The Relationship between Diversification Strategies and Capital Structure of Non-Financial Firms Listed At the NSE

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Abstract

Purpose-This study was carried out with an aim to analyze the effect of diversification strategies on capital structure of non-financial firms listed at NSE. The study focused specifically on analyzing the effect of product (related and unrelated) and geographical diversification on capital structure.

Methodology-An exploratory study design was used to collect data, with the population of the study being 64 firms listed in NSE. Out of the 64 firms, 41 non-financial firms were selected as the sample of the study. Data was collected from secondary sources, NSE and capital market authority. Data collected was analyzed through STATA by the use of panel data regression analysis.

Findings- Related product diversification had a coefficient of 21.5(p-value=0.007) indicating that it has a significant relationship with capital structure. The study results show that debt is the most preferred form of financing in related product diversification strategies. Unrelated product diversification had a coefficient of 22.7(p value =0.006) indicating that it has a significant relationship with capital structure.The findings of this study show that debt is the most preferred form of financing in unrelated product diversification strategies. Geographical diversification had a coefficient of 0.178 (p-value=0.799) indicating that it doesn't have a significant relationship with capital structure.Geographical diversification boosts the worth of shareholders by taking advantage of specific assets and by accelerating functioning flexibility.

Implications-This study recommends that firms can increase their market power through increasing their new products and markets, which can be financed though debt financing. In addition, the management of firms should strive towards having optimum capital structure by increasing their equity level and reducing dependence on debts so as to avoid being cash strapped and debt ridden. This study also recommends that firms focus on geographic diversification as it has advantages such as lower cost of production, but it should not be financed through debt or equity.

Value- Relevant government authorities, who formulate policies to guide companies and protect consumers, would benefit from important information the study would provide for this purpose.

Key Words: Diversification, Capital structure

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Introduction

Diversification was originally developed as one of the basic research axis in strategic management. Diversification is defined as an increase in the number of industries a business participates in. Hence diversification implies a firm moving into a number of markets (sectors, industries, or segments) it was not previously engaged in. Matsusaka (2001) defines it as a process used by firms to search for new uses of their organizational capabilities. By adopting diversification, firms are presented with decisions that affect their capital structures.

The capital structure decision of a firm is an issue that has raised questions on the balance of debt and equity in the capital structure. Capital refers to the percentage of capital at work in any firm thus capital structure can be explained as a mix of long-term debt (including bonds and loans), equity (common and preferred stock) and hybrid securities (such as convertible debt and preferred shares). Given the fact that capital structure decisions emphasize on a combination of debt and equity to finance a firm, any financial decision taken by a firm in regard to capital structure, determines the maximization value for any firm (La Rocca, et al., 2009)

The effect of diversification on capital-structure choices has been explained mostly through the coinsurance effect, the transaction cost theory, and by applying the agency cost theory. The coinsurance effect deals with the reduction of operating risk, due to the imperfect correlation between the different cash flows of a firm running diverse businesses (Qureshi, 2009). It is more relevant for firms that develop unrelated diversification strategies because the lack of correlation between businesses is greater: these firms should be able to assume more debt. Transaction cost theory supposes that companies try to minimize the costs of transacting with the environment and that they also try to minimize the bureaucratic costs of transacting within the company.

Relevant distinction has been given between public and private equity, with literature suggesting that listed companies have dispersed shareholders thus an easier access to funding though with increased exposure to agency problems. Non listed companies on the other side are faced with more difficulties in raising capital. Non listed companies

experience more difficulties in raising large amount of funds to finance expansion, because of a higher cost of capital, but should take advantage of an enduring stakeholders' commitment and of a closer monitoring of professional management. Thus listed and non-listed firms have diversification strategies which them differently (Capasso*et al* (2005)

Diversification Strategy

Diversification is defined as the entry of a firm into new lines of activities either by the process of internal expansion or by acquisition. It is also defined as the process by which firms extend or grow the range of their businesses, outside those countries in which they are currently engaged. This definition encompasses the directions of diversification, which include vertical and horizontal integrations (Chkir & Cosset, 2001).

A diversified firm can therefore be considered to have operations in more than a single industry (Ibrahim & Kaka, 2007). Diversification increases the range of a firm's investment opportunities, as it enables a company to take advantage of the more profitable opportunities in sectors of the economy, in which it previously had no activities (Ibrahim and Kaka, 2007). Diversification strategies may take the following seven categories; single business, related vertical, related constrained, related linked-unrelated, related constrained, related linked, and unrelated business (Singh et al., 2003).

Capital Structure

It may be defined as the mix of debt and equity instruments which are used to finance a firm's assets from the capital structure. The mix comprises of common stock, debt and preferred stock and it is different for each firm. Managers of a firm have a big challenge of choosing the optimal capital structure, which is the mix of securities that minimizes the cost of financing the firm's activities and thereby maximizes the value of the firm (Ajay & Madhumathi, 2012). Enow (2010) describes optimal capital as the capital structure with a minimum weighted cost of capital and thereby maximizes the value of the firm's stock, one in which the share price is maximized.

A firm's capital structure can have significant implications on a firm's operations; it can both create opportunities and also impose limitations for the firm (Chen & Low,

2004). False capital structure decisions, may lead to financial distress and eventually to bankruptcy hence management of a firm sets its capital structure in a way that the firm's value is maximized. While debt financing is beneficial to firms because it can lower the firm's overall cost of capital and helps shield some income from taxes, it also poses a risk because failure to make periodic interest and loan payments can lead to financial distress and bankruptcy (Poddar & Mittal, 2014).

