International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 3 Issue 5, August 2019 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Liquidity and Financial Performance: A Correlational Analysis of Quoted Non-Financial Firms in Ghana

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How to cite this paper*:* Yusheng Kong | Mohammed Musah | Andrew Osei Agyemang "Liquidity and Financial Performance: A Correlational Analysis of Quoted Non-Financial Firms in Ghana" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-3 | Issue-5, August 2019, pp.133-143, **https://doi.org/10.31142/ijtsrd25248**

IJTSRD25248

ABSTRACT

This study explored the interactions between liquidity and the financial performance of quoted non-financial firms in Ghana. The study was correlational as it sought to examine the relationship between liquidity and the firms' viability. From the Pearson Product-Moment Correlation Coefficient technique of data analysis, liquidity had a significant relationship with the firms' financial performance as measured by ROA, but insignificant relationship with the firms' financial performance as measured by ROE and ROCE. Based on the findings, the study recommended among others that, the firms can improve their final bottom-line by proficiently handling their liquid resources.

KEYWORDS: *Liquidity, Financial Performance, Correlational Analysis, Non-Financial Firms, Ghana*

1. INTRODUCTION

Liquidity involves meeting obligations as they fall due and striking a balance between current assets and current liabilities (Ashok, Namita & Chaitrali, 2018). Peavler (2017) also describes liquidity as the degree to which an asset or security can be bought or sold in the market without affecting the asset's price. According to the author, a liquid asset is characterized by a high level of trading activity and plays a vital role in the functioning of financial markets. To Mueller (2018), markets are liquid when those who have assets holdings can sell them at prices that do not involve considerable losses so as to gain the finance they need to fulfill other commitments. Companies are strained when their level of liquidity is low and have negative working capital. This is because either inadequate liquidity or excess liquidity may be injurious to the smooth operations of the organisations (Mueller, 2018; Ben-Caleb, Olubukunola & Uwuigbe, 2013).

The theory of corporate liquidity demand is based on the assumption that choices regarding liquidity will depend on firms' access to capital markets and the importance of future investment to the firms (Panigrahi, 2013; Ashok, Namita & Chaitrali, 2018; Peavler, 2017; and Ally, 2017). The model predicts that financially constrained firms will save a positive fraction of incremental cash flows, while unconstrained ones will not (Panigrahi, 2013; Ashok, Namita & Chaitrali, 2018; Peavler, 2017; and Ally, 2017). The model further indicates that, a liquid company takes advantage of available investments, cash discounts and lower interest charges on borrowings (Panigrahi, 2013; Ashok, Namita & Chaitrali, 2018; Peavler, 2017; and Ally, 2017). Hence there is a relationship between cash holdings and investment opportunity and thus financial performance (Panigrahi, 2013; Ashok, Namita & Chaitrali, 2018; Peavler, 2017; and Ally, 2017). The difficulties experienced by organisations during financial crisis are due to lapses in basic principles of liquidity management (Ashok, Namita & Chaitrali, 2018; Peavler, 2017; and Ally, 2017). According to Panigrahi (2013), the liquidity of an asset depends on the underlying stress scenario, the volume to be monetized and the timeframe considered. Therefore, efficient and effective liquidity management is crucial if the survival and prosperity of firms is to be assured (Mueller, 2018; Ben-Caleb, Olubukunola & Uwuigbe, 2013).

Liquidity plays a crucial role in the successful functioning of establishments. Entities should therefore ensure that they do not suffer from lack-of or excess liquidity to meet their short-term obligations.

Study on liquidity are of major importance to both internal and external analysts because of their close relationship with the day-to-day operations of firms. Studies on liquidity and their interplay with firms' viability are also crucial because, they tend to add to the existing pool of literature in corporate finance. With the aim of improving the understanding of the non-financial sector of Ghana with respect to the association between liquidity and the financial performance of firms in that sector; and to provide useful information to students, future researchers, investors, experts and supervisory or regulatory authorities; this study was therefore undertaken.

Specifically, the study sought to; examine the relationship between liquidity and the firms' financial performance as measured by ROA, establish the association between liquidity and the firms' financial performance as measured by ROE and to explore the affiliation between liquidity and the firms' financial performance as measured by ROCE. The rest of the paper is arranged as follows; in part two of this study, reviews of relevant literature that supported the topic understudy are brought to light. The section also presents the study's formulated hypothesis. Section three of the study presents the research model and methodology; whilst the fourth section outlines the study's empirical results. In the fifth section, discussions and tests of the study's hypothesis are presented, whilst the conclusion and policy implications of the study form the last part of the report.

2. LITERATURE REVIEW

Ali and Bilal (2018) researched on the determinants of the financial performance of 23 industrial firms listed on the Amman Stock Exchange. Secondary data for the period 2005 to 2015 was used for the study. From the study's regression output, liquidity had a significantly positive effect on the firms' financial performance as measured by ROA. Ayako, Githui and Kungu (2015) researched on the determinants of the financial performance of non-financial firms listed on the Nairobi Securities Exchange. Panel data from 41 firms for the period 2003 to 2013 was employed for the study. From the study's multiple regression output, liquidity was statistically insignificant in explaining the firms' financial performance. Isik (2017) researched on the profitability determinants of real sector firms listed on the Borsa Istanbul Stock Exchange. Panel data from 153 listed firms for the period 2005 to 2012 was used for the study. From the study's findings, liquidity level was a significant determinant of the firms' profitability as measured by ROA.

