprocity) and values, and the social license to operate in a community. It has been suggested by (Lin & Hu, 2007) that, in general, there is a high level of consistency in the definitions of social capital. Social capital is broadly seen as the resources, knowledge and information that accrue to an individual, organization or a collective as a result of a network of social relationships within and between organizations, institutions and communities (Lin, 2001; Seanman *et al.*, 2010).

Problem statement

Despite the social capital in African countries being built by family culture, trust, relationships and norms, its application has not shown significant improvement in business sustainability (Thornton, 2017). Social capital differs from other forms of capital because it leads to bad results like extreme dislike groups or inbred bureaucracies (Fukuyama, 1999). This does not disqualify it as a form of capital; physical capital can take the form of assault rifle or tasteless entertainment, while human capital can be used to devise new ways of torturing people. Since societies have laws to prevent the production of much social bad, it can be presumed that most legal forms of social capital are fewer goods than the other forms of capital insofar as they help people achieve their aims (Fukuyama, 1999; Ferragina, 2010). Social capital when misused may prevent individual freedom and innovation as all decisions bases on mutual understanding. The study specifically intended to analyse the factors of social capital networking that contribute to family business sustainability in Tanzania. The study further undertook to analyse the association between key elements of social networks and the family business sustainability.

Objective

The general objective of this study was to examine the impact of social capital on family business sustainability in Tanzanian context.

Specific Objectives

- i. To analyse the factors of social capital networking that contribute to family business sustainability in Tanzania.
- ii. To analyse the association between key elements of social networks and the family business sustainability.
- iii. To recommend the importance of networking in business as a focal point for social capital towards business sustainability.

Literature review

Several kinds of literature are in place on social capital and the use in business management. The literature on social capital bases on one or more of theories. The theories include structural theory, interactionism theory, critical theory, agency theory and actor-network theory. Hou and Neely (2013) define social capital as the relationship of business with stakeholders basing on one party having resources (Hou and Neely, 2013; Kleemann and Essig, 2013). It is known that there are three dimensions of social capital. The dimensions are structural social capital, this is the overall connections of actors; Relational social capital which is the personal relationship developed within people through history. The third dimension is cognitive social capital which is the provision of resources shared by representations, interactions and system meaning among the acting parties (Kleemann and Essig, 2013).

Social capital has been used to explain the improved performance of diverse groups, the growth of entrepreneurial firms, superior managerial performance, enhanced supply chain relations, and the value derived from strategic alliances, and the evolution of communities (Robison and Schmid, 2002). Robison and Schmid (2002) also comment that the high levels of transparency cause greater participation from the people and thus allowed for democracy to work better (Nahapiet and Ghoshal, 1998). The business being transparent, greater participation is high, then higher performance for sustainable business.

Robison and Schmid measured the relative importance of selfishness and four social capital motives using resource allocation data collected in hypothetical surveys and non-hypothetical experiments. The selfishness motive assumes that an agent's allocation of a scarce resource is independent of his relationships with others (Robison and Schmid, 2002). Social capital motives assume that agents' allocation of a scarce resource may be influenced by their social capital or sympathetic relationships with others which may produce socio-emotional goods that satisfy socio-emotional needs for validation and belonging (Huber, 2009).

The concept that underlies social capital has a much longer history; thinkers exploring the relation between associational life and democracy were using similar concepts regularly by the 19th century (Coleman, 1988). Drawing on the work of earlier writers such as James Madison and Alexis de Tocqueville (*Democracy in America*) to integrate concepts of social cohesion and connectedness into the pluralist tradition (Ferragina, 2010). From the concept of social capital as developed by researchers from the 19th century on different sectors of the economy, it is

important to consider the concept in relationship to business sustainability. This is based on the concept that social capital is built in trust among members, transparency and participation. The world today needs communities to joint hands to build up strong capital for the purpose of fetching opportunities which come around. It was the objective of this study to explore the opportunities to make sure social capital is strengthened for the small business growth towards sustainable business. Small business in the study is used interchangeably with family business basing on the small and medium-size business policy (SME).

