Mediating Effects of Cash Management in Relationship between Capital Structure and Liquidity in Small and Medium Enterprises

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ABSTRACT

This study attempts to establish the relationship that exists between capital structure, cash management and liquidity in some selected small and medium enterprises in Jimeta, Adamawa State, Nigeria. It also investigates the mediating effect of cash management in the association of capital structure and liquidity. A total of 365 copies of questionnaire were administered to 366 small and medium scale enterprise but a total 310 copies of questionnaire were returned fully and appropriately filled. The study made use of both primary and secondary method in collecting data. A cluster sampling method was used in this study and purposive sampling was also used to choose units of analysis in all clusters. Descriptive and inferential statistic such as frequencies mean, and standard deviation including Pearson’s correlation coefficient, multiple regression and sobel test were employed to obtain results. The results indicate that there is a positive significant relationship between capital structure and cash management, capital structure and liquidity, liquidity and cash management at a correlation of 0.657, 0.657 and 0.640 respectively, significant at 0.01 level (2-tailed) and df = 309. To support the correlation analysis, the regression analysis was also used to see the variability in the relationship and it indicates that 43.1% and 43% of the variability in both cash management and liquidity can be explained by the capital structure of the firm and also 41% of the variability in liquidity can be explained by cash management. The sobel test and the Kenny and Baron approach were used to test the mediating effect of cash management in the relationship between capital structure and liquidity and it indicate a partial mediation between the variables. A single research methodology approach was used and the findings from this research are cross sectional, future research through other methods could be undertaken to triangulate and also should be taken across time. The study recommends that chief financial officers exercise caution while choosing the amount of debt to use in their capital structure since a positive relationship exist between capital structure, liquidity and cash management.

Keywords: Cash Management, Capital Structure, Liquidity, Mediation
JEL Classifications: G3, J52

1. INTRODUCTION

Liquidity has major impact in capital structure decision making when financial institutions want to provide finance in a particular business, they need to analyses the liquidity of that business in which they are investing or given out loans. Cash management is also an important aspect that needs to be considered by all small and medium scale enterprises. There is extra money to earn by managing the liquidity of the company in the right way. Most of the companies do not have any employee that is managing the liquidity of the companies (Babi, 2012). With cash management, companies will get rid of unnecessary restricted capital and by being efficient a great deal of money will be earn and invested them properly. There is a big opportunity to see if the company’s liquidity will be more efficiently managed through cash management thinking. Moreover, most of the studies in these aspects are either on capital structure and liquidity (Sibilkov, 2007; Ofumbia and Uchenna, 2012), capital structure and cash management (Grinblatt and Titman 2004) or liquidity and cash management (Collins and Jarvis, 2000; Gitau, 2012).

Against the aforementioned background, this study was aimed at empirically testing the relationship between capital structure and liquidity; capital structure and cash management; liquidity and cash management.
cash management and liquidity, albeit within the context of small and medium enterprises in Nigeria. In addition, the study was also aimed at investigating whether capital structure has significant influence in relationship between cash management and liquidity. These are hypothesized in Figure 1.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Cash Management and Capital Structure
Motazed (2012) indicated that there is a significant relationship between capital structure and cash management and also revealed an inverse relationship between the size of debt and managed cash flow. He further revealed a direct relationship between increase capital due to equity with managed cash flows by using a regression analysis. Hurdon (2001) found that, since cash management involve proper management of cash flows, proper cash amount are kept for transactional motive. The firm buys factors of production on cheaper prices when opportunity comes. He therefore established a positive relationship between management of cash and a method of business finances. He used a multiple regression model. The findings is inconsistent with the result of Hwee (2012) which revealed a negative relationship between capital structure and cash management but consistent with the findings of Motazed (2012) which indicated a positive relationship between the capital structure and cash management.

P1: There is significant relationship between cash management and capital structure in small and medium enterprises

2.2. Capital Structure and Liquidity
Sibilkov (2009) examined the relationship between asset liquidity and capital formation. He concluded in his research with the help of multiple regression model that liquidity of assets has been positive relation with leverage. The study indicated that lower assets liquidity reduces the cost of debt and for that reason companies use more debt. He also concluded that his research showed some relations about secured and unsecured debt. He gave details that the relation between secured debt and asset liquidity is safe and positive while the unsecured debt is negatively correlated with firm’s liquidity.