Binay (2018) explored the link between liquidity management and the profitability of commercial banks in Nepal. Data for the period 2012 to 2016 was employed for the study. From the study's correlational estimates, liquidity management had an insignificant relationship with the banks' ROA, whilst an insignificant influence of liquidity management on the banks' ROA was also revealed from the study's regression analysis. Maja, Ivica and Marijana (2017) examined the influence of age on the performance of firms in the Croatian food industry. A dynamic panel data from 956 firms operating in the Croatian food sector for the period 2005 to 2014 was used for the study. From the study's regression analysis, the control variable liquidity, had a significantly adverse effect on the firms' performance. Ochingo and Muturi (2018) examined the impact of firm characteristics on the financial performance of savings and credit cooperatives society in Kenya. Data from 164 SACCOS for the period 2013 to 2015 was used for the study. From the study's multiple linear regression analysis, liquidity had a significantly positive influence on the SACCOS' financial performance as measured by ROA. Navleen and Jasmindeep (2016) examined the profitability determinants of the Indian automobile industry for the period 2003-2004 to 2013-2014. Data from listed firms on the Bombay Stock Exchange (BSE) dealing in commercial vehicles, three wheelers, two wheelers and passenger vehicles were used for the study. From the study's correlation and step-wise regression analysis, liquidity was a significant determinant of the firms' profitability. Cudiamat and Siy (2017) analyzed the profitability of 23 life insurance companies in the Philippines for the period 2000 to 2012. Through the balanced pooled ordinary least squares regression analysis, liquidity had a significantly negative association with the banks' profitability as measured by ROA.

Onyekwelu, Chukwuani and Onyeka (2018) conducted a study on the impact of liquidity on the financial performance of deposit money banks in Nigeria. Secondary data obtained from a sample of five (5) banks for the period 2007 to 2016 was adopted for the study. From the study's multivariate regression analysis, liquidity had a significantly positive influence on the banks' financial performance as measured by ROCE. Kanga and Achoki (2017) examined the impact of liquidity on the financial performance of agricultural firms listed on the Nairobi Securities Exchange (NSE). Secondary data extracted from the audited annual reports of listed agricultural companies for the period 2003 to 2013 was adopted for the study. From the study's pooled ordinary least squares regression analysis, liquidity had a significantly positive influence on the firms' financial performance as measured by ROA and ROE, but an insignificantly positive impact on the firms' EPS. The study's correlational output also discovered a significantly positive relationship between liquidity and the firms' financial performance as measured by ROA and ROE, but an immaterially positive association between liquidity and the firms' EPS was finally established.

Kamran, Mohammad and Muhammad (2017) explored the determinants of the financial performance of listed financial firms in Pakistan. Data for the period 2008 to 2012 was used for the study. From the study's multiple regression analysis, liquidity had a significant influence on the firms' financial performance. Gonga and Sasaka (2017) examined the determinants of the financial performance of 55 licensed insurance firms in Nairobi County. Data from both primary and secondary sources was employed for the study. From the study's findings, liquidity had an insignificantly positive impact on the firms' financial performance. Mohammad, Ahmad and Mohd (2018) examined the determinants of Malaysian Islamic banks' profitability for the period 1994 to 2015.

An unbalanced data from 17 top Malaysian Islamic banks was used for the study. From the study's regression analysis, liquidity had a significant influence on the banks' profitability. Kalyani, Manish and Ketan (2016) conducted a study to examine the determinants of the financial performance of life insurance companies in India. A ten year data from 23 life insurance companies was used for the study. Through correlation and regression analysis, liquidity was not significantly related to the firms' financial performance as measured by ROA.

Ayu, Zuraida and Mulia (2018) studied the impact of liquidity, profitability and leverage on profit management and its effect on company value in manufacturing firms listed on the Indonesian Stock Exchange. Secondary data extracted from the websites of 150 listed manufacturing firms and the official website of the Indonesian Stock Exchange for the period 2011 to 2015 was used for the study. From the study's findings, liquidity had a significant influence on the firms' profit management. Wambui, Namusonge and Sakwa (2018) studied the influence of liquidity management on the financial performance of non deposit taking savings and credit cooperative societies in Kenya. Primary data obtained from the administration of questionnaires to respondents was used for the study. From the study's multivariate regression output, liquidity management had a significant impact on the SACCOS' financial performance as measured by ROA, ROE and dividend pay-out.

