

CAPITAL STRUCTURE, LIQUIDITY AND FINANCIAL PERFORMANCE OF THE FIRMS IN CEMENT AND SUGAR INDUSTRIES OF PAKISTAN

Alam Rehman, Assistant Professor, NUML, Islamabad

amrehman@numl.edu.pk

Zunaira Raza, MS scholar NUML

zoonithekoolest@gmail.com

Haseeb Ur Rehman, Faculty Member IMS, BUST

Haseebbaboo@yahoo.com

Shams Ur Rehman, Assistant Professor, NUML, Islamabad

Shams.mahsud@gmail.com

Mohammad Farooq, Lecturer, Government College of Commerce Mohmand Agency

farooqkhanmuhmand@gmail.com

Abstract. *This research examines the impact of firm capital structure and liquidity on the financial performance of sugar and cement sector firms in Pakistan. The study used the secondary data of 30 firms randomly selected for the period 2005 to 2017. The data was analyzed through statistical tools like correlation and regression. The results revealed that the capital structure proxies have a negative correlation with financial performance proxies of these sector firms. The results indicated that debts to equity ratio and the fund capital ratio has a negative insignificant impact however the debts ratio and Funded debts ratio were found having a negative significant impact on the financial proxies of these selected firms. The results indicated a positive correlation of the liquidity with the financial performance of these firms. The results demonstrating positive effect of current and quick ratios on the financial performance proxies of these firms. The study has some meaningful insights for the financial managers and decision makers of these firms.*

Keywords: Capital structure, liquidity, correlation, regression, Pakistan

Background of The Study

Liquidity plays a very important role to carry on the business of any firm. Liquidity predicts the firm ability to meet its short-term debts when due and tells about the firms' cash resources and near cash resources. Liquidity is a measure which represents the ability of a firm having the cash to meet immediate and short-term obligation, or portfolio assets that can be easily converted. Its high

level of trading activity, buying and selling with minimum price disturbance context of a corporation, the ability of the corporation to meet its short-term obligations. Capital structure simply reflects the efficiency of a firm in term of its assets in use, financed through different options. There are various approaches used to finance the fund i.e. the debts to equity arrangement and the issue of shares. Capital structure is very vital in the smooth running of the business and it predicts the and underlines the debts being employed by the firm in relation to its capital. The higher amount of debts means higher risk. The return on investment clearly predicts the efficiency of management and this create the earnings for the firm. The capital employed in business is always expected to generate enough return for the business. Such arrangement determines the best use of resources which predicts the growth of the firm. For any type of business, it is very important for a business development to have a well develop capital structure. The firm should have such a choice of capital structure which would really enhance the firm performance in term of productivity and efficiency in order to achieve the firm's objectives. Capital structure and liquidity in association with financial performance have been separately investigated and the combined impact has been rarely touched in the context of Pakistan. Rehman (2011) investigated the impact of capital structure on the profitability of listed firms in the Karachi stock exchange. The same kind of study was also conducted by Shah and Hijazi (2004). This study has been conducted using the cement sector firm's data for the period of 2005 to 2017, covering the most recent period and very compact size of capital structure variables. The combination of liquidity variables and capital structure variables has been always a major concern for the financial managers in different companies. There is always an issue with these variables how best to combine these elements to improve the firm financial performance. This research is intended to find the gray area about the relationship of variables in cement sector firms.

Objectives of The Study

1. To describe and analyze the liquidity and capital structure practices of sugar and cement sector for the period of 2005-2017
2. To investigate the effects of capital structure and liquidity on the financial performance of sugar and cement sector firms.

Literature Review

Capital structure is the combination of long-term liabilities and firm equity of the firm. Capital structure is the mix of debts and capital of the firm. As for as the perfect capital market is concerned in which the element of transaction costs does not exist, where all participants including individuals and firms could get funds at uniform interest and no taxes are applied, which helps not affecting the investment decision. About such scenario, two findings were found by Modigliani and Miller. The first type of proposition exhibits the firm value being the independent of capital structure. Whereas the second type of proposition focuses on the importance of the cost of equity for a leveraged firm. And the risk associated with, which means that as the value of leverage increases for a firm the, the firm will likely to earn more value? The capital structure also represents the numerous options through which a firm can finance its assets. Zulfiqar and Mustafa (2007) argued that every business and firm uses a variety of different levels of a mixture of equity, debt for the reason to maximize the market value of the firm, as the Capital structure can affect liquidity and profitability of a firm.