A capital structure is considered to be good when it consequently results in a fall in the cost of capital. The main advantages of debt are that it contains less risk for the investors than equity also its interests have a tax advantage. Conversely it also has disadvantages for instance it increases the variance of earnings which provokes the investors to ask for greater returns. Also it increases the cost of financial distress which may be considerable if a firm uses debt often (Markopoulou & Papadopoulos, 2008). Enow (2010) argued that in contrast to debt financing, equity financing does not require direct obligation from the firm to repay funds. Instead, equity investors become part of the owners in the business, and thus are able to exercise some degree of control of the firm.

Relationship between Corporate Diversification and Capital Structure

The effects of product diversification and geographical diversification can be explained through the co-insurance effect. Co-insurance effect is a corporate debt theory that suggests that firms can reduce risk by diversifying their activities. The reduced risk helps to boost a firm's debt capacity thereby signifying a positive relationship between leverage and the degree of diversification (Apostu, 2010). Qureshi (2009) argued that aggregating business segments that have imperfectly correlated cash flow streams reduces the variability of earnings for the combined firm.

By increasing a magnitude of insurance pool through geographical or product diversification, expected losses become more predictable and earnings volatility can be reduced. Singh et al. (2002) extended this argument and showed theoretically that the co-insurance effect leads to an increase in the market value of the diversified firm's debt and an associated decline in the value of its equity. Banerjee & Dey (2011) argue that debt capacity adds value to the firm; hence diversification increases firm value by increasing overall debt capacity.

Nairobi Stock Exchange

The Nairobi Securities Exchange (NSE) was constituted as Nairobi Stock Exchange in 1954 registered under societies act as a voluntary association of stockbrokers. A number of developments have transpired since inception, which include the automation of the trading in government bonds through the Automated Trading System (ATS) in 2009. The name was changed to Nairobi Securities Exchange in the year 2011 to reflect the strategic plan to evolve into a full service securities exchange which supported trading, clearing, settlement of equities, debt, derivatives and other related instruments.

Currently there are 64 companies listed on the NSE under its 11 segments, whereby the biggest segment is banking which has 12 firms. The other segments include: Agricultural (7), Commercial and Services (10), Telecommunication and Technology (1), Automobiles and Accessories (4), Insurance (6), Investment (3), manufacturing and Allied (9), Construction and Allied (5), Energy and Petroleum (5) as well as the Growth Enterprise Market Segment (GEMS) which has 3 firm listed after its launch in January, 2013. The NSE is the principal securities exchange of Kenya and it is licensed and regulated by the Capital Markets authority (CMA), a government regulator charged with licensing and regulating capital markets in Kenya. (www.nse.co.ke)

Research Problem

Diversification is one significant method that firms use to maintain their competitiveness and enhance their profitability. Firms seek diversification strategy in order to achieve value creation through economies of scope, financial economies, or market power (Chen and Yu, 2012). Due to stiff competition and changes in the business environment, firms have been forced to review their corporate strategies. Diversification strategy is one of such strategies. However its effectiveness has been questioned and there are mixed results by researchers. It's not clear if diversification adds any value to an organization i.e. if diversified firms perform better than focused

firms (Rushin, 2006). It is also not clear whether diversification has a positive financial impact on firms.

There have been well established frameworks and theories established to understand the relationship. Globally, studies by Ajay and Madhumathi (2012) and Qureshi (2013) in India and Pakistan respectively have been carried out to analyze the relationship between diversification strategies and capital structures, albeit with a focus on non-financial firms more specifically on food and chemical in manufacturing industry. Chang & Wang (2007) also carried out a study on the effect of product diversification strategies on the relationship between geographical diversification and firm performance. Similarly Jandir & Funchal (2013) in a study in Brazil focused on the effect of diversification strategies on capital structure, more specifically on cross pledging among non-financial services. These studies were carried in a different context and its findings may not be applicable in the Kenyan context.

Locally, a study by Ongeri (2014) was carried out on firms listed at NSE on the impact of diversification strategies on capital structure and with a recommendation for further research to determine the impact of geographical diversification. Akinyi (2013) carried out a study to investigate the effect of income source diversification on the financial performance of commercial banks in Kenya. This study focused on financial firms, both listed and non-listed. With these research gaps identified; the study wished to fill the research gap by establishing the relationship between corporate diversification and capital structure of non-financial firms listed at the Nairobi Securities Exchange (NSE).

Objective of the Study

The objective of the study was to establish the relationship between corporate diversification and capital structure of non-financial firms listed in the Nairobi Securities Exchange.

Research Methodology

This study adopted an exploratory study design. This is because the study tends to explore or investigate more on the research questions and doesn't intend to offer a

conclusive solution to the existing problem. Data available at the NSE shows that there were 64 companies listed at the NSE as at 31st December 2015. The study inclusion criterion was all the 41 non-financial firms in Nairobi Securities Exchange. The remaining financial firms (banks and insurance companies) were excluded from the study. The researcher using census sampling method targeted all the 41 non-financial firms listed at the NSE for the period 2010-2015. These firms were chosen since they have a similar financial statement and respondents were drawn from all the 41 non-financial firms listed at the NSE. However the researcher only managed to get data for 32 non -financial firms which formed the basis of this study. This gives a response rate of 78.05%. According to Kothari (2004), a response rate of 50% and above is adequate for analysis.

Data Analysis

The study analysis and findings was based on secondary data. The data was collected from the annual financial data of the 32 out of the 41 non-financial firms listed at the NSE for the period 2010 to 2015; the data was obtained from the Nairobi Securities Exchange, Capital Markets Authority and respective companies' websites as well as their official publications. Other relevant published information from sources other than the respective companies were used; magazines and newspapers. Panel data regression analysis technique was used in the study to explore the effect of diversification strategy on the leverage decisions of firms after controlling for firm size. Before conducting regression analysis, diagnostic tests such as normality test, autocorrelation test, multicollinearity test, unit root test and heteroscadisticity test were conducted. In this study a regression model as shown below was applied.

$$LEV_{it} = \beta_1 INT_{it} + \beta_2 UNREL_{it} + \beta_3 IREL_{it} + \alpha_i + u_{it}$$

LEV represents capital structure used as the dependent variable varying across cross section and time. The independent variables used were *INTit, UNRELit, RELit* and *Sizeit* ie international market diversification, unrelated product diversification related product diversification and firm size respectively. Firm size will be used as the control variable in the study.