Ali, Mahmoud, Fadi and Mohammad (2018) conducted a study to examine firm-specific and macroeconomic factors that affected the performance of industrial and service firms listed in Jordan. Panel data for the period 2007 to 2016 was employed for the study. From the study's regression estimates, liquidity proxied by the Current Ratio (CR) had a significantly positive influence on the firms' financial performance as measured by ROA. Shoaib, Wang, Jaleel and Peng (2015) examined the determinants of banks' profitability in Pakistan. Panel data for the period 2006 to 2013 was adopted for the study. From the study's regression results, liquidity negatively influenced the banks' profitability. Wondwossen (2016) delved into factors that affected the profitability of general insurance companies in India. Panel data from 4 public and 6 private insurance companies for the period 2006 to 2016 was used for the study. Through the fixed effects regression model, liquidity had an inverse influence on the firms' profitability.

Matin (2017) examined the determinants of banks' profitability in Bangladesh. Panel data from 47 commercial banks for the period 2010 to 2015 was employed for the study. From the study's Feasible Generalised Least Squares (FGLS) regression analysis, liquidity had a significantly negative influence on the banks' profitability as measured by ROA, whilst a significantly positive influence of liquidity on the banks' NIM was also established. Islam and Nishiyama (2016) examined the profitability determinants of 259 commercial banks in Bangladesh, India, Nepal and Pakistan for the period 1997 to 2012. From the study's empirical findings, liquidity had a negative impact on the banks' profitability.

Jepkemoi (2017) examined the determinants of banks' profitability in Kenya. Secondary data from 10 commercial banks listed on the Nairobi Securities Exchange for the period 2010 to 2014 was adopted for the study. From the study's multiple regression analysis, liquidity had an insignificantly positive impact on the banks' profitability as measured by ROA and ROE. Batchimeg (2017) conducted a research to examine the determinants of the financial performance of firms listed on the Mongolian Stock Exchange (MSE) for the period 2012 to 2015. Panel data from 100 listed Joint Stock Companies (JSC) from six (6) major sectors in the Mongolian economy was employed for the study. From the study's regression results, liquidity was not a significant determinant of the firms' financial performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS). Ologbenla (2018) examined the effect of liquidity management on the performance of insurance companies listed on the Nigerian Stock Exchange. Panel data deduced from the annual reports of 5 listed insurance companies for the period 2003 to 2012 was used for the study. From the study's multivariate regression analysis, liquidity had an insignificant influence on the firms' financial performance as measured by ROA. Ashutosh and Gurpreet (2018) analyzed the financial performance of sugar mills in Punjab. Panel data from both co-operative and private sugar mills for the period 2003-04 to 2013-14 was adopted for the study. From the study's multivariate regression analysis, liquidity measured by the current ratio and the quick ratio had an insignificant influence on the profitability of private sugar mills in Punjab sugar industry.

Mehmet and Mehmet (2018) examined the influence of financial characteristics on the profitability of energy firms listed on Borsa Istanbul Stock Exchange. Quarterly (2008:Q1-2015:Q4) panel data of 10 quoted energy firms was employed for the study. From the study's multiple regression analysis, liquidity ratio had a significantly positive effect on the firms' profitability as measured by ROA. Bougatef (2017) examined the determinants of banks' profitability in Tunisia. Findings of the study provided evidence of a significantly positive connection between liquidity and the banks' profitability as measured by ROA. Majumder and Uddin (2017) examined the profitability determinants of nationalized banks in Bangladesh for the period 2010 to 2014. From the study's empirical results, liquidity was significantly inversely associated with the banks' profitability as measured by ROA.

Akenga (2017) studied the impact of liquidity on the financial performance of firms listed on the Nairobi Securities Exchange (NSE). Data obtained from a sample of 30 listed firms selected through the purposive random sampling technique was used for the study. From the study's inferential analysis, liquidity represented by the current ratio had a significantly positive influence on the firms' financial performance as measured by ROA.

Saripalle (2018) explored the determinants of profitability in the Indian logistics industry. Firm-level data from 201 companies was used for the study. Estimates from the study's econometric model provided evidence of liquidity being a significant determinant of the firms' profitability as measured by ROA. Swagatika and Ajaya (2018) explored the determinants of profitability in Indian manufacturing firms. Data covering the pre and post crisis periods from the year 2000 to 2015 was used for the study. From the study's results, liquidity had a significantly positive influence on the firms' profitability as measured by ROA and NPM. Guruswamy and Marew (2017) delved into the profitability determinants of some selected life insurance companies in Ethiopia. A panel data sourced from the national bank of Ethiopia and the ministry of finance and economic cooperation was used for the study. Through the descriptive, correlation and regression analysis, the study disclosed an insignificant association between liquidity and the firms' profitability. Hamidah and Muhammad (2018) studied the influence of leverage, liquidity and profitability on the performance of companies in Malaysia. Data obtained from 21 companies for the period 2010 to 2014 was employed for the study. From the study's correlational results, liquidity as measured by the current ratio had a significantly positive connection with the firms' ROA, whilst a significantly positive influence of liquidity on the firms' financial performance was discovered from the study's multivariate regression analysis.