After the contribution been made by chudson in 1945, this capital structure phenomenon was tested by Modigliani & Miller (1958). They conducted a study to highlight the importance of capital structure and its impact. Their study is very key and the most important study in the field of capital structure even today. They postulated and evidenced that capital structure is due to the benefits of tax benefits and other benefits. They argued that this has been taken from the market imperfection.

MM fostered the two major propositions.

Propositions I: It tells that firm value is completely independent from the capital structure of the firm.

Propositions II: It tells that the cost of equity capital has a direct association with the firm's capital structure.

These MM propositions are very vital, which predicts about equity cost which is dependent on the rate of return from assets, the cost of firm debt and the firm's debts of equity.

The Miller comprehend as,

“Our propositions regarding the WACC about any firm would remain the same irrespective of the firm different financing sources, which it does choose from the available sources” (Miller, 1988, P.307).

These aforementioned propositions Tested by many researchers. Barges (1962) formally tested these propositions within the time frame of just four years. He found some laws in their propositions like he argued that biases do occur in the situations and the tradition views.

Barges find out some weakness in their research propositions and the methodology they applied. Barges concluded that the independent nature of the firm from its value is wrong (1962 P. 147)

Jensen and Meckling (1976) performed a research on capital structure. They identified the agency problems which exist between Shareholders and manager because of the manger shares in the company is less than 100%. They found the element of agency problem can be a better deal if the firm increases the share of the managers in board or increases the portion of financing debts. Such an arrangement can minimize the agency issue.

Ahmad Farid (1980) analyzed the Malaysian firms and argued that the capital structure has a strong effect on the financial performance of the firm. He argued that firm debts to equity as increases it will negatively affect the firm profitability if it is increased beyond certain limits. He also elaborated that the firm debts ratio has a positive impact whereas he found that firm funded leverage ratio has a negative impact on the firm financial performance proxies.

Lamothe (1982) also viewed the importance of capital structure combination. He argued that a firm D/ E ratio and debts ratio has an insignificant impact on the profitability of the firm. He argued that capital structure can affect the financial performance of the firm. He also argued that an optimal capital structure does exist for any firm. Myers (1984) explored the capital structure, which he termed as the Tradeoff Theory, which tells that every firm holds some specific and targeted debts for the reason of benefiting from debts as this combination makes proper ratio. Myers and Majluf (1984) investigated the area of the capital structure and termed their work as POT theory. This theory suggests that every firm use a through level of decisions whenever they formulate capital structure. Myers and Mujluf argued that the underpricing is due to less information, so they argued that better information helps in the firm expected cash flows both at present and past.

Ross (1977) investigated the impact of capital structure and finds that firm ROE can be negatively affected by the firm debts to equity ratio, if not balanced. He also argued that firm funded leverage ratio is very vital for the financial performance.