Sarlija and Harc (2012) conducted a research on whether capital accumulation has been affected by liquidity. He argued in some countries, the liquid firms financed by their own capital rather than outsiders and they were less leveraged. He demonstrated that increasing the level of inventory leads to an increase in debt of the company and increasing level of cash in current assets leads to decrease in debt long term as well as short term. He examined in his research with the help of Pearson correlation coefficient that there is negative relationship between liquidity and capital structure. He also concluded that the share of retained earnings as well as equity to capital is not correlated with equity. These result is inconsistent with other empirical studies such as Sibilkov (2009) and Hadlock and James (2002), which revealed a positive relationship between Liquidity and Capital Structure. Other studies revealed a negative relationship such as Berger and Bonaccorsi di Patte (2006) and Simerly and Li (2000) respectively.

P2: There is significant relationship capital structure and liquidity in small and medium enterprises

2.3. Cash Management and Liquidity
Mathuva (2009) studied the impact of cash management and its implication on liquidity and took almost 30 listed firms as a sample and all these companies were listed in Nairobi stock exchange and the data was taken from 1993 to 2008. There were certain findings of his research by analyzing the fixed effects regression models. Firstly, there is a negative relationship between the time when the cash is collected from the customers and the firm’s productivity. This depicts, firms that are more profitable enjoys less time period for the collection of cash from the customers as compare to ones which are less profitable. Secondly, there is a positive relationship between the inventories when they were brought in and the period to which they are sold and the firm’s profitability. The interpretation comes out as that the firms or the organizations which take more time to keep the inventories it reduces the costs of the disruption in the process of production and usually the business losses as there is the insufficiency in the goods. This situation decreases the operating cost of the firm. The third assumption of the research was the association between the average payment period and profitability and found out to be positive. The more the time taken to disburse to the creditors, the profitability will increase. Most empirical studies a from non-financial firms (Shin and Soenen, 1998, Wang, 2002; Deloof, 2003) corroborate that of Mathuva (2009) and Sharma and Kumar (2011) who argue in favor of a negative relationship between Cash management, Liquidity and firm profitability.

P1: There is significant relationship between cash management and Liquidity in small and medium enterprises

3. METHODOLOGY

A sample of 365 from the registered Small and Medium enterprises within Jimeta was drawn at random. The sampling frame for this study is determine from the population of registered small and medium scale enterprises in Jimeta metropolis. A total of 310 questionnaires were returned fully and appropriately filled. These represent a response rate of 86.1%. The sample is deduced from the four industries consisting of genetic industry, service industry, trading industry and manufacturing industry with Jimeta...
metropolis. A cluster sampling method was used in this study. In accordance with this sampling technique, the small and medium business was divided into industries which include Genetic industry, services industry, manufacturing industry and trading industry. Maville and Goddard (1996) define cluster sampling as “a sampling that subdivides the population in to subgroup called clusters.” Purposive sampling was used to choose unit of analysis in all clusters. A units were used in the administration of questionnaire from all the number of small and medium business in all the clusters. The study concentrated on issues related to capital structure, cash management and liquidity which can only be answered by chief financial officer (CFO’S) of the selected small and medium enterprises. The study made use of questionnaire as the research instrument. The majority of questions used were adapted from a study on capital structure and liquidity by Lee (1987), with modifications to suit the research context. The research instrument was validated using expert opinion validity. This entails seeking the opinion of expert on finance and entrepreneurship. The test-retest method was used to check the reliability of the scale in this study.

4. RESULTS

Specifically, Pearson’s correlation and regression analysis are used to determine causal relationship and the variability of the variables. And RQ4: Hierarchical multiple regression Sobel test analysis was used to determine the type of mediation that is whether it is full or partial mediation.

4.1. Relationship between Capital Structure and Cash Management

The correlation co-efficient measured the degree to which two things vary together (Adeniji, 2011). This hypothesis correlated two variables: Capital structure and cash management. The findings on Table 1 shows a significant positive relationship between capital structure and cash management and the Pearson correlation using 2-tailed at $r = 0.657$, 0.01 significant level and 309 degree of freedom. Therefore, we reject the null hypothesis which states that there is no significant relationship between capital structure and management and accept the alternate hypothesis which states that there is a significant relationship between capital structure and cash management.