SME policy (Tanzania) measures business in terms of capital or a number of persons employed. The term family business or small business falls into the category of SMEs. According to SME policy any business undertaking with employment of fewer than 5 employees and capital investment up to 5 million shillings is termed as micro business; 5 to 49 employees and capital up to 200 million shillings is small business; 50 to 99 employees with capital up to 800 million shillings is medium business and 100 plus employees and capital above 800 million shillings is large business. The business under study was in the range of 5 to 49 employees and capital not exceeding 200 million shillings which is small businesses. For this argument, small business and family business have been used interchangeably (URT, 2003).

Several studies have been done on the contribution of social capital to family business growth from infancy stage to maturity and further sustainability. A strong correlation between social capital and family business continuity has been recognized in various studies. Research studies show that social capital can precede both human and financial capital in that positive family social capital can be instrumental in obtaining the human capital of family members to help out in the business.

According to Chin (2012) in a study of family business sustainability in Malaysia, three forms of capital that are human, social and financial capital were studied to address the family business sustainability. It was found that the social capital in the father-son relationship provides the fertile ground for teaching and mentoring; this will ensure successful business continuity in the family. Social capital expands the family business from generation to generation hence sustainability. The family's strong social and human capital in the first two generations of owner-founders enables the achievement of the creation of financial capital as well as the growth and re-generation of financial capital in the business.

Danes *et al.* (1985) point out that, family social capital is made up of the goodwill that exists among the family members and between the families and their community members that are encapsulated in inter-personal relationships. Social capital can take the form of trust, mutual respect, love, selfless concern and reciprocal exchanges within family members and with their staff. Of the three types of capital, family social capital may give the family business a competitive edge over the non-family business in that it is embedded within family relationships which are unique to the family and which cannot be transferred or replicated elsewhere.

Danes *et al.* (1985) in studying social capital and family business sustainability, pointed out that social capital and social networks contribute to firm success, in areas such as in tapping business

opportunities, gaining access to finance, generating customer and worker loyalty and in aiding the development of human capital in subsequent generations.

Sorenson *et al.* (2009) reveal a significant positive correlation between family social capital and firm performance. The study was done on a family's business owned by its two members - husband and wife. The findings revealed that a husband-and-wife team who run a successful bed-and-breakfast business made concerted and consistent efforts at building positive relationships with their customers and the community, to good effect. Furthermore, the co-operative relationships within the family itself enabled them to have extra help during peak periods in the business.

Van-Auken and Werbel (2006) suggest that family members provide financial resources through outside sources of earned income, emotional support in the form of encouragement and instrumental support in the form of knowledge or physical assistance in helping the family business to survive.

According to Lester and Canella (2006), family firms use interlocking directorates among networks of family firms to attain moral support and advice from other family firms as well as to avoid conflict. On an individual level, at the early stages of new family firm ventures, family members as well as friends, not directly related to the firm, are sought for moral advice.

Social capital is important to the efficient functioning of modern economies and for stable liberal democracy. It constitutes the cultural component of modern societies, which in other respects have been organized since the Enlightenment on the basis of formal institutions, the rule of law, and rationality (Anderson, 2003; Boccato *et al.*, 2010). Building social capital has typically been seen as a task for founder-owner but unlike economic policies or even economic institutions; social capital cannot be so easily created or shaped by public/family policy (Blount, *et al.*, 2013). Multiple studies have studied social capital in various dimensions but in this paper, the attention is paid on social capital networking and explore the contribution of social capital networking towards the family business development and sustainability.

The analysis of previous studies has noted that many studies have addressed social capital by stressing all dimensions of social capital, specifically business culture. Few studies have mentioned networking as an important variable for business development through social capital. This study intended to fill that gap by only focusing on social capital networking and its impact on family business sustainability in Tanzania. Utengule-Usongwe ward in Mbeya Municipal was chosen as the case study where small business entrepreneurs were studied. The ward has more family with businesses for more than a decade compared to other wards. Also, this study addressed family by taking into account all business members of the family that are involved in operations of the business such as children, son-in-law, and daughter-in-law.