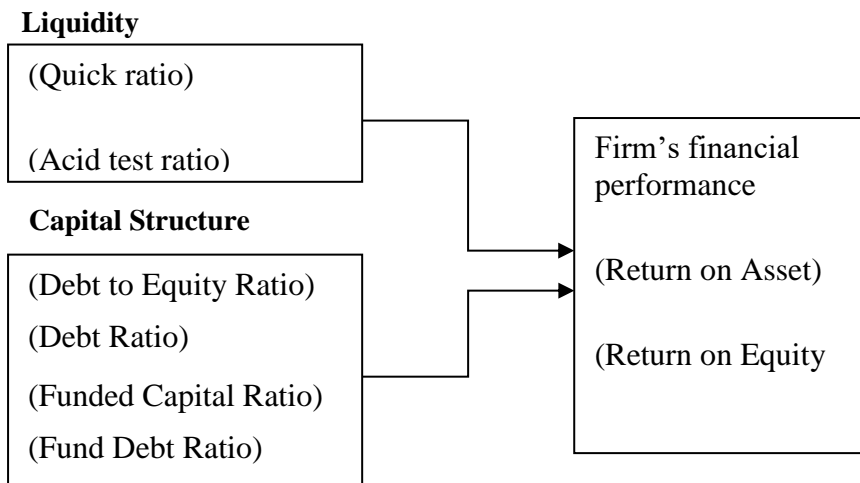
In his particular theory, he explained that the amount of debt is very vital which highlight the trust of the investors in the firm. There is an issue of that more debts as it gives signals to the market. It is presumed that the level of debts gives confidence to the managers and helps the future cash flows. Ilyas (2006) explored numerous determinants of capital structure variables by investigating the non-financial companies of KSE. Its findings show profitability is inversely related to capital structure. Along this debt increase the profitability of a firm. Shah and Hijazi (2004) analyzed the capital structure of KSE non-financial firm using data of five years. He found that capital structure variables i.e. Debt ratio and debt-equity ratio has a negative impact on the firm profitability. He found that capital structure variables financial liquidity ratio has also a negative impact on profitability. Hijazi and Tariq (2006) explored and analyzed the various dimensions of capital structure of the Cement industry of Pakistan. They concluded that high fixed assets ratio leads to high debts ratio. Besides this low profitability is the result of high debts. Capital structure has been widely exploring in the context of Pakistan. Mujahid and Akhtar (2014) analyzed Pakistani firms for knowing the relationship between capital structure and firm performance and predicted that debts to equity and debts ratio both are significantly affecting the financial performance and advised firms to be very selective in combing its capital. In a same kind study investigating the relationship between capital structure and performance, Amara and Aziz (2014) also asserted that debts ratio putting a significant negative effect on the firm performance, therefore firm need to very cautious in this regard. Bokhari and Khan (2013) also analyzed Pakistani firms and argued that capital structure is very vital in affecting the firm performance. Hasan and Din (2012) asserted that debts ratio is very serious for the firm top-level management and they should take care of this ratio. In a similar study Mumtaz, Ahmed and Noreen (2013) also defined the significance of the capital structure ratios as they believe the worse combination can badly affect the firm performance.

There is extensive literature on the relationship between firms' liquidity and financial performance. Numerous studies predicted different results. Alavinasab and Davoudi (2013) asserted that liquidity is very vital for the relationship between the liquidity and profitability. They argued that liquidity can affect the profitability of the firm and found a positive but insignificant association. In a similar study, Anser and Malik (2013) analyzed different firms and found that liquidity is very effective variable which can affect the firm profitability and augmented that quick ratio and cash ratios are the key determinants which influence the firm profitability. Bolek (2013) also predicted very similar results

to that of the previous studies and found that the different dimensions of the liquidity ratio have a positive significant relationship with the property proxies of different firms. Egbide et al. (2013) in their study analyzed the relationship between firm's liquidity and financial performance and argued that positive significant relationship exists between the firm's liquidity measures and financial performance. However, in similar study, Makori and Jagongo (2013) explained that quick ratio is more vital than the current ratio and found that quick ratio can positively enhance the profitability of the firms. Manyo (2013) analyzed firms for the relationship between the liquidity and financial performance and found that liquidity is a kind of variable which directly affect the firm,s profitability and argued that current ratio has a positive significant relationship with the profitability of selected firms. Ajao and Small (2012) also found a similar positive significant relationship between liquidity dimensions and profitability. Very similar results were obtained in different manufacturing sector firms, in line with the previous studies (Ogundipe, Idowu, and Ogundipe,2012; Uremadu et al.,2012). While Azam and Haider (2011) also documented that firm's liquidity is vital to explain the profitability. While some of the studies predicted no effect of the liquidity on the financial performance (Saghir, Hashmi and Hussain, 2011; Vijayakumar, 2011).

Theoretical Framework

On the basis of the literature, the following theoretical framework has been developed.



HYPHOTESIS

- H₀₁:** *Firm quick ratio has a negative impact on the financial performance of cement sector firms.*
- H₁:** *Firm quick ratio has a positive impact on the financial performance of cement sector firms.*
- H₀₂:** *Firm current ratio has a negative impact on cement sector financial performance.*
- H₂:** *Firm current ratio has positive impact on cement sector financial performance.*
- H₀₃:** *Firm DER has a negative impact on cement sector financial performance.*
- H₃:** *Firm DER has a positive impact on cement sector financial performance.*
- H₀₄:** *Firm DR has a negative impact on cement sector financial performance.*
- H₄:** *Firm DR has a positive impact on cement sector financial performance.*
- H₀₅:** *Firm FCR has a negative impact on cement sector financial performance.*
- H₅:** *Firm FCR has a positive impact on cement sector financial performance.*
- H₀₆:** *Firm FDR has a negative impact on cement sector financial performance.*
- H₆:** *Firm FDR has a positive impact on cement sector financial performance.*

Research Methodology

As for as research is concerned it has a lot of kinds and many researchers use a variety of kinds in their researches. Like research may be applied and basic and at the same time, it may be quantitative and qualitative. This is an applied research as this study used the methodology and techniques used by other researchers in their studies.