Results and Discussions

Descriptive Statistics

The study analyzed the capital structure decisions in a period of 6 years in relation to the selected diversification strategies as measured by related product diversification, geographical diversification and unrelated diversification. The descriptive statistics comprised of mean, minimum, maximum and standard deviation of the dependent variable (DE-capital structure) and the independent variables (related product diversification strategies-RPDS , geographical diversification strategies-GDS and unrelated product diversification-URPDS).

Table 1: Desciptive Statistics of the Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
DE	114	1.475526	1.344059	0	6.6
RPDS	114	.929386	.1396537	.47	1
URPDS	114	.07	.1369969	0	.53
GDS	114	.8205263	.2249438	.22	1.08
Size	114	22.92254	1.719617	19.99	26.65

Source: Audited company financial statements 2010-2015

The results show that the average debt equity ratio for all the 32 companies for the period ranging from 2010 to 2015 was 1.475526 with a minimum of 0, maximum of 6.6 and standard deviation of 1.344059. The results also show that the average related product diversification strategies for all the 32 companies for the period ranging from 2010 to 2015 was 0.929386, with a minimum of 0.47, a maximum of 1 and a standard deviation of 0.1396537.

Unrelated product diversification for the period ranging from 2010 and 2015 had a mean of 0.07, standard deviation of 0.1369969, minimum of 0 and maximum of 0.53. Comparatively, for the period ranging from 2010 to 2015 geographical diversification strategy had a mean of 0.8205263, standard deviation of 0.2249438, minimum of 0.22 and maximum of 1.08. In addition, the average size for all the 32 companies for the period ranging from 2010 to 2015 was 22.9325, standard deviation was 1.719617, standard deviation was 1.719617, minimum was 19.99 and maximum was 26.65.

Trend Analysis

This section presents trend analysis for the independent variables (related product diversification strategy, unrelated product diversification strategy, geographic diversification strategy), dependent variable (debt to equity ratio) and the control variable (size).

Debt Equity Ratio

Figure 1 shows the trend of the average debt to equity ratio for all the 32 companies for the period ranging from 2010 to 2015.

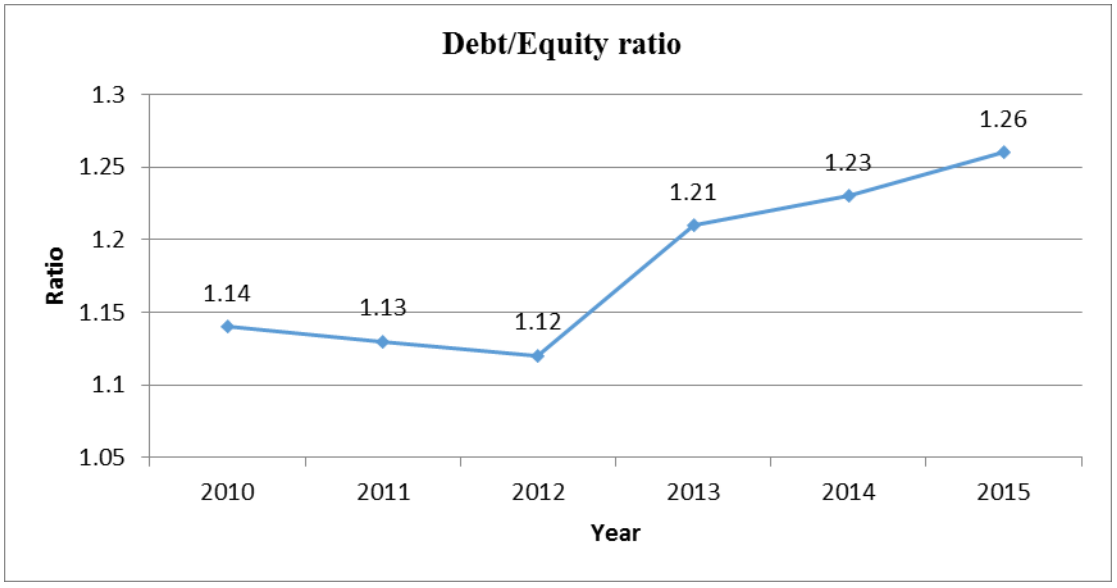

Figure 1: Debt Equity Ratio

From the findings, the average debt to equity ratio for the 32 companies in the year 2010 was 1.14. This figure decreased to 1.13 in the year 2010 and 1.12 in the year 2012. In the year 2013, debt to equity ration increased to 1.21 and then to 1.23 and 1.26 in the years 2014 and 2015, respectively. The results show that although debt to equity ratio was flactuating over the study period, it generally increased from 1.14 in 2010 to 1.26 in 2015.

Related product diversification strategy

Figure 2 shows the trend of the average related product diversification strategy for the period ranging from the year 2010 to 2015.