4.2. Relationship between Capital Structure and Liquidity

Table 1 further correlate the relationship between capital structure and liquidity and the findings indicate a significant positive relationship between the variable that is capital structure and liquidity. The Pearson correlation using 2-tailed at $r = 0.656$, 0.01 significant level at 309 degree of freedom. Therefore, we accept the alternate hypothesis which states that there is a significant relationship between capital structure and liquidity and reject the null hypothesis which states that there is no significant relationship between capital structure and liquidity.

4.3. Relationship between Cash Management and Liquidity

The results for the relationship between cash management and liquidity as shown also in Table 1 provide evidence that a positive relationship exist between the two variables, therefore we accept the alternate hypothesis which state that there is a significant relationship between cash management and liquidity and reject the null hypothesis which state that there is no significant relation between cash management and liquidity based on the Pearson correlation using 2-tailed indicates that $r = 0.640$ at 0.01 significant level of 309 degree of freedom.

4.4. Relationship between Capital Structure and Cash Management

However, after using correlation to create causal relationships between the variables, thus the study regressed the influenced of cash management on capital structure for effect size. The F statistics which states the overall significant of the model has the value of 233.339 with (309) degrees of freedom. The significant of F is 0.000 and as such the null hypothesis can be rejected at 1% level. That is cash management is influenced by capital structure. The corresponding t statistics for capital structure is 15.275 which have a significant level of. 000. Thus, the finding supported the fact that capital structure contribute to effective cash management. The R² for the regression is 0.431 and the R² adjusted is 0.429. The standard error of the estimate is 0.56433. In this study, 43.1% of the variability in cash management can be explained by capital structure while the remaining 56.9% is due to other unexplained factors. Thus we reject the null hypothesis and accept the alternate hypothesis.

4.5. Relationship between Capital Structure and Liquidity

The study revealed that F-statistics which states the overall significant of the model has the value of 232.440 and degrees of freedom stood at 309. And the significant of F is 0.000 as such the alternate hypothesis is accepted at 1% significant level. That is liquidity can be influence by the capital structure of a firm. The corresponding t statistics for capital structure is 15.246 and has a significant level of 0.000. Thus the finding supported the fact that a capital structure of the firm influences the liquidity of that firm.

The R² for the regression is 0.430 and the R² adjusted is 0.423. The standard error of the estimate is 0.61381. By this 43.00% of the

Table 1: Correlations between capital structure, cash management and liquidity

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<tr>
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<th>Capital structure</th>
<th>Cash management</th>
<th>Liquidity</th>
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<tbody>
<tr>
<td>Capital structure</td>
<td>0.657**</td>
<td>0.656**</td>
<td>0.000</td>
</tr>
<tr>
<td>Significant (two-tailed)</td>
<td>310</td>
<td>310</td>
<td>310</td>
</tr>
<tr>
<td>N</td>
<td>310</td>
<td>310</td>
<td>310</td>
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</tbody>
</table>

Correlations are significant at: **P<0.001, *P<0.05 level (two-tailed)
variability in liquidity can be explaining by capital structure. The remaining 57.0% is due to other unexplained variables. Thus, we accept the alternate hypothesis and reject the null hypothesis. Implying that the respondents agreed that liquidity is influenced by capital structure.

4.6. Relationship between Cash Management and Liquidity
The regression of the influence of liquidity on cash management showed that, F-statistics has 214.112 value with (309) degree of freedom. The significant of F is 0.000 and as such the alternate hypothesis is accepted at 1% level. That is liquidity is influence by cash management. The corresponding F-statistics for liquidity is 14.633 with a significant level 0.000 thus the finding supported the fact that cash management influenced the level of liquidity in a given enterprises. The R² for the regression is 0.410 and the R² adjusted is 0.408 with 0.57462 standard error of the estimate. Therefore the study indicates that 41% of the variability in liquidity can be explained by cash management while the remaining 51% is due to other unexplained variables thus we reject the null hypotheses and accept the alternate hypothesis as demonstrated in Table 2.