Conceptual Framework

The study was based on social capital networking elements as independent variables while sustainability of family businesses as the dependent variable. The variables used to determine the networking and relationship in the study were the relationships, interactions and connections as

independent variables, social capital as mediating variable while sustainable family business as the dependent variable.

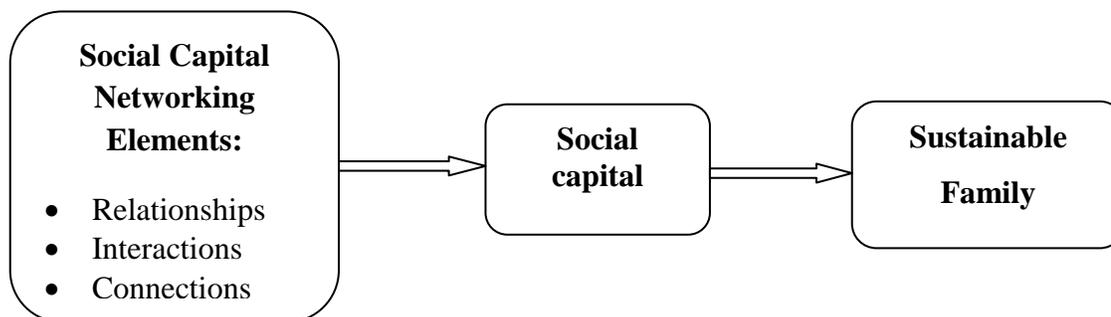


Figure 1. Conceptual Framework

The social networking variables were adopted from Thornton model of three dimensions of capital, social capital, human capital and financial capital (Thornton, 2017); whereby, networking as a concept on the three dimensions was adopted from Deans *et al.* (1985) and Lester and Cannella (2006).

In summary, the measurement of social capital could be summarized as follows:

1. Social capital was measured as an individual, group or organization and a collective community-level attribute.
2. The indicators or elements used to measure social capital fall into four categories:
 - i. Social networks (relationships)
 - ii. Networks, relationships and connections
 - iii. Trust
 - iv. Civic engagement and voluntary activities (including cooperation, political participation, social participation, associational memberships, community volunteerism. Civic norms, shared norms and values interactions and connections); trust and reciprocity; norms and values (including civic norms); and civic engagement (e.g. associational memberships and civic participation). (Coleman, 1988) (Lester & Cannella, 2006) (Portes, 1998)

The assumption is that bringing together social networks reflects the diversity and sustains generalized trust and reciprocity among the individuals. The networks create bonding between individual and bring together sustainable relationships. The main element of a sustainable network is trust among the members of the group.

Methodology

This study adopted explanatory research design, which attempted to explain whether the existence of social capital contributes to family business sustainability. The study was done in Utengule-Usongwe ward in Mbeya City. The ward had a population of 215,000 people where the target business population was 1885 which comprised of 8 wholesalers, 5 transporters and the rest were retailers of different sub-sectors. The sampling procedure carefully selected sample of 320 purposively (Krejcie and Morgan, 1970). The nature of sampling with the help of Ward staff managed to get the information for the 320 desired respondents; as when one is not available the

next business owner was approached. The study designed questionnaire guides which were used by trained interviewers for the purpose of collecting information which would avail information on the impact of social capital on business sustainability. The sample size was determined by the use of a sample size determination table developed by Krejcie and Morgan (1970). The collected data were analysed by using correlation analysis. The analysed data were intended to generate information on how the social capital supports business growth and leads to sustainability of family businesses.

Results and Discussion

The findings and discussion in this section are based on primary data collected from the source, i.e. business owners. They are presented in several sections. The first section deals with descriptive statistics of the businesses and the second section consists of correlation analysis, through which the relationship between social capital elements and family business sustainability as determined. Descriptive statistics are used to explore the data collected and to summarize and describe those data (Cooney, 2009).