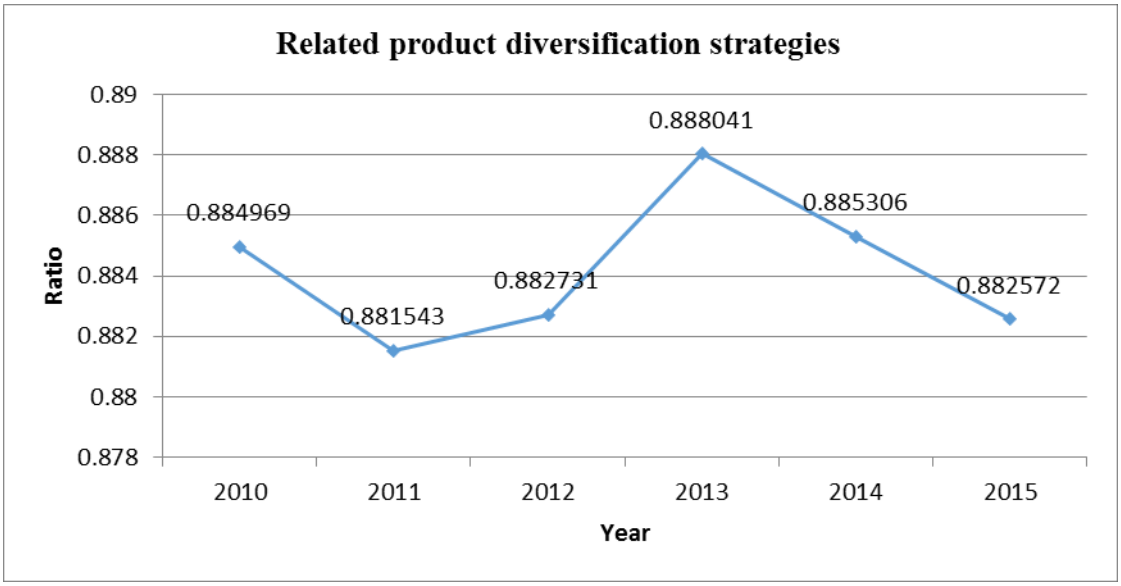

Figure 2: Related product diversification strategies

The results show that the average related product diversification strategy decreased from 0.884969 in 2010 to 0.881543. This figure then increased to 0.882731 in 2012 and 0.888041 in 2013. The average related product diversification strategy then attained a decreasing trend to 0.885306 in 2014 and 0.882572 in 2015. These results show that average related product diversification strategy has been flactuating over the study period.

Unrelated product diversification strategy

Figure 3 shows the trend of the average unrelated product diversification strategy for the period ranging from 2010 to 2015.

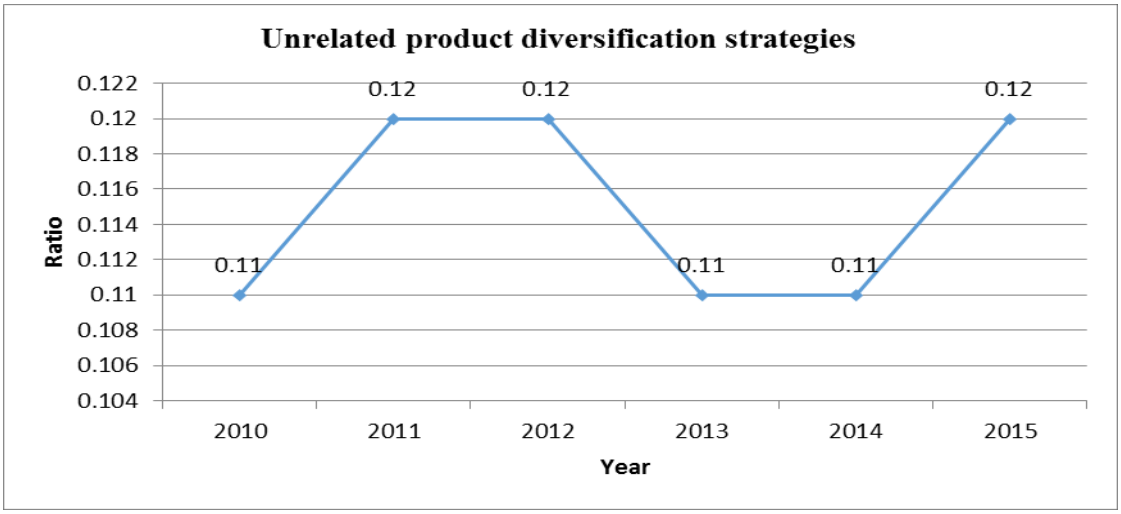

Figure 3: Unrelated product diversification strategy

Over the study period, unrelated product diversification strategy has been fluctuating. In the year 2010, the average unrelated product diversification strategy was 0.11, increased to 0.12 in 2011, decreased to 0.11 in 2013 and increased to 0.12 in the year 2015.

Geographic diversification strategy

Figure 4 shows the trend of the average geographic diversification strategy for the period between the year 2010 and 2015.