Population represents the total number in any set up to be taken for the research purposes. Like the population of cement sector firms means all firms registered on the stock exchange. The population of this study is all sugar and cement firms listed on KSE. Total thirty firms have been randomly selected for the data analysis of this study. The thirty firms fulfill the criteria of Roscoe (1975) who stated that ten times observations per variable is enough for any research study and random sampling is valuable in such studies where each firm has equal chance to be selected. Many similar studies have applied random sampling. The data of research in hand was collected from the cement sector firm's annual reports, the website of stock exchange and balance sheet analysis by state bank of Pakistan for the period 2005 to 2017. The data were analyzed by the statistical techniques like correlations and regression to know the relationship between variables and the impact of independent variables on dependent variables.

Operational Definitions and Measurement

Debt to Equity Ratio measures the financial leverage of a firm this ratio is widely used. This ratio reflects the long-term obligation of the firm based on the equity of the firm. It is calculated as Total liabilities / Share Holder Equity.

Debt Ratio tells the combination of the firm total debts in the firm total assets. The debts ratio is the indicator of the firm paying its debts. Total Liabilities / Total Asset

Funded Capital Ratio (FCR = Long-term Debt + Owners' Equity/ Fixed assets

Funded debt Ratio (FDR) = Long-term Debt / ordinary share capital

Current Ratio (CR) is defined as Current Assets/ current liabilities

Quick Ratio was calculated as Current assets –inventory/current liabilities

Return on Equity = Net Income/ total share equity

Return on Asset = Net Income / total assets

Research Models

We applied two multivariate regression models to assess the relationship

Data Analysis

The following tests are used to investigate the relationship

Panel Data Diagnostic Tests

Heteroskedasticity is a problem in penal data and was checked through cook-Weisberg test and the reported value by the test was insignificant at 5% probability level, suggesting that the data has not such a problem and exhibiting equal variance. The panel data has also some time the problem of serial correlation among the independent variables. The Wooldridge test was performed in this regard and the obtained value 0.212 showing insignificance at 5%, meaning that the data has no such problem.

Correlation Analysis

Table1 shows the correlation matrix regarding the all independent and dependent variables which have been used in this particular research study.

The results prove that the firm liquidity having a positive association with firm financial performance as the proxies being used to show liquidity are QR and CR which indicates a positive correlation with the dependent variable of this study the financial performance. However, the proxies of the capital structure showing a negative association with firm financial performance. All the capital structure facets are known as the capital structure proxies showing a negative association.

Table 1 correlation

	ROA	ROE	EPS	NI	D/E	DR	FCR	FDR	QR	CR
ROA	1.000									
ROE	0.35	1.000								
EPS	0.31	0.15	1.000							
NI	0.18	0.16	0.13	1.000						
D/E	-0.13	-0.15	-0.09	-0.12	1.000					
DR	-0.32	-0.27	-0.43	-0.23	0.22	1.000				
FCR	-0.19	-0.13	-0.15	-0.13	0.23	0.24	1.000			
FDR	-0.22	-0.28	-0.29	-0.34	0.22	0.13	0.14	1.000		
QR	0.26	0.32	0.24	0.28	0.08	0.22	0.27	0.23	1.000	
CR	0.32	0.29	0.29	0.32	0.08	0.17	0.36	0.25	0.36	1.000

Regression Analysis

Regression has been applied in this research to find the impact of the independent variables of this study on the dependent variable. Table 2 represents the results of the first model of this research. The results indicating that all capital structure proxies used in the study in hand are having negative association with profitability dimensions of a firm. DR and FDR these two proxies have shown negative but significant impact, however, D/E and FCR showing the negative but insignificant impact on the financial proxy ROA. Further the results showing that both proxies of liquidity have positive but significant effects on the firm return on assets. The results are very much in line with the findings of many previous studies who declared similar behavior of these variables (Hasan and Din, 2012; Ajao and Small ,2012). The R-square of the model is 0.47 which tells that almost 47 % changes are occurred in ROA due to changes in these set of independent variables. The F-value is 22.34 which tells that this overall model is significant.