Characteristics of Businesses

Since the study sampling was purposive, it was easier to get all the 320 respondents. The study collected data from business operators of various kinds. The study intended to get informed about the nature and generation of the businesses the area of study. Out of the 320 business operators who responded, 158(49.4%) deal with food stuff, 107(33.4%) household items, 11(3.4%) deal with electronics, 20(6.3%) deal with beauty and 24(7.5%) deal with building materials. The results are presented in Figure 1. The results show that majority of businesses deal with trading food staff. It is known that Utengule-Usongwe ward is dominated by farmers who sell their products at Mbalizi market, whilst the petty food vendors tend to buy cereals at the market which makes simpler for buyers and sellers of food products. Also, the Mbalizi business centre, which is in Utengule-Usongwe Ward, has a big market where a large number of people are trading, travelling and interacting. The results show that few businesses are involved with electronics businesses as shown in (Figure 1).

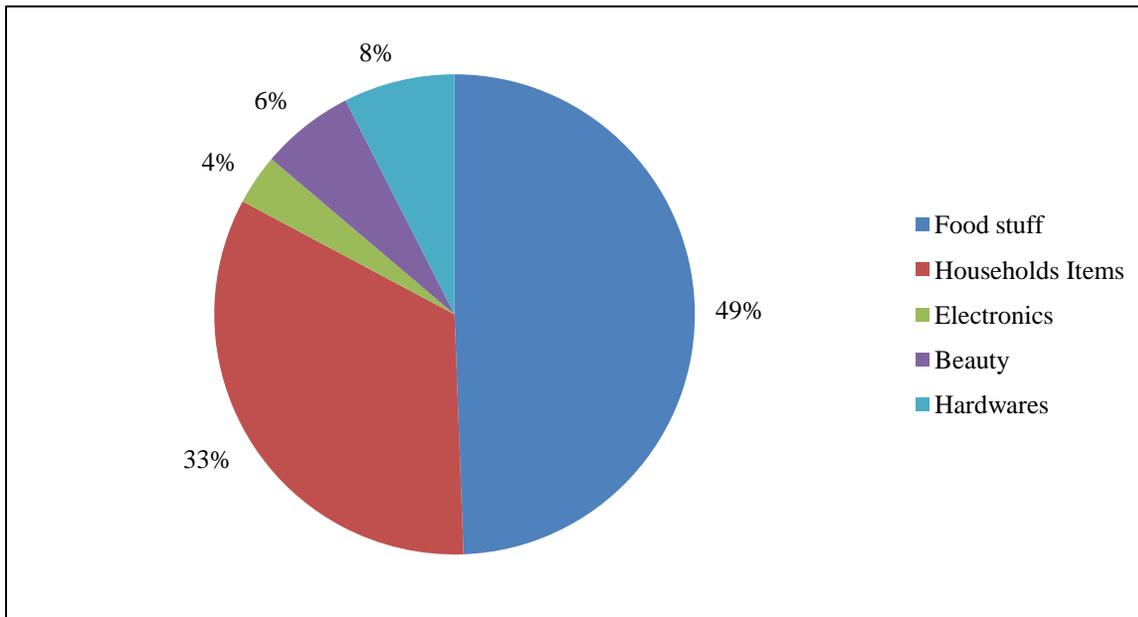


Figure 2. Characteristics of Business

The study also wanted to be informed about the respondents’ experience in business operations. The study found that out of the 320 respondents, 68% had been in business between zeros to five years, 26% had been in business for 6-10 years; and that only 6% had been in business for more than 11 years or more. The results have been shown in Figure 1.