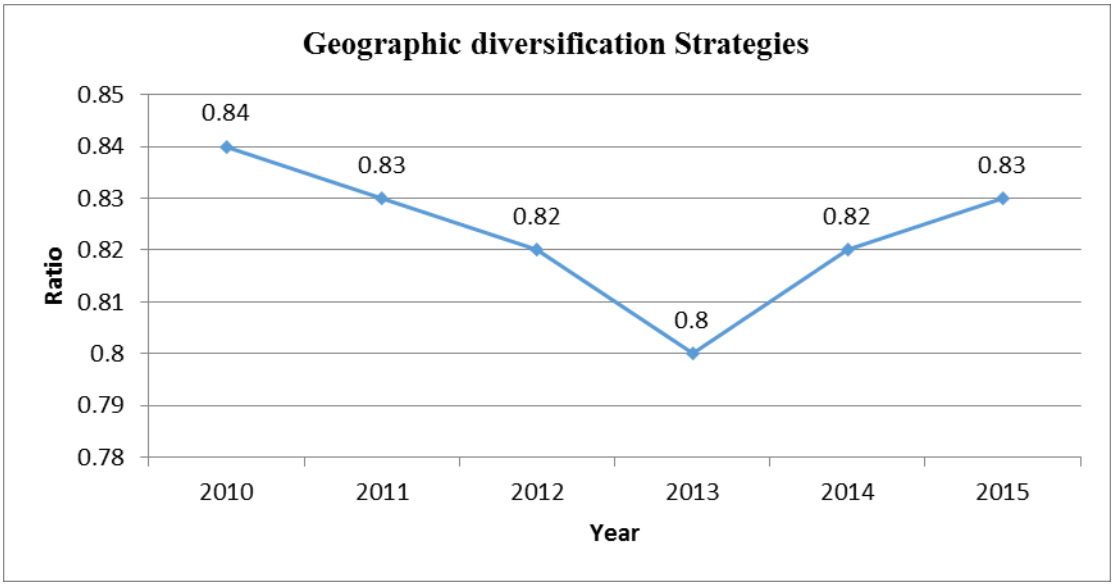

Figure 4: Geographic diversification strategy

The results show that geographic diversification strategy attained a decreasing trend and then an increasing trend. The average geographic diversification strategy decreased from 0.84 in 2010 to 0.83 in 2011, 0.82 in 2012 and 0.8 in 2013. It the increased to 0.82 in 2014 and 0.83 in 2015. The highest average geographic diversification strategy was in the year 2010 and the lowest was in the year 2013.

Size

Figure 5 shows the trend of the average company size (natural log of total assets) for the period between 2010 and 2015.

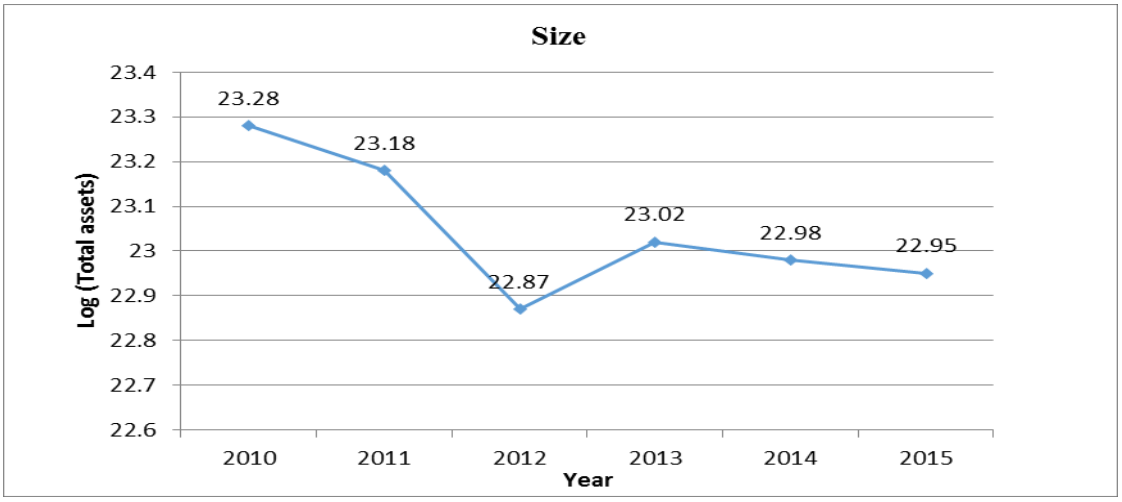

Figure 5: Company Size

From the findings, the average size (log of total assets) of the 32 companies has been fluctuating over the study period. In the year 2010 the log of total assets was 23.28, which decreased to 23.18 in 2011 and 22.87 in 2012. The figure then increased to 23.02 in 2013, decreased to 22.98 in 2014 and 22.95 in 2015. These findings imply that the average size (natural log of total assets) of the 32 companies has been fluctuating over the years.

Diagnostic Tests

Diagnostic tests in this study included Heteroscedasticity Test and Breusch and pagan Lagrangian multiplier test for random effects.

Test for Normality

Shapiro-Wilk test is the most commonly used test used in testing the normality of data. The null hypothesis indicates that data is normally distributed, which implies that if the p-values is less than the significance level, the data is not normally distributed.

Table 2: Shapiro-Wilk test

Variable	Obs	W	V	X	Prob>x
RPDS	**114**	**0.69758**	**27.869**	**7.434**	**0.065**

URPDS	114	**0.73487**	**24.432**	**7.140**	**0.082**
DE	114	**0.86324**	**12.603**	**5.661**	**0.311**
GDS	114	**0.84024**	**14.722**	**6.009**	**0.211**
Size	114	**0.96294**	**3.415**	**2.744**	**0.323**

Source: Audited company financial statements 2010-2015

From the findings, related product diversification, unrelated product diversification, debt to equity ratio, geographic market diversification and firm size were normally distributed. This is because they had p-values of 0.065, 0.082, 0.311, 0.211 and 0.323, respectively, which were all more than the significance level (0.05).

Multicollinearity Test

Variance Inflation Factor (VIF) mainly quantifies multicollinearity severity in regression analysis. A VIF of more than 10 is considered severe and necessitates further investigations. The results were as shown in table 3.

Table 3: Variance Inflation Factor

Variable	**VIF**	**1/VIF**
URPDS	16.7	0.05988
RPDS	16.44	0.06082
GDS	11.02	0.09074
Mean VIF	**14.72**	

Source: Audited company financial statements 2010-2015

According to the findings, the VIFs for the variables, unrelated product diversification (16.7), related product diversification (16.44) and geographic market diversification (11.02) were more than 10. This implies that there was no significant multicollinearity between the independent variables.

Heteroscedasticity Test

The study used Breusch-Pagan/Cook-Weisberg test for heteroscedasticity. Homoscedasticity shows a situation where the error term is the same across all values of the independent variables. Heteroscedasticity, which can be described as a violation of homoscedasticity, is considered present when the error term size differs across values of an independent variable.