Table 2 Regression of Model 1

Variables	T. value	Prob. value
D/E	-1.32	0.068
DR	-2.63	0.011
FCR	-1.53	0.054
FDR	-2.33	0.020
QR	2.24	0.021
CR	3.24	0.001

R. square. 0.47, Adjusted R square 0.46, F-value=22.34

Table 3 represents the results of the 2nd model of this research. The results indicating that all capital structure proxies are negatively associated with performance of the firm. DR and FDR these two proxies have shown negative but significant impact, however, D/E and FCR showing the negative but insignificant impact on the financial proxy ROE. Further the results showing that both proxies of liquidity have positive but significant effects on the firm return on equity. The results are very much in line with the findings of many previous studies who declared similar behavior of these variables (Hasan and Din, 2012; Ajao and Small ,2012). The R-square of the model is 0.51 which

tells that almost 51% changes are occurred in ROE due to changes in these set of independent variables. The F-value is 14.56 which tells that this overall model is significant.

Model 2

Table 3 Regression of Model 2

Variable	T. values	P. values
D/E	-1.48	0.067
DR	-2.35	0.023
FCR	-1.61	0.068
FDR	-2.22	0.024
QR	2.73	0.015
CR	2.71	0.013

R. square =0.51, F. values = 14.56

Conclusion

Capital structure and liquidity are the two vital elements of the corporate finance, which effect the financial performance of any firm. The optimal level of these dimensions is very much important for the decision makers and policy makers of different firms. This study was aimed to know the impact of firm capital structure and liquidity on the financial performance of the cement and sugar sector firms. The study used the secondary data of sample cement and sugar sector firms. The data was collected from the annual reports, Pakistan stock exchange site and balance sheet analysis conducted by SBP. The data was collected for the period 2005 to 2017. The data was analyzed through statistical tools like correlation and regression. The results revealed that the capital structure proxies have a negative correlation with financial performance proxies of the cement and sugar sector firms. The results indicated that debts to equity ratio and the funded capital ratio has a negative significant impact however the debts ratio and funded debts ratio were found having a negative significant impact on the financial proxies of cement sector firms. The results indicated a positive association for liquidity with performance of the cement and sugar sector firms. The results found that the liquidity dimensions i.e. quick ratio and current ratio have a positive significant impact on the financial performance of these firms. The research will provide insight to the top management of these firms. Similar studies in future can make cross-comparison of different sectors. The researchers and

academicians are suggested to use SEM in similar studies and can test the moderating effect of disclosure and financial structure.

References

- Ahmad Farid bin Abdul Rahman. (1980). "Relationship between Profitability and Capital Budgeting: The Case of Malaysian Firms in the Manufacturing Sector". Ph.D. (Managerial Economics) Thesis submitted to the Graduate Faculty of Rensselaer Polytechnic Institute, Troy, New York.
- Alavinasab, S. M., & Davoudi, E. (2013). Studying the relationship between working capital management and profitability of listed companies in Tehran stock exchange. *Business Management Dynamics*, 2(7), 01-08.
- Amara, I., & Aziz, B. (2014). Impact of capital structure on firm performance: Analysis of food sector listed on Karachi Stock Exchange. *International Journal of Multidisciplinary Consortium*, 1(1), 1-11.
- Anser, R., & Malik, Q. A. (2013). Cash conversion cycle and firms profitability—a study of listed manufacturing companies of Pakistan. *IOSR Journal of Business and Management*, 8(2), 83-87.
- Awan, T. N., Rashid, M., & Zia-ur-Rehman, M. (2011). Analysis of the determinants of Capital Structure in sugar and allied industry. *International Journal of Business and Social Science*, 2(1).
- Azam, M., & Haider, I. (2011). Impact of Working Capital Management on Firms' Performance: Evidence from Non-Financial Institutions of KSE-30 Index. *Interdisciplinary Journal of Contemporary Research in Business*, 3(5), 481-492.
- Barges, A. (1962). The Effect of Capital Structure on the Cost of Capital. *The Journal of Finance*, 17(3), 548-550.
- Bokhari, H. W., & Khan, M. A. (2013). The impact of capital structure on firm's performance (A case of a non-financial sector of Pakistan). *European Journal of Business and Management*, 5(31), 111-137.
- Bolek, M. (2013). Profitability as a liquidity and risk function basing on the new connect market in Poland. *European Scientific Journal*, ESJ, 9(28).