Similarly, mediation test were carried out to establish whether the conditions proposed by Baron and Kenny (1986) are met. A modified version of Sobel Test used to calculate the Sobel Z-value and the significant of the mediation effect of cash management in the relationship between capital structure and liquidity. Table 3 indicates that the four conditions for mediation according to Baron and Kenny (1986) are met. First there is an effect to be mediated (B = 0). Second, there is a significant relationship between capital structure and mediator (B = 0.664, P < 0.01) and third the coefficient of the mediator (cash management) is significant in regression three (B = 0.721, P < 0.01) with both capital structure and cash management as predictors. Finally, the absolute effect of capital structure on liquidity is less in regression (standardize beta = 0.640) than in regression two (standardized beta = 0.657).

5. DISCUSSION

5.1. Relationship between Capital Structure and Cash Management
The first objective of this research work is to determine the effects of capital structure on cash management in the selected SME’s. The relationships among variable can be described in terms of whether they change together or separately. If the change in one variable will be in concomitance with the change in another, that change refers to as positive correlation but when they move in opposite direction the change is negative.

Therefore, the first hypothesis correlated capital structure and cash management and found a significant positive relationship between these two variables. In the same vein regression analysis was also carried out to determine the extent to which capital structure influences cash management. The study showed that about 43.1% of the variability in cash management can be explained by capital structure. These supported the results from other studies. Motazed (2012) Studies the relationship between capital structure and cash management using a regression analysis. He found a significant positive relationship by the two variables. Hurdon (2001) found that, since cash management involve proper management of cash. He established a positive relationship between management of cash and a method of finances using a multiple regression model.

On the other hand, Manesh wt al. (2013) examine the relationship between structure of financial resource and management of cash flow from the Tehram Stock Exchange using a regression analyses found a positive significant relationship between management of cash flow and structure of financial resource. Nevertheless, Shen (2012) examines the role of financial flexibility in capital structure decisions. Financial flexibility is measured internally as cash and debt capacity. He supported the notion that financial flexibility is the most important consideration in financing decision debt capacity and external equity flexibility are shown to be the most important determinants of leverage.

5.2. Relationship between Capital Structure and Liquidity
The second hypothesis correlated two variables: Capital structure and liquidity. The findings of the correlations indicated a positive significant relationship between capital structure and liquidity. The Pearson correlation stood at 0.656. To further support the findings regression analysis was also conducted to determine the extent of variability of the relationship between capital structure and liquidity. The study showed that about 43% of the variability in liquidity can be explained by capital structure. These support the result from other studies. Sibilkov (2009) examine the relationship between asset liquidity and capital formation, using multiple regressions found that liquidity of asset has a positive relation with leverage and that lower asset liquidity reduces the cost of debt and form the reason companies used more debt.

Similar studies conducted a research to determine whether capital formation has been affected by liquidity (Sarlija and Harc, 2012). They argued that liquid firms financed by their own capital rather than outsiders and they were less leveraged. This result is also consistent with other empirical studies of Hadluck and James (2002), which revealed a positive relationship between capital structure and liquidity. Yaser (2012) examine the impact of liquidity on capital structure of textile sector of Pakistan. The result of this studies demonstrated that liquidity has least impact of capital structure. Also found out that liquidity must be taken into account when the companies want to get the additional capital.

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardized estimate</th>
<th>T-value</th>
<th>Significant</th>
</tr>
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<tbody>
<tr>
<td>Capital structure→cash management (R 0.431)</td>
<td>0.664</td>
<td>15.275</td>
<td>0.000</td>
</tr>
<tr>
<td>Cash management→liquidity (R 0.410)</td>
<td>0.589</td>
<td>14.633</td>
<td>0.000</td>
</tr>
<tr>
<td>Capital structure→liquidity (R 1.044)</td>
<td>0.721</td>
<td>15.246</td>
<td>0.000</td>
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</table>
from outsiders. Moreover, he was on the view that the easiest way to increase the capital is to issue the long term bond with interest.

Shivdasani and Stefanscu (2010) analyze the implication of capital structure on defined benefit corporate pension plan. Using a regression modal, he found that organization settle their leverage ratio to judge the firm pension asset. He also found that discouraging pension policies in capital structure test have the risk and it is most important and it is related to business failure. Lipson and Mortal (2012) examined the relationship between capital structure and liquidity of a sample of idea “n” firms. Contrary to the existing literature, he found no empirical evidence between firm liquidity and capital structure and this is due to the fact that distinction features of emerging markets, namely less sophisticated capital markets, higher information asymmetry concentrated ownership and constrained access to debt.