Table 4: Breusch-Pagan/Cook-Weisberg test for heteroscedasticity

H0:	**Constant Variance**
Variables	Fitted values of DE
Chi2(1)=	45.09
Prob > Chi2> =	0.000

Source: Audited company financial statements 2010-2015

As indicated in table 4, the p- value (0.000) was less than the significance level (0.05), which implies that we can reject the null hypothesis of homoscedasticity. DE represents the dependent variable (Debt to Equity ratio).

Autocorrelation Test

The Breusch and pagan Lagrangian multiplier test for random effects helps in deciding on whether to use a random effects regression or a simple OLS regression. The null hypothesis in the LM test indicates that variances across entities are zero, which indicates that there are no significant differences across units (no panel effect).

Table 5: Breusch and pagan Lagrangian multiplier test for Random Effects

DE(Company, t) = xb + u[company] + e [company, t]				
	Var	**Sd=sqrt(Var)**	**Chibar2 (01)**	**Prob > Chibar2**
DE	1.806496	1.344059	67.91	0.000
e	.82593	.9088069		
u	1.030277	1.015026		

Source: Audited company financial statements 2010-2015

Since the p-value (0.000) is less than the significance level (0.05), we can accept the null hypothesis and conclude that random effects are appropriate. This means that there is evidence of significant differences across companies and hence random effects regression should be used.

Hausman Test

The Hausman test, which is also known as Hausman specification test, is used in the detection of endogenous regressors in a regression model. In a regression model, the presence of endogenous regressors may cause OLS estimators to fail. This is because one of the assumptions is that there is no correlation between the error term and predictor variable. The null hypothesis in Hausman specification test is that the

preferred model is random effects while the alternative hypothesis is that the model is fixed effects.

Table 3: Hausman specification test

	Coefficients			
	(b) Fixed	**(B) Random**	**(b-B) Difference**	**Sqrt(diag(V_b-V_B) S.E.**
RPDS	24.80367	24.1643	.6403746	1.44455
URPDS	26.61542	24.59435	2.021069	1.711786
GDS	.9861574	.0663895	.9197768	.5296203

b=consistent under H0 and Ha; obtained from xtreg

B=inconsistent under Ha, efficient under H0; obtained from xtreg

Test: H0: difference in coefficients not systematic

Chi2(3) = (b-B) ' [(V_b-V_B) ^(-1)] (b-B)

= 3.84

Prob>chi2 = 0.2797

Source: Audited company financial statements 2010-2015

From the findings, the p-value for the Hausman specification test was 0.2797, which was less than the significance level (0.05). This implies that we accept the null hypothesis the preferred model is random effects and therefore use random effects model.

Regression Model

Panel data regression analysis technique was used in the study to explore the effect of diversification strategy on the leverage decisions of firms after controlling for firm size. In this study a random effects regression model as shown below was applied.

$$LEV_{it} = \beta 1 INT_{it} + \beta 2 UNREL_{it} + \beta 3 IREL_{it} + \alpha_i + u_{it}$$

Where *LEV* represents capital structure which is the dependent variable varying across cross section and time. The independent variables used were INT_{it}, $UNREL_{it}$, REL_{it} *and* $Size_{it}$ international/geographic market diversification, unrelated product diversification, related product diversification and firm size respectively. Firm size will be used as the control variable in the study.

Table 7: Model Summary

R-squared	Observations	Chi2
Within = 0.0858	Number of obs = 114	Wald Chi2(3) = 8.36
Between = 0.0010	Number of groups = 19	Prob> chi2 = 0.0392
Overall = 0.0256		

Source: Audited company financial statements 2010-2015

R-squared shows the variation in the dependent variable that can be explained by the independent variables. From the findings the overall r-squared was 0.0256. This implies that the independent variables (related product diversification strategies, geographical diversification strategies and unrelated product diversification) explain 2.56% of the dependent variable (capital structure decisions of non-financial firms listed at NSE). The r-squared within companies will be 0.0858. This implies that independent variables explain 8.58% of the dependent variable within the 32 companies. Between companies the r-squared was 0.0010, which implies that independent variables explain 0.1% of the dependent variable between the 32 companies. In addition, the p-value for the F-test was 0.0392, which is less than the significance level (0.05). This means that the model is a good fit for the data.

Table 4: Regression Coefficients

DE	Coef.	Std. Err.	z	p>[z]	[95% conf.	Interval]
RPDS	24.1643	8.385912	2.88	0.004	7.728213	40.60039
URPDS	24.59435	8.574405	2.87	0.004	7.788826	41.39988
GDS	.0663805	.7242395	0.09	0.927	-1.353103	1.485864
_cons	-22.75851	8.453506	-2.69	0.007	-39.32707	-6.189939
Sigma_u	1.0150258					
Sigma_e	0.90880692					
rho	.55504434 (fraction of variance due to u_i)					

Source: Audited company financial statements 2010-2015

Interpretation of the coefficients includes both the within-entity and between-entity effects. In this study, data represents the average effect of X over Y when X changes across time and between companies by one unit. In addition, Two-tail p-values test the

hypothesis that each coefficient is different from 0. To reject this, the p-value has to be lower than 0.05, if this is the case then we can say that the variable has a significant influence on the dependent variable (y).

From the findings, the results show that related product diversification strategies influence capital structure decisions of non-financial firms listed at NSE as shown by a regression coefficient of 24.1643. This implies that a unit increase in related product diversification strategies across time and between companies would lead to a 24.1643 increase in capital structure. The association was significant as the p-value (0.004) was less than the significance level (0.05). These findings agree with Rocca et al., (2009) argument that related product diversification strategies have a signficant effect on the capital structure of firms.