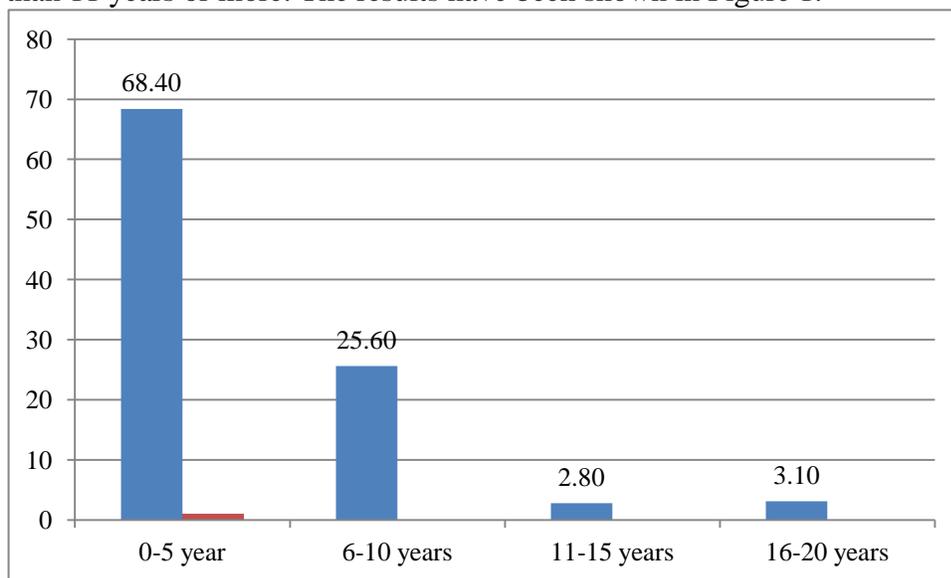


Figure 3. Respondents’ experience in business

The findings reveal that majority of respondents had been in business for less than 10 years and 68% for less than five years. The results correspond to a study by Tonya (2015), that majority of family businesses fail to operate beyond five years. The reason for non-sustainability might

relate to Tonya's contribution that, business transfer funds to other business after success in one intervention. Despite the finding and conclusions for possible business failure, other scholars have made tremendous job and come out with summarized causes of small/family business failures. The scholars include, (Boeker & Wiltbank, 2005) (Mbonyane, 2006); (Adeniran & Kevin, 2011); (Mbulu, 2012); (Fatoki, 2014); (Hoque & Sitharam, 2016). The summaries of arguments for the causes of Small/family business failure are based on internal and external factors of the business as:

- Lack of knowledge in legal matters which include registration, tax returns, licensing and regulatory framework of business.
- Lack of funding for operational and capital investment.
- Lack of general acumen in general business management.
- Lack of proper planning for human resources, and a relationship between members of the business.
- Lack of employees' satisfaction in the work environment and managerial skills focusing on future of the business undertaking.
- Poor business infrastructure mostly in the rural areas where there is a potential for business growth.
- Poor market information about relevant markets, as the majority of family businesses, lack access to information. Most available information is intended for large business.
- Changes in technology: Technological changes affect SME as these changes require them to change accordingly and these changes come with financial implications.

Further, the study was interested in understanding the status of the generation to which each business belongs. The survey results are presented in Table 1.

Table 1. Percentage of respondents based on Generation in Business

	Frequency	Percent
Establisher	291	90.9
First generation	28	8.8
the second generation	1	.3
Total	320	100.0

Source: Field data (2017)

Table 1 shows that a large percent - 291(90.9%) of business operators belonged to the status of establisher. Failure of family firms to move to the next generation is contrary to studies by Coleman, 1988; (Hoffiman, Woehr, Maldagen-YoungJihon, & Lyons, 2011) which concluded that a distinct feature of family social capital is that it consists of "blood ties", i.e. an unbreakable genetic connection that usually creates a deep emotional connection which other social relationships seldom achieve. This is partly due to the fact that the human socialization process starts within the family and furthermore, that the time span of family relationships is rather long-term as opposed to other relationships. It was learned that majority of family members fear to fully participate in the business management of the family because of the uncertainty of compensation. The uncertainty of compensation contradicts with the theory of business separation with the owner. Separation of ownership and management in corporate governance

involves placing the management of the firm under the responsibility of professionals who are not owners. Owners of a company may include shareholders, directors, government entities, other corporations and the initial founders. This separation allows skilled managers to conduct the complicated business of running a large company (James, 2017).

The study further noted that most of the family businesses in Tanzania do not have the culture of succession planning. There is no tendency for owners to nurture youths to take over the management of family businesses in a long-run. This tendency could be one amongst major reasons for collapse and failure of most of the businesses in Tanzania. The study had found that most businesses fail to reach the second generation of ownership. It was revealed that only 1(0.3%) of businesses were owned by the second generation.