Irm, Priyarsono and Tria (2017) conducted a study to examine firm specific and macroeconomic factors that determined the profitability of insurance companies in Indonesia. Panel data for the period 2010 to 2014 was employed for the study. From the study's findings, liquidity ratio had a significantly positive effect on the firms' profitability. Nyamiobo, Willy, Walter and Tobias (2018) examined the influence of firm characteristics on the financial performance of listed firms on the Nairobi Securities Exchange (NSE). Through the multiple linear regression analysis, liquidity had a significant influence on the firms' financial performance.

2.1. Hypothesis Development

Based on the various reviews of literature, the following hypothesis were formulated for testing:

H_{01}: Liquidity has no significant relationship with the firms' financial performance as measured by ROA.

H_{02}: Liquidity has no significant association with the firms' financial performance as measured by ROE.

H_{03}: Liquidity has no significant affiliation with the firms' financial performance as measured by ROCE.

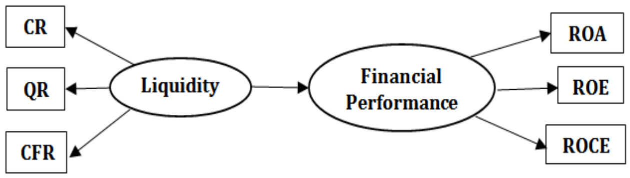

Figure 1: Conceptual Framework

3. METHODOLOGY

All the twenty eight (28) non-financial firms listed on the Ghana Stock Exchange (GSE) representing 68.29% of the total number (41) of listed firms formed the target population of the study. The purposive, selective or judgemental sampling technique was employed to select a sample from the target population. This technique was adopted because it was flexible, and met the multiple needs and interests of the researcher. Thus, it was the only viable sampling technique that could help the researcher to obtain information from a very specific group of individuals or elements that possessed the researcher's traits of interest (Black, 2010; and Saunders, Lewis & Thornhill, 2012).

The number of years in existence, technical suspension due to one reason or the other, unaudited financial records, non-existence of trend records, incomplete financial statements and the presentation of annual reports in foreign currencies either than that of the currency of Ghana (because of the non-stability of the Ghana Cedi to major foreign currencies) were the factors or filters that were considered during the sampling process. Firms that failed in any of the above filters or factors did not form part of the study's sample. In all, thirteen (13) firms were rejected as they failed in one or more of the factors that were considered for the sampling. The sample therefore totaled fifteen (15) representing 53.57% of the target population or 36.59% of the total number of listed firms on the Ghana Stock Exchange (GSE).

The fifteen (15) selected non-financial firms were the Ghana Oil Company Ltd, Total Petroleum Ghana Ltd, Starwin Products Ltd, Camelot Ghana Ltd, Aluworks Ltd, Clydestone Ghana Ltd, African Champion Industries Ltd, Benson Oil Palm Plantation Ltd, Fan Milk Ltd, Guinness Ghana Breweries Ltd, Unilever Ghana Ltd, PZ Cussons Ghana Ltd, Produce Buying Company Ltd, Mechanical Lloyd Company Ltd and Sam Woode Ltd.

A balanced secondary data extracted from the audited and published annual reports of the selected firms for the period 2008 to 2017 was used for the study. The annual reports comprised of the comprehensive income statement, statement of financial position, statement of cash flows, statement of changes in equity and notes to the accounts. The period 2008 to 2017 was considered for the study because, it was the period with the latest data and was therefore very relevant to the topic understudy. Ratios relating to the firms' liquidity and financial performance were then computed from the annual reports using various measurements or formulas outlined for the study. Statistical software package STATA version 15 was employed for all the data analysis at an alpha level of 5% ($p \leq 0.05$).

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics on Study Variables

As displayed in Table, 1 ROA had a mean value of 0.0052693, a standard deviation of 0.4849762 and a variance of 0.2352019. The data values of ROA ranged between -5.6487 and 0.7656. The figure -10.64317 been the skewness for ROA indicates that, the ROA distribution was negatively skewed. The kurtosis coefficient of 124.8778 implies, the distribution for ROA was not normal. The ROE of the firms had an average value of 0.167214. This implies, on the average, every cedi of common stockholders' equity generated 16.7214 pesewas of net income. The positive mean ROE is an indication that, management were efficiently utilizing shareholder's capital to generate income and profits. This serves as a favourable sign for potential investors because, they are likely to get a return on their investments.

The positive average ROE is also not just an indication of the firms' profitability, but shows that, the firms were good at using their retained earnings (which have minimal risks because it does not increase the debt position of establishments) efficiently to generate revenues. The positive average ROE of the firms further signposts that, they had a huge economic *moat*. Thus, the firms had the ability to maintain competitive advantage over their competitors by protecting their long-term profits and market share. The firms having an economic moat also implies, they were worthy enough to generate economic profits for a longer stretch of time, and were able to reinvest those cash flows at a high rate of return for a longer period. The firms' ROE also had a standard deviation of 1.184918 and a variance of 1.404031. This is an indication that, data values of ROE deviated from both sides of the average by 1.184918, implying, the values were a bit much dispersed from the mean.