The results also show that unrelated product diversification strategies influence capital structure as shown by a regression coefficient of 24.59435. This implies that a unit increase in unrelated product diversification strategies across time and between companies would lead to a 24.59435 increase in capital structure. The association was significant as the p-value (0.004) was less than the significance level (0.05). These findings agree with Kuppuswamy and Villalonga (2010) findings that that value of unrelated diversification which increased during 2008-2009 crises had a significant influence on internal capital markets.

The study findings show that geographical diversification strategies influence capital structure decisions of non-financial firms listed at NSE as shown by a regression coefficient of 0.0663805. This implies that a unit increase in geographical diversification strategies across time and between companies would lead to a 0.0663805. The association was not significant as the p-value (0.927) was more than the significance level (0.05). This shows that geographical diversification strategies have no significant influence on capital structure decisions of non-financial firms listed at NSE. These findings are contrary to Kim and Mathur (2008) findings that geographical diversification strategies signficantly influence the capital structure of a firm.

Hierarchical Multiple Regression

This is a type of multiple regression where the contribution of different variables on the dependent variables is predetermined in a hierarchical order. The method is used to determine whether a set of variables account for a considerable variance in the dependent variable after controlling for control variables.

Table 5: Control Variable Model Summary

R-squared	Observations	Chi2
Within = 0.0932	Number of obs = 114	Wald Chi2(3) = 12.16
Between = 0.1286	Number of groups = 19	Prob> chi2 = 0.0005
Overall = 0.1129		

Source: Audited company financial statements 2010-2015

The overall r-squared for the association between size and capital structure was 0.1129. This implies that the size explains 11.29% of capital structure decisions of non-financial firms listed at NSE.

Table 6: Coefficients for Size and Capital Structure

DE	Coef.	Std. Err.	z	p>[z]	[95% conf.	Interval]
Size	.2911192	.0834928	3.49	0.000	.1274764	.4547619
_cons	-5.200576	1.928624	-2.70	0.007	-8.98061	-1.420543
Sigma_u	.94314345					
Sigma_e	.90109283					
rho	.52278926 (fraction of variance due to u_i)					

Source: Audited company financial statements 2010-2015

The results show that size had an influence on capital structure decisions of non-financial firms listed at NSE as indicated by a coefficient of 0.2911192. This implies that size across time and between companies has a significant influence on capital structure decisions of non-financial firms listed at NSE. The association was significant because the p-value (0.000) was less than the significance level (0.05). These findings are in line with Singh and Nejadmalayeri (2004) findings that the size of a firm influences its capital structure.

Table 7: Model Summary for all the Variables

R-squared	Observations	Chi2

Within = 0.1718	Number of obs = 114	Wald Chi2(3) = 20.29
Between = 0.0871	Number of groups = 19	Prob> chi2 = 0.0004
Overall = 0.1162		

Source: Audited company financial statements 2010-2015

The results show that the r-squared for the association between the independent variables, control variable and the dependent variable was 0.1162. This implies that independent variables (related product diversification strategies, geographical diversification strategies and unrelated product diversification) and the control variable (size) can explain 11.62% of the capital structure decisions of non-financial firms listed at NSE.

The results show that related product diversification has a significant influence on capital structure decisions of non-financial firms listed at NSE as shown by a coefficient of 21.51125 (p-value=0.007). These findings concur with Bamford and West (2010) findings that related product diversification strategies significantly influence the capital structure of a firm.

Table 8: Coefficients for all the variables

DE	Coef.	Std. Err.	z	p>[z]	[95% conf.	Interval]
RPDS	21.51125	8.043824	2.67	0.007	5.745643	37.27685
URPDS	22.68872	8.204877	2.77	0.006	6.607461	38.76999
GDS	.1778104	.6965395	0.26	0.799	-1.187382	1.543003
Size	.279706	.0840145	3.33	0.001	.1150406	.4443713
_cons	-26.6652	8.14984	-3.27	0.001	-42.6386	-10.69181
Sigma_u	.99978589					
Sigma_e	.87252782					
rho	.5676558 (fraction of variance due to u_i)					

Source: Audited company financial statements 2010-2015

The results also show that unrelated product diversification strategies has a significant influence on capital structure decisions of non-financial firms listed at NSE as indicated by a coefficient of 22.68872 (p-value=0.006). These findings agree with Kuppuswamy and Villalonga (2010) argument that unrelated product diversification strategies has a significant influence on capital structure decisions.

However, geographical diversification strategies had no significant influence on capital structure decisions of non-financial firms listed at NSE as shown by a

coefficient of 0.1778104 (p-value=0.799). These findings are contrary to Singh and Nejadmalayeri (2004) findings that geographical diversification is positively related to greater aggregate and long-term debt ratios. In addition, the results show that size has a significant influence on capital structure decisions of non-financial firms listed at NSE as indicated by a coefficient of 0.279706 (p-value=0.001). these findings agree with Franko (2004) findings that firm size in terms of total assets influence the capital structure decisions.

Summary of Findings

Relationship between Related Product Diversification and Capital Structure

Related diversification in a firm involves expansion into new products and markets but within the existing strategic capability. In related product diversification strategy, a company's new business activities are related with existing business activities and the businesses are similar to one another in terms of input and operational requirements. The study found that firms that diversify across product lines are likely to have higher debt ratios than non-diversified firms. In differentiating between the scopes of diversification and observing the difference between related and unrelated diversification, the study found that related-diversified firms have a lower debt ratio than specialized firms, whereas unrelated-diversified firms have higher debt level.

The findings from the regression analysis revealed that related product diversification has a positive and significant influence on debt to equity ratio of non-financial firms listed on the Nairobi Securities Exchange. Firms prefer the use of equity to debt in running their operations. These findings concur with Rocca et al. (2009) argument that related product diversification influences the debt to equity ratio.