Reliability Analysis

The study carried a reliability test to ascertain itself regarding the data reliability. Reliability analysis was measured by calculating the value of Cronbach's Alpha coefficient as a measure of internal consistency of data. The study had found the value of Cronbach's Alpha equal to 0.701. This value is greater than 0.7 which indicates there is a high degree of internal consistency and hence data were reliable.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
0.701	12

The relationship between social capital elements and family business sustainability

The study intended to identify the relationship between the social capital elements and family business sustainability. The study carried the correlation analysis to identify the values of Pearson correlation coefficients values by using SPSS software and determine the degree of relationship between the social capital factors and business sustainability.

The analysis had revealed the Pearson correlation coefficients for holding regular meetings to exchange ideas among members of the family had a positive but weak relationship ($r=0.174$). The other two (2) statements of interaction element of social capital found to have a very weak relationship and one (1) emerged to have a negative relationship ($r= -0.16$) and therefore only one statement had appeared to agree with the theory that concludes that relationship element of social capital has a positive relationship with family business sustainability. Also, the study analyzed to find the Pearson correlation coefficient values for the relationship element of social capital for the four (4) statements and it was found that the statements of good relationship between family members and stakeholders had $r=0.45$, having an arbitration technique to settle disagreement among members had $r=0.318$, Disregard members status in decision making e.g. education, income, gender had $r=0.263$ and inclusion all members of the family such as daughters, son in law, daughter in law had $r=0.097$.

Further, the study analyzed the connection element of social capital and the values of Pearson correlation coefficients were found. Frequently contact with customers on new products and

services and give feedback had $r=0.327$, each member having many friends had $r=0.281$, Segment customers and advertise in media (phone, internet etc) had $r=0.095$ and Business using social forums to contact customers and stakeholders e.g. WhatsApp, face-book had $r=0.086$.

Discussion

The study findings had revealed that a factor of a good relationship between family members and stakeholders (e.g. suppliers, customers) under relations element to be the most critical in forming family business sustainability. The factor has the f-change of 80.4% which indicates that good relationship between family members and stakeholders has a strong positive correlation with family business sustainability. This is exactly as what had been found by other studies that suggested that family relationships are stronger, denser, more enduring and emotionally intensive as family members have a shared history Hoffiman, et al. (2011). Strong and dense ties directly impact the relational dimension as they create shared values, norms and obligations which build the ground for emotional attachment and inter-personal trust to arise Coleman, 1988; Hoffiman *et al.*, 2011; Seanman *et al.*, 2010). Due to the strength and long-term perspective of family relationships, family values and traditions create a set of norms, obligations and expectation within the family that help to create a high sense of duty, care and trust among members (Hoffiman *et al.*, 2011; Seanman *et al.*, 2010).

The study found that having an arbitration technique to settle disagreements among members in case misunderstanding happen is very crucial for family businesses to survive longer in the market and industry. This was noted by the value of Pearson correlation coefficient of 31.8% that implies that positive correlation exists between having techniques of settling misunderstanding among members of the family and business sustainability. This would suggest that efforts to improve and strengthen good relationship between family members and stakeholders are likely to have an important and positive effect on long-term survival of family businesses in Tanzania. The relation element should be very much considered. Family members' good relations will establish trust in business and hence good cooperation in running business affairs.

The connection element of social capital was also found to hold worth in contribution of family business sustainability. It was found that frequently contact with customers on new products and services and give feedback had a Pearson correlation coefficient value of 32.7%.

The correlation coefficient value of the social capital element of connection stated by frequently contact with customers on new products and services and give feedback implies there is a weak positive association with long-term business survival that is family business sustainability. This is directly proportional and concurs with suggestions by Lester and Cannella, 2006 that family firms use their social networks not only as means by which the firm attains performance advantages but also from which they draw moral support and advice. This suggests that regular communication leads to family business sustainability. This has the implication that family business members should ensure regular communication with customers. This plays a significant role in building rapport. Also, family business members should allow customers to freely express their views and opinions, and generally, feedback for what they have purchased and/or consumed.

The social capital element of interaction was found to have no impact on family business sustainability as per Tanzanian context of this study. It was found that among the four studied elements; only one statement of interaction had a Pearson correlation coefficient of less than 20% that implies that there is a very weak correlation with family business sustainability. The other three statements analyzed scored negative values of Pearson correlation coefficient and therefore the element of interaction had shown to have no impact on family business sustainability.