Table 1: Descriptive Statistics on Study Variables

Variables	ROA	ROE	ROCE	CR	QR	CFR
Mean	0.0052693	0.167214	0.1945633	1.313404	0.8497347	0.3265207
Std. Dev.	0.4849762	1.184918	1.09571	1.195626	0.9351417	0.7158448
Variance	0.2352019	1.404031	1.20058	1.429521	0.87449	0.5124337
Minimum	-5.6487	-4.5277	-1.5666	0.0358	0.0329	-1.6939
Maximum	0.7656	12.8951	12.8951	7.6849	6.1178	4.4039
Range	6.4143	17.4228	14.4617	7.6491	6.0849	6.0978
Skewness	-10.64317	7.859589	10.44939	3.107405	3.304711	2.787994
Kurtosis	124.8778	91.75657	122.057	14.42306	15.39389	15.23229
Obs (N)	150	150	150	150	150	150

Return on Equity (ROE) of the sampled firms also had a minimum value of -4.5277 and a maximum value of 12.8951leading to a range of 17.4228. The distribution for ROE was positively skewed with a coefficient of 7.859589, implying, the right tail of the ROE distribution was longer than that of the left tail. The kurtosis value of 91.75657 [excess (K)= 91.75657-3.0 = -88.75657] shows that, the ROE distribution was *leptokurtic* or *slender* in shape. In other words, the ROE distribution was not normally distributed as it had *fatter* tails that asymptotically approached zero more slowly than a *Gaussian distribution*, and therefore produced more outliers than the normal distribution. The ROCE of the firms had an average value of 0.1945633. The mean ROCE figure implies, for every cedi invested in capital employed, the firms made 19.45633 pesewas of profits.

The positive ROCE figure depicts that, the firms were efficiently using their capital employed as well as their long-term financing strategies. The return on capital employed ratio must however be always higher than the rate at which firms borrow to fund their assets. For instance, if the sampled firms had borrowed at 10% and have achieved a return of 19.46% as the average ROCE figure (0.1945633) have shown, it means the firms have made gains. Conversely, if the mean ROCE of the firms was to be lesser than the rate at which they had borrowed (say 0.05 or 5%), it means a loss on the part of the firms. The ROCE of the sampled firms had a standard deviation of 1.09571 and a variance of 1.20058. This means that, the data for ROCE deviated from both sides of the mean by 1.09571, which is an indication that, the data was a bit widely dispersed from the average. The minimum and maximum values of ROCE were -1.5666 and 12.8951 respectively, leading to a range of 14.4617. The distribution for ROCE was highly positively skewed with a coefficient of 10.44939, implying a greater portion of the ROCE distribution fell on the left hand side. In other words, the right tail of the ROCE distribution was longer than that of the left tail. The kurtosis value of 122.057 [excess (K)=122.057-3.0=119.057] is an indication that, the ROCE distribution was higher and peakier *(leptokurtic)* than the *Gaussian distribution* which shows its abnormality.

The CR of the firms sought to measure the firms' ability to meet their short-term financial obligations. From the results, the CR of the firms had an average value of 1.313404, a maximum value of 7.6849 and a minimum value of 0.0358, resulting in a range of 7.6491. The mean CR value of 1.313404 implies, the firms were not too safe in terms of good financial health. Thus, the current assets of the firms were not too much greater than the current liabilities and suggests that, a little portion of the current assets (1.313404-1= 0.313404) would be left if the current obligations of the firms were to be met. The average CR figure is also an indication that, the operating cycle efficiency of the firms was not too good or the firms were not able to turn their products into too much cash. However, the mean CR figure of the firms does not necessarily indicate that, they were in a shaky state of financial well-being. This is because, the firms might have been using their current assets efficiently by managing their working capital appropriately. In other words, a greater portion of the liquid assets of the firms might have been putting into long-term investments.

The CR of the firms also had a standard deviation of 1.195626 and a variance of 1.429521. This implies, dispersions or deviations around the mean CR was 1.429521, which is an indication that, the data values of CR were a bit widely dispersed from the mean. The skewness value of 3.107405 for CR means, the CR distribution was highly positively skewed or skewed to the right. This is an indication that, a greater portion of the CR distribution fell on the left side. The kurtosis value of 14.42306 [excess (K)=14.42306-3.0=11.42306] is an indication that, the CR distribution was higher and peakier *(leptokurtic)* than the normal distribution which shows its abnormality.

The sampled firms' had a mean QR of 0.8497347, a minimum value of 0.0329 and a maximum value of 6.1178, leading to a range of 6.0849. The average QR value of 0.8497347 means, the firms were not fully equipped with sufficient assets that could be instantly liquidated to pay off their current liabilities. In other words, the firms were not in a position to be able to pay off their current liabilities in the short-term. The QR of the firms also had a standard deviation of 0.9351417 and a variance of 0.87449. This is an indication that, the data values of QR were somehow widely dispersed from the mean. The QR distribution of the sampled firms had a skewness coefficient of 3.304711, indicating that, the distribution was positively skewed. With a kurtosis value of 15.39389 [excess (K) = 15.39389-3.0=12.39389], it can be concluded from the study that, the distribution for QR was not of normal shape as it was higher and peakier than the normal curve.