- Egbide, B. C., Uwuigbe, O., & Uwalomwa, U. (2013). Liquidity Management and Profitability of Manufacturing Companies in Nigeria. *IOSR Journal of Business and Management*, 9(1), 13-21.
- Grossman, S. J., & Miller, M. H. (1988). Liquidity and market structure. *the Journal of Finance*, 43(3), 617-633.
- Hassan, Y., & Kashif-Ud-Din. (2012). The Comprehensive Study of The Capital Structure Of Textile Composite In Pakistan Over The Decade. *Interdisciplinary Journal of Contemporary Research In Business*, 3(9).
- Hijazi, S. T., & Bin Tariq, D. (2006). Determinants of capital structure: A case for Pakistani cement industry.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- Lamothe, Richard S. (1982). "Bankruptcy, Precautionary Liquidity, and the Capital Structure of the Firm". Ph.D. Thesis submitted to the College of Business Administration of Georgia State University.
- Makori, D. M., & Jagongo, A. (2013). Working capital management and firm profitability: Empirical evidence from manufacturing and construction firms listed on Nairobi securities exchange, Kenya. *International Journal of Accounting and Taxation*, 1(1), 1-14.
- Manyo, T. S., & Ogakwu, V. N. (2013). Impact of liquidity on return on assets of firms: Evidence from Nigeria. *International Journal of Management & Information Technology*, 6(3), 885-894.
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, 48(3), 261-297.
- Mumtaz, R., Rauf, S. A., Ahmed, B., & Noreen, U. (2013). Capital structure and financial performance: Evidence from Pakistan (KSE100 Index). *Journal of Basic and Applied Scientific Research*, 3(4), 113-119.
- Mujahid, M., & Akhtar, K. (2014). Impact of capital structure on firms financial performance and shareholders wealth: Textile Sector of Pakistan. *International Journal of Learning and Development*, 4(2), 27-33.

- Myers, S. C. (1984). The capital structure puzzle. *The journal of finance*, 39(3), 574-592.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, 13(2), 187-221.
- Ogundipe, S. E., Idowu, A., & Ogundipe, L. O. (2012). Working capital management, firms' performance and market valuation in Nigeria. *World Academy of Science, Engineering, and Technology*, 61(1), 1196-1200.
- Owolabi, S. A., & Obida, S. S. (2012). Liquidity management and corporate profitability: A Case study of selected manufacturing companies listed on the Nigerian stock exchange. *Business Management Dynamics*, 2(2), 10-25.
- Raheman, A., & Zulfikar, B. Mustafa. (2007). "Capital Structure and Profitability: A Case of Islamabad Stock Exchange". *International Review of Business Research Papers*, 3(5), 347-61.
- Ross, S. A. (1977). The determination of financial structure: the incentive-signaling approach. *The bell journal of economics*, 23-40.
- Saghir, A., Hashmi, F. M., & Hussain, M. N. (2011). Working Capital Management and Profitability: Evidence from Pakistani Firms. *Interdisciplinary Journal of Contemporary Research in Business*, 3(8), 1092-1105.
- Shah, A., Hijazi, T., & Javed, A. Y. (2004). The Determinants of Capital Structure of Stock Exchange-listed Non-financial Firms in Pakistan [with Comments]. *The Pakistan Development Review*, 605-618.
- Rehman, W. U., Ilyas, M., & Rehman, H. U. (2013). Intellectual capital performance and its impact on the financial returns of companies: An empirical study from insurance sector of Pakistan. *African Journal of Business Management*, 5(20), 8041-8049.
- Uremadu, S. O. (2012). Bank capital structure, liquidity, and profitability evidence from the Nigerian banking system. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 2(1), 98-113.
- Vijayakumar, A. (2011). Management of Corporate Liquidity and Profitability: An Empirical Study. *International Journal of Marketing and Technology*, 1(6), 156-175.