Conclusion and Recommendations

The results of this study confirm that relations and connections are the key elements of social capital in family business sustainability. The relationship among family members should be strengthened through affective and proper succession planning. There should be a culture of nurturing youth to take over the management role of managing the business. This should be in line with members to the establishment of short and long-term plans of the business. The study further wishes to provide the following recommendations:

- i. In family businesses, not only financial performance is the sole or accurate indicator of firm success but other factors of relationship and connection among family members have a positive effect on family business long-term survival.
- ii. Strengthen the social capital is very crucial and shouldn't be left behind as most family firms put much emphasis on financial and material resources capital.
- iii. Family business firms should build a culture of succession planning to ensure long-term family business sustainability.
- iv. Moreover, a study wishes to recommend that in order to build the family members' confidence and loyalty to the family businesses, there should be a system of payment in which those who are more deserved receive more salary and vice versa. Moreover, it should be determined, based on the articles of association of family agencies, that how much money each member has invested so as to prevent the possible misuses among the members due to emotional relations.

Area for Further Research

The paper concludes that future research needs to integrate not only the financial benefits of social capital to family firms' sustainability, but also the reputational, or socio-emotional benefits of social capital to family firms. Not only will this help to establish a more coherent understanding for academics and explanation for yet unexplained phenomena, but also develops theories and solutions for family firms that consider the complexity and impact of family relationships in the firm setting. This study further suggests studies should be conducted to examine the factors dominating the continuity and decline of family businesses in a specific industry.

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References

- Adeniran, T., and Kevin, J. (2011). *Investigating the level of Internet Capabilities of SA in Changing Environment*. Retrieved November 23, 2017, from www.zaw3.co.za.
- Anderson, R. C. (2003). Founding Family Ownership and Firm Performance: Evidence from S&P. *Journal of Finance Vol 15* , 1301-1328.
- Blount, I. Y., Smith, D. A., and Hills, J. (2013). Minority Business Networks as Source of Capital for Minority Firms. *Journal of development Entrepreneurship Vol 18* , 135-148.
- Boccatto, E., Gispert, C., and Rial, J. (2010). Family Owned Business Succession: The influence of Performance of Normination of Family and Non-family Member. *Journal of SME Management Vol48*, 497-523.
- Boeker, W., and Wiltbank, R. (2005). New Ventures Evolution and Managemegerial Capabilities. *Journal of Organization Science Vol 16(2)*, 123-133.
- Chin, A. H. (2012). *The role of Family Social, Human and Financial Capital in Family Business Sustainability*.
- Coleman, J. (1988). *Foundations of Social Theory*. Cambridge: Belknap and Harvard University Press.
- Combs, J., Penney, C. R., Crook, T. R., and Short, C. J. (2010). The Impact of Family Representation on CEO compensation. *Entrepreneurship Theory and Practice Vol 34*, 1125-1144.
- Cooney, S. (2009). *Build Green Small Business: Profitable Ways to Become an Entrepreneur*. NY: UN.
- Danes, S. M., and Brewton, K. E. (1985). Follow the Capital: Benefits of Tracking Family Capital Across Family and Business Systems. *Family Social Science Department Journal*.
- Dave, S., and Sharma, A. (2013). *Small Scale Family Business Succession and Sustainability. A case in Chattisgarh*. Chattisgarh: IL.
- Famoso, V. S. (2015). Family Firms and Social Capita: A Brief Literature Review. *Mediterranean Journal of Social Science*.
- Fatoki, O. (2014). The Causes of the Failure of new SME in SA. *Mediterranean Journal of Social Sciences Vol 5(20)*, 294-300.
- Ferragina, E. (2010). Social Capital and Equality: Tocqueville's Legacy. *The Toqueville Review Vol 31*, 73-98.
- Ferragina, E. (2012(a)). *Social Capital in Europe: A Comparative Regional Analysis*. Cheltenham: Edward Elgar.
- Fukuyama, F. (1999). Social Capital and Civil Society. *International Monetary Fund, Second Generation* , 1-7.
- Hoffiman, B. J., Woehr, D. J., Maldagen-YoungJihon, R., and Lyons, B. D. (2011). Great Man or Great Myth?. A qualitative Relationship Between Individuals and Leaders Effectiveness. *Journal of Occupational and Organisation Psychology, 84(2)* , 347-387.