The CFR sought to measure how well the current liabilities of the firms were covered by the cash flows generated from the firm's operations. Operating cash flow ratio was considered as essential for this study because, it was viewed as one of the accurate measures of liquidity since it could not be easily manipulated like earnings. The CFR of the firms had an average value of 0.3265207, a maximum value of 4.4039 and a minimum value of -1.6939, resulting in a range of 6.0978. The average CFR value of 0.3265207 depicts that, for the period 2008-2017, the firms were not able to generate more cash than what was needed to pay off their current liabilities when they fell due.

In other words, the firms' current liabilities could not be covered by the cash generated from their operations over the period. However, there could be many interpretations for the mean value because, not all low operating cash flow ratios are indications of poor financial health. For instance, the firms might have invested their cash flows into projects that could render greater rewards in the future. The figures 0.7158448 and 0.5124337 being the standard deviation and the variance of CFR respectively indicate that, the data values of CFR were not too dispersed or deviated from the average. The operating cash flow ratio had a skewness value of 2.787994, which is an indication that, the CFR distribution was highly positively skewed or skewed to the right. The kurtosis value of 15.23229 [excess (K)=15.23229-3.0=12.23229] for CFR shows that, the CFR distribution was not normally distributed which is explained by the wide range of 6.0978.

4.2. Correlational Analysis

Table 2 shows the bivariate relationships between liquidity and the financial performance of non-financial firms listed on the Ghana Stock Exchange. From the table, there was a significantly weak and positive link between ROA and CR at the 5% level of significance [r=0.2061, (p=0.0114)<0.05]. The positive correlation between CR and ROA implies, an increase in CR led to an increase in ROA and vice-versa, and a decrease in CR led to a decrease in ROA and vice versa. The relationship between QR and ROA was weakly positive (r =0.1841) and statistically significantly different from 0 at the 95% confidence interval [(p=0.0242)<0.05]. The positive connection between QR and ROA is an indication that an increase in QR led to an increase in ROA and vice-versa, and a decrease in QR led to a decrease in ROA and vice versa.

Table 2: Correlations of Liquidity with the Firms' Financial Performance

Variables	ROA	ROE	ROCE	CR	QR	CFR
ROA	1.0000					
ROE	0.0037	1.0000				
	(0.9642)					
ROCE	-0.0156	0.9516*	1.0000			
	(0.8498)	(0.0000)				
CR	0.2061*	0.0164	-0.0072	1.0000		
	(0.0114)	(0.8421)	(0.9299)			
QR	0.1841*	0.0375	0.0216	0.9660*	1.0000	
	(0.0242)	(0.6485)	(0.7927)	(0.0000)		
CFR	0.2000*	0.0356	0.0285	0.7449*	0.7571*	1.0000
	(0.0142)	(0.6657)	(0.7293)	(0.0000)	(0.0000)	

*Note: * implies significance at the 5% level and values in parenthesis ( ) represent probabilities.*

Further, CFR and ROA were significantly positively related to each other with a correlation coefficient of 0.2000 and a *p value* of 0.0142 at α=5%. The positive relationship between CFR and ROA means, an increase in CFR led to an increase in ROA and vice-versa, and a decrease in CFR also led to a decrease in ROA and vice-versa. There was also an insignificantly positive association between CR and ROE at the 5% level of significance [r =0.0164, (p=0.8421)>0.05]. The *r* value of 0.0164 is an indication that, an increase in CR led to an increase in ROE and vice-versa, and a decrease in CR also led to a decrease in ROE and vice-versa. Additionally, the study established an insignificantly positive relationship between QR and ROE at the 95% confidence interval [r =0.0375, (p=0.6485)>0.05]. The figure 0.0375 being the correlation coefficient between QR and ROE implies, as QR increased, ROE also increased in the same direction and vice-versa, and as QR decreased, ROE also decreased in the same direction and vice-versa. The study also disclosed an insignificantly positive association between CFR and ROE at α=5% [r =0.0356, (p=0.6657)>0.05].

The insignificantly positive correlation that existed between CFR and ROE means, an increase in CFR led to an increase in ROE and vice-versa, and a decrease in CFR also led to a decrease in ROE and vice-versa. Current Ratio (CR) further had an insignificantly adverse association with ROCE at the 95% confidence interval [r = -0.0072, (p=0.9299)>0.05]. The *r* value of -0.0072 is an indication that, as CR increased, ROCE decreased and vice-versa. Similarly, QR and ROCE were insignificantly positively related to each other at α=5% [r =0.0216, (p=0.7927)>0.05]. The correlation coefficient of 0.0216 means, an increase in QR led to an increase in ROCE and vice-versa, and a decrease in QR also led to a decrease in ROCE and vice-versa. The study finally revealed an insignificantly positive association between CFR and ROCE at the 95% confidence interval [r = 0.0285, (p=0.7293)>0.05]. The *r* value of 0.0285 is an indication that, an increase in CFR led to an increase in ROCE and vice-versa, and a decrease in CFR also led to a decrease in ROCE and vice versa.