Fayez (2012) examine the relationship between stock liquidity and capital structure, using a sample of 38 industrial companies listed on Amman stock exchange (ASE) over a period of 2000-2009. The univariate and panel regression analysis was used. The result show insignificant relationship between the three measure of liquidity and book leverage and market leverage. These results are inconsistency with Lipson and Mortal (2012) and Frider and Mortall (2006) using U.S Firms.

### 5.3. Relationship between Cash Management and Liquidity

Pearson’s b-variant correlation coefficient and regression analysis was used to test the relationship between cash management and liquidity and also the variability of the relationship. The findings indicated a positive and significant relationship between the two variables (r = 0.640, P < 0.01) supporting hypothesis 3. The study showed that about 41% of the variability of liquidity can be explained by cash management. These supported the findings of other studies as that of Mathuva (2009) who studied the impact of cash management and its implication on liquidity and took 30 listed firms as a Sample. These companies were listed in Nairobi stock exchange and the data was taken from 1993 to 2008. He found a positive relationship between cash management of the firm and its liquidity. Also studies by Shin and Soenen (1998), Wang (2002) and Deloof (2003) both corroborated these study’s findings.

### 5.4. Mediating Effect of Cash Management in the Relationship between Capital Structure and Liquidity

The study investigated and tested the mediating effect of cash management in the relationship between capital structure and liquidity. The findings indicate that mediating effect of cash management on association between capital structure and liquidity satisfied the conditions of mediation as pointed out by Barron and Kenny (1986). This is true because proper cash management keeps the company liquid and also with cash management companies will get rid of unnecessary restricted capital (Babi 2012). This finding supported the studies conducted by Motazed (2012) which postulated that the presence of proper cash management will determine the method of business finances and the findings of Mathuva (2009) who studied the impact of cash management and liquidity and found a significant positive relationship between the variable. Furthermore, mediating effects of cash management in the relationship between capital structure and liquidity is further confirmed by significant Sobel Z value of 6.3101 (P < 0.05).

### 6. CONCLUSION AND POLICY IMPLICATIONS

The aim of this research was to establish whether or not a relationship exists between capital structure and cash management, capital structure and liquidity and cash management and liquidity. And to see whether there is mediating effect of cash management in the relationship between capital structure and liquidity. The evidence from this study showed that there is a significant positive relationship between capital structure and cash management, capital structure and liquidity, cash management and liquidity. Finally, the researcher confirmed the mediating effect of cash management between capital structure and liquidity using sobel test. The study recommends that managers’ should be careful while using the method of finance since a positive and significant relationship exist between capital structure and liquidity since financial institutions use firm liquidity position to determine whether or not to issue out loan to a particular business.

Since according to the results of investigation it was specified that there is positive significant relationship between capital structure and cash management, it is concluded that the types of capital structure is effective on cash management policies in order to have a better image of current and future cash amounts. Therefore, it is recommended that CFO’s should manage to in rest with more knowledge and clear information about financial situation of companies and they should also obtained result as a basic in identifying the investment portfolio or supplying any credit. The management of SME’s should maintain its current asset for meeting its short term obligation. They should increase their liquidity by shortening debtor’s collection period for a better liquidity position since there is positive relationship between cash management and firm liquidity.

The result comes out with a series of issues that need to be addressed by both management and researcher. In order to have a meaningful interpretation of the results between the relationships of the study variables, it is always important to determine the role of the third variable in the relationship. Rosenberg (1968) argues that variable ends up with facts but incomplete understanding. A study that does not consider the possibility of a mediator effect in the data may miss more explanation for an outcome (Nixon, 2015).
A research that addresses mediation effects will thus offer a more accurate estimation of the relationship between the variables studied in this regard. The impact of cash management in the relationship between capital structure and liquidity should always be addressed by researchers if good decisions and conclusions are to be made. Thus, the study provides valuable compact of ideas, facts, and figures that can be used by academics, management practitioners, and consultant in understanding the mediating effect of cash management in the relationship between capital structure and liquidity.

REFERENCES