- Hoque, M., and Sitharam, S. (2016). Factors Affecting the Performance of SME in Kwanzulu-Natal. *Journal of Problems and Perspectives in Management*, 1-3.
- Hou, J., and Neely, A. (2013). *Analysing the Effects of Social Capital on Risk Taken By Suppliers in outcome-Based Contracts*. Cambridge: Cambridge Service Alliance.
- Huber, F. (2009). Social Capital of Economic Cluster: Towards a network-based Conceptions of Social Capital. *Journal of Economic and Social Geography Vol 100*, 160-170.
- James, R. (2017). *The Advantages of the Separation of Ownership and Management*. Leaf Group Ltd.
- Josserand, E. (2012). Social Capital of the family and Organisational Efficiency. *Management Journal Vol 15*, 415-439.
- Kleemann, F. C., and Essing, M. (2013). A providers' Perspective on Supplier Relationship in Performance Based Contracts. *Journal of Purchasing and Supply Management*, 1843-1858.
- Krejcie, R. C., and Morgan, D. W. (1970). *Determination of Sample Size for Research Activity*. Education and Psychological Measures.
- Lester, R. H., and Cannella, A. A. (2006). Interorganisational Familiness: How Family Firms Use Interlocking Directorates to Build Community Level Social Capital. *Entrepreneurship Theory and Practice Vol 30*, 755-775.
- Lin, S., and Hu, S. (2007). A Family Member of Professional Management? The Choice of CEO and Impact on Performance. *Corporate Governance Vol 15*, 1348-1362.
- Mbonyane, B. L. (2006). *Exploration of factors that lead to failure of SME in Kageso Town*. Kageso: College of Economics and Sciences. Magister Technology.
- Mbulu, S. (2012). <http://www.kenyaplex.com>. Retrieved November 23, 2017, from Factors that causes the failure of SME Enterprises in Kenya.
- Nahapiet, J., and Ghoshal, S. (1998). The Strengths and Weak Ties. *American Journal of Sociology Vol 78*, 1360-1380.
- Portes, A. (1998). Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociolology Vol 24* , 1-24.
- Robison, L. J., and Schmid, A. A. (2002). Is Social Capital Really Capital? *Review of Social Economy Vol 60* , 1-21.
- Rose, N. (2000). Community Citizenship and Third Way. *American Behavioural Scientists Vol 43*, 1395-1411.
- Saha, M., and Banerjee, S. (2015). Impact of Social Capital on Small Firms Performance in West Bengal. *Journal of Entrepreneurship, Vol 24 (2)*, 345-376.
- Seanman, C., Pearson, M., and MacQuaid, R. (2010). Networks in Family Business: A Multi-Rational Approach. *Family Business Review Vol 34*.
- Soreson, R. L., Goodpaster K, E., Headberg, P. P., and Yu, A. (2009). The Family Point of View, Family Social Capita and Performance. *Family Business Review*, 239-253.
- Thornton, P. H. (2017). *The value of Social Capital in New Venture*. The Duke Entrepreneurship Manual.
- Tonnies, F. (1995). *Community and Associations*. London: Routledge and Kegan Paul.
- Tonya, E. M. (2015). *Succession Planning and the Sustainability of Transport Enterprises*. DSM: Open University of Tanzania.
- URT. (2003). *Small and Medium Enterprises Policy*. DSM: Government Printer.

- Van-Auken, J., and Werbel, F. (2006). Family dynamics and Family Business Financial Performance Spousal Commitment. *Family Business Review*, 49-63.
- William, D. (2006). On and Off the Net. Scales of Social Capital in an online Era. *Computer-Mediated Communication, Vol 11*, 593-628.
- Wilmott, P. (1986). *Social Networks, Informal Care and Public policy*. London: Policy Studies Institute.

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Books

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Monographs

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