5. DISCUSSIONS

5.1. The Link between Liquidity and the Firms' Financial Performance (ROA)

From the study's findings, liquidity measured by CR had a significantly weak and positive association with ROA at the 5% level of significance [r=0.2061, (p=0.0114)<0.05]. Liquidity measured by QR also had a significantly weak and positive affiliation with the firms' ROA at the 95% confidence interval [r =0.1841, (p=0.0242)<0.05]. Finally, liquidity measured by CFR was significantly weak and positively related to ROA at α=5% [r =0.2000, (p=0.0142)<0.05]. These findings supported that of Nyamiobo, Willy, Walter and Tobias (2018) whose study on listed firms on the Nairobi Securities Exchange (NSE) found a significant association between liquidity and the firms' financial performance. The study's findings were also in tandem with that of Saripalle (2018) whose research on 201 Indian logistic companies, discovered a significant connection between liquidity and the firms' profitability measured by ROA.

The study's findings were also in line with that of Bougatef (2017) whose study on the banking industry in Tunisia, established a significantly positive association between liquidity and the banks' profitability as measured by ROA. The study's findings were also consistent with that of Swagatika and Ajaya (2018) whose study on Indian manufacturing firms, found a significantly positive association between liquidity and the firms' profitability as measured by ROA. The study's findings were however in disparity with that Batchimeg (2017) whose research on 100 Joint Stock Companies (JSC) listed on the Mongolian Stock Exchange (MSE) found an insignificant link between liquidity and the firms' financial performance as measured by ROA. The study's findings did not also agree with that of Guruswamy and Marew (2017) whose research on some selected life insurance companies in Ethiopia, disclosed an insignificant association between liquidity and the firms' profitability. The study's findings was finally inconsistent with that of Majumder and Uddin (2017) whose study on nationalized banks in Bangladesh found an inverse relationship between liquidity and the banks' profitability measured by ROA.

5.1.1. Test of Hypothesis

From the study's findings, liquidity surrogated by the Current Ratio (CR), Quick Ratio (QR) and the Cash Flow Ratio (CFR) had a significantly positive association with the firms' financial performance as measured by ROA. The study therefore failed to accept the *null hypothesis* (H_{01}) that, liquidity had no significant relationship with the firms' financial performance as measured by ROA and concluded that, liquidity measured by the CR, QR and the CFR had a significantly positive affiliation with the firms' financial performance as measured by ROA.

5.2. The Interactions between Liquidity and the Firms' Financial Performance (ROE)

The study disclosed an insignificantly positive association between CR and ROE at the 5% level of significance [r =0.0164, (p=0.8421)>0.05]. An insignificantly positive relationship between QR and ROE was also established at the 95% confidence interval [r =0.0375, (p=0.6485)>0.05]. Finally, an insignificantly positive association was found between CFR and ROE at α=5% [r =0.0356, (p=0.6657)>0.05]. These findings were in line with that of Ologbenla (2018) whose study on 5 insurance companies listed on the Nigerian Stock Exchange, found an insignificant relationship between liquidity and the firms' financial performance. The study's findings were also consistent with that of Ashutosh and Gurpreet (2018) whose study on sugar mills in Punjab, revealed an insignificant relationship between liquidity and the profitability of private sugar mills in the Punjab sugar industry.

The study's findings further supported that of Jepkemoi (2017) whose research on 10 commercial banks listed on the Nairobi Securities Exchange (NSE) established an insignificantly positive association between liquidity and the banks' profitability as measured by ROE. The study's findings were however not in agreement with that of Mehmet and Mehmet (2018) whose study on 10 energy firms listed on Borsa Istanbul Stock Exchange, found a significantly positive association between liquidity ratio and the firms' profitability. The study's findings were also not consistent with that of Ayu, Zuraida and Mulia (2018) whose study on 150 listed manufacturing firms on the Indonesian Stock Exchange, established a significant affiliation between liquidity and the firms' profit management. The study's findings finally contrasted with that of Wambui, Namusonge and Sakwa (2018) whose research on non deposit taking savings and credit cooperative societies in Kenya, discovered a significant connection between liquidity management and the financial performance of the SACCOS'.

5.2.1. Test of Hypothesis

From the study's findings, liquidity proxied by the Current Ratio (CR), Quick Ratio (QR) and the Cash Flow Ratio (CFR) had an insignificantly positive association with the firms' financial performance as measured by ROE. The study therefore failed to reject the *null hypothesis (H_{02})* that, liquidity had no significant association with the firms' financial performance as measured by ROE and concluded that, liquidity surrogated by the CR, QR and the CFR had an insignificantly positive connection with the firms' financial performance as measured by ROE.