Firms should not be considered as a homogeneous group on the basis of some of their attributes like their subsidiary network structure and their level of product diversification. The results suggest that not only does this heterogeneity extend to the financial profiles of the firms but also to the relationship between the capital structure of firms and their determinants. The regression analysis reveals that product diversification is significantly related to the debt ratios for non-financial firms listed on the Nairobi Securities Exchange. These findings are contrary to Knoll (2007) argument that equity financing is the preferred mode of financing in related diversification. This is because the primary motive behind related diversification is creation of synergy, as the related diversified companies could gain both operative or

growth synergy advantages and these could be obtainable through capability up gradation, scale effects, or entry into new market segments.

Relationship between Geographical Diversification and Capital Structure

Geographical diversification involves moving to new markets outside home market and may include movements to regional or geographical countries. According to Kim and Mathur (2008), geographical diversification boosts the worth of shareholders by taking advantage of specific assets, by accelerating functioning flexibility and by satiating investors' preferences for holding worldwide diversified positions. Global diversification adds value to companies because of extensive information-based resources related to research and development as well as advertising. A globally diversified firm, can shift production from one country to another country with lower cost of production as well as shift production to a country whose demand is higher.

The study found out that geographical diversification strategy had no significant influence on a firm's capital-structure decisions. These findings are contrary to Kim and Mathur (2008) findings that firms diversified in related segments promote the use of equity to finance the growth of the companies. However, the findings agree with Yaffe (2008) argument that there is no significant relationship between geographical diversification and capital structure. Eiteman et al. (1998) observe that MNCs and their subsidiaries use less debt as compared to their domestic counterparts but gradually the leverage of MNCs increases with the increase of their foreign involvement.

Relationship between Unrelated Product Diversification and Capital Structure Decisions

Unrelated diversification is the expansion of a company beyond its current strategic capability, where its new businesses or subsidiaries have little or no relatedness with old businesses. Reduction of overall company risk and increase in profitability are the main motives behind this strategy. As compared to related ones, unrelated diversifiers have a better position to create financial synergies by transferring capital across different businesses and through operating various businesses with different risk profiles.

The study established that unrelated diversification had a significant effect on a firm's current debt to equity ratio. This finding implied that there is a target debt-to-equity

ratio for the firms. From the results above, unrelated diversification is positively related to capital structure. These firms usually have more debt to equity ratio. The non-financial firms listed on the Nairobi Securities Exchange tend to move toward an optimal debt level such that a trade-off approach well-explains their capital-structure decisions. In particular, the capital-structure decisions of unrelated diversified firms seem to be strictly aimed at reaching their target optimal debt levels, a behavior that is consistent with the trade-off hypothesis. This finding is in agreement with that of Low & Chen (2004) that the relationship between unrelated diversification and capital structure is determined by the type of firms, with multi-national companies having a positive relationship between unrelated diversification and capital structure.

Conclusions

The study concludes that related product diversification strategies influence capital structure decisions of non-financial firms listed at NSE. Related diversification helps a company to expand to new products and markets but within the existing strategic capability. The study results show that debt is the most preferred form of financing in related product diversification strategies.

The study also concludes that unrelated product diversification strategies influence capital structure decisions of non-financial firms listed at NSE. The main motive behind this strategy is reduction of overall company risk and increase in profitability. Unrelated diversifiers have a better position to create financial synergies by transferring capital across different businesses and through operating various businesses with different risk profiles. The findings of this study show that debt if the most preferred form of financing in unrelated product diversification strategies.

The study further concludes that geographical diversification strategies influence capital structure decisions of non-financial firms listed at NSE. Geographical diversification boosts the worth of shareholders by taking advantage of specific assets and by accelerating functioning flexibility. However, the sophistication of geographical diversified organizations can result in higher costs of coordinating business guidelines due to information unevenness between companies' headquarters and divisional managers. Therefore, debt and equity are not the preferred forms of financing in geographic diversification strategy.

Recommendations

The study recommends that the listed non-financial firms listed at NSE are completely different in terms of their operations and their decisions for their respective capital structure decision between equity and debt financing. As such one cannot make a generalized conclusion on the operations and the capital structure decisions for all the listed non-financial firms. This observation informs policy in that non-financial firms are independent at firm level and any analysis calls for individual firm analysis to avoid biased results.

The study found that the use of related diversification leads to an increased market power. This study recommends that firms can increase their market power through increasing their new products and markets, which can be financed though debt financing.

The study also found that unrelated diversifiers have a better position to create financial synergies by transferring capital across different businesses and through operating various businesses with different risk profiles. To finance unrelated diversification, firms can use debt financing. However, they need to pay attention to environmental conditions, which can negatively affect performance.

The study recommends that the management of firms should strive towards having optimum capital structure by increasing their equity level and reducing dependence on debts so as to avoid being cash strapped and debt ridden. This is because, beside equity holders providing funding, they could be helpful by bringing in their business experiences, skills, and contacts to grow the s. Investors are often prepared to provide follow-up funding as the business grows and they take a long-term view as most do not expect return on their investment immediately.

The study established that there was geographical diversification had no significant influence on capital structure decisions. This study recommends that firms focus on geographic diversification as it has advantages such as lower cost of production, but it should not be financed through debt or equity.

Suggestions for further Study

This study was limited to non-financial firms listed at NSE. The study therefore recomnends further studies on the relationship between corporate diversification and capital structure decisions of financial firms listed in the NSE. The study also found that corporate diversification explains only 2.56% of the capital structure decisions of

financial firms listed in the NSE. The study therefore suggests further studies on the other factors affecting capital structure decisions of financial firms listed in the NSE.

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