5.3. The Association between Liquidity and the Firms' Financial Performance (ROCE)

From the study's findings, CR had an insignificantly adverse association with ROCE at the 95% confidence interval [r = -0.0072, (p=0.9299)>0.05]. An insignificantly positive affiliation was also found between QR and ROCE at α=5% [r =0.0216, (p=0.7927)>0.05]. The study finally discovered an insignificantly positive association between CFR and ROCE at the 5% significance level [r = 0.0285, (p=0.7293)>0.05]. These findings lended support to that of Ayako, Githui and Kungu (2015) whose research on 41 non-financial firms listed on the Nairobi Securities Exchange (NSE) found a statistically insignificant affiliation between liquidity and the firms' financial performance. The study's findings were also in tandem with that of Gonga and Sasaka (2017) whose research on 55 licensed insurance firms in Nairobi County, discovered an insignificant association between liquidity and the firms' financial performance.

The study's findings were further in line with that of Kalyani, Manish and Ketan (2016) whose study on 23 life insurance companies in India, established an insignificant relationship between liquidity and the firms' financial performance. The study's findings also agreed with that of Binay (2018) whose research on commercial banks in Nepal, found an insignificant link between liquidity and the banks' financial performance. The study's findings were however in contradiction with that of Ochingo and Muturi (2018) whose study on 164 savings and credit cooperative societies in Kenya, found a significantly positive association between liquidity and the SACCOS' financial performance.

The findings did not also support that of Kanga and Achoki (2017) whose research on agricultural firms listed on the Nairobi Securities Exchange (NSE) discovered a significant link between liquidity and the firms' financial performance. The study's findings were finally in disagreement with that of Onyekwelu, Chukwuani and Onyeka (2018) whose research on five (5) deposit money banks in Nigeria, disclosed a pertinent relationship between liquidity and the banks' financial performance as measured by ROCE.

5.3.1. Test of Hypothesis

From the study's findings, liquidity represented by the Current Ratio (CR), Quick Ratio (QR) and the Cash Flow Ratio (CFR) had an insignificant affiliation with the firms' financial performance as measured by ROCE. The study therefore failed to reject the *null hypothesis (H_{03})* that, liquidity had no significant affiliation with the firms' financial performance as measured by ROCE and concluded that, liquidity proxied by the CR, QR and the CFR had an insignificant relationship with the firms' financial performance as measured by ROCE.

6. CONCLUSION AND POLICY IMPLICATIONS

The purpose of this study was to examine the relationship between liquidity and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). Panel data extracted from the audited annual reports of 15 listed non-financial firms for the period 2008 to 2017 was used for the study. In the study, financial performance of the firms was measured through Return on Assets (ROA), Return on Equity (ROE) and Return on Capital Employed (ROCE), whilst the Current Ratio (CR), Quick Ratio (QR) and the Cash Flow Ratio (CFR) were used to proxy liquidity. From the study's Pearson Product-Moment Correlation Coefficient estimates, liquidity surrogated by the current ratio, quick ratio and the cash flow ratio had a significant relationship with the firms' financial performance as measured by ROA, but liquidity proxied by the current ratio, quick ratio and the cash flow ratio had no significant association with the firms' financial performance as measured by ROE and ROCE.

Based on the findings, the study recommends that non-financial firms listed on the Ghana Stock Exchange (GSE) can be very fruitful if they are able to transform their cash flow from operations within the same operational cycle. If this is not conceivable, the firms might need to borrow to supplement their continued working capital needs. Thus, the indistinguishable goals of profitability and liquidity must be well coordinated.

The firms' investments in liquid assets are unavoidable to guarantee the conveyance of goods and services to their eventual clients, and appropriate management of the same can help them to accomplish their anticipated objective of amassing wealth at good liquidity positions. If the firms' resources are obstructed at diverse phases of the supply chain, this will lengthen their cash operational cycle. Though this might surge their profitability due to the rise in sales, it might also influence their profitability negatively if the costs tied up in working capital surpass the gains of holding more inventory and/or granting more trade credits to clients. It is also recommended that non-financial firms listed on the Ghana Stock Exchange should project their sales and maintain adequate resources in accordance to their estimated sales level, so that, they will be able to make good negotiations when making cash purchases, and thus reduce costs.

It was established from the study that, liquidity proxied by the current ratio, quick ratio and the cash flow ratio had a positive link with the firms' financial performance as measured by ROA. This finding implies, the firms can improve their profitability positions by efficiently managing their liquid assets. Thus, if the firms' liquid assets are handled expertly, their final bottom lines are expected to improve significantly. It was also discovered that, liquidity surrogated by the current ratio, quick ratio and the cash flow ratio had no significant affiliation with the firms' financial performance as measured by ROE and ROCE. This is an indication that, an increase in liquidity did not significantly lead to an increase in the firms' financial performance as per ROE and ROCE.

The study recommends that, factors such as seasonal changes in demand, firm size, manufacturing cycle and technological changes might have a greater influence on the firms' profitability. The firms should therefore factor these factors into their business decisions. In summary, if the firms are able to implement the recommendations outlined by this study, they are definitely going to have an improvement in their working capital positions, and with improved working capital positions, the firms will be able to utilise their capacities proficiently to quicken their economic growth.

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