Full Length Research

Effect of Liquidity Management on the Financial Performance of Dangote Sugar Nigeria Plc

[1]ENADEGHE Best Iyobor, [2]ABDULLAHI, Abubakar Sadiq, [3]YAHAYA Mahmud B., and [4]LAWAL Olaniyi Babatunde

[1,2,3]Department of Banking and Finance, Federal Polytechnic Bida, Niger state
[4]Department of Accountancy, Federal Polytechnic Bida, Niger state
Corresponding author: Enadeghe Best Iyobor, enadeghebestiy@gmail.com, Phone Number: +2348032112269

The study is on the effect of liquidity management on the financial performance of Dangote Sugar Nigeria Plc. An ex-post factors research design was adopted and quantitative data were sourced from the company's annual reports and account for 2013-2022. Ordinary least square regression, descriptive statistics and correlation matrix were employed in the data analysis. Findings show that cash conversion ratio (CCR), plays a significant role in influencing the financial performance, current (CR) and quick ratio (QR) have notable but smaller effects. These findings suggest that effective liquidity management is essential for enhancing the company's financial performance. However the study recommends that Dangote Sugar Nigeria Plc improves its financial performance by optimizing its cash conversion ratio (CCR). This involves streamlining account receivable accounts payable and inventory turnover processes. Efficient working capital management is crucial for enhancing cash flow, and continuous monitoring and analysis of CCR can help identify areas for improvement. While prioritizing CCR, the company should also balance maintaining healthy current and quick ratios

Keywords: Ordinary least square regression, cash conversion ratio (CCR), current ratio (CR), quick ratio (QR)

INTRODUCTION

Background to the Study

Liquidity management refers to how well a firm manages its cash holding and near cash items because cash is any or organization's most liquid asset resources. It deals with the ability of a company to meet its maturing debt obligations (Pandey, 2010). It concerns when liquid assets would be needed and when they would be available for the business to operate smoothly. Proper management of a firm's liquidity position involves making cash projections or forecasts as well as preparing statements of cash and fund flows as desired by the firm. Cash flow statements or forecasts provides information regarding when cash receipts would be realized from sales or debtors and when payments would be required to be made to creditors (suppliers of materials or goods) and to other holders of claims against the firm.

Efficient management of liquidity means that holding too little cash is bad just as holding too much cash is poor business management. There has to be a balance. Pandey (2010) depicted that the inability of a firm to meet its maturing obligations due to insufficient funds will lead to poor credit worthiness, loss of creditors' confidence or legal pressures that may end up in insolvency or bankruptcy (in extreme case). On the other hand, in the case of too much

cash or near cash items, excess liquidity would be holding idle assets that would earn no income but reduce profits. Therefore, business managers need to balance liquidity and profitability, because being liquid is not equal to being profitable. This is why a good financial manager should strive to achieve profitability and liquidity. A lack of sufficient liquidity may lead to resulting in the firm's closure. In contrast, excess liquidity (holding idle liquid current assets, for example would rather lead to incurring unnecessary cost that would negatively impact on profitability.

Most business failures in the past have been attributed to business owner's incapacity to properly manage their firm's liquidity, ensuring their financial performance. Ehiedu (2014) argued that liquidity should not be excessive or insufficient. Excess liquidity refers to accumulated idle cash that does not generate profit for the firm or organization. In contrast, insufficient liquidity would affect the firm's manufacturing process, earning ability, and creditworthiness. Liquidity ratios apply to several different liquidity indicators, including net working capital, cash ratio, quick ratio, and current ratio, to name a few.

There is consensus in theoretical literature that financial performance and liquidity constitute the most prominent issues in corporate finance. While it may be true that the goal for any firm is to maximize profit, too much attention on performance may lead the firm into a pitfall by diluting its liquidity position (Niresh, 2018). Therefore, the need to balance the firm's desire to make profit and remain liquid cannot be over-emphasized; hence there is a need for effective liquidity management. Scholars have argue that some firms' failures have been attributed to poor liquidity management. Some studies have also linked poor liquidity management as a major contributing factor to the Global Financial crisis of 2007-2008 (Adalsteinsson, 2017).

Hence, this study seeks to examine the effect of liquidity management on the financial performance of Dangote Sugar Nigeria Plc for the periods covering 2013-2022 using the company's annual reports and account within those periods.

Statement of the Problem

A major challenge that financial managers all over the world, face is maintaining sufficient funds to meet their obligations as they mature while at the same time ensuring adequate returns on their investment.

Rehman, Khan and Khokhar (2015) stated that liquidity and financial performance are the most bulbous issues in the realm of corporate finance and the subject of liquidity is easily defined. On this per se the cushion is available to further explore more studies and research on liquidity management and financial performance. This rises from the apparent conflict that between the management objective of maintaining both a high level of liquidity and high performance. As explained by Olagunju, Adenauju and Olabode (2018), these objectives are in oppositional in that effort by a firm to enhance performance can adversely impacts its liquidity and solvency positions and improving these financial metrics may, in turn affect performance.

Evidence from investigation shows that in developed countries, previous studies have been conducted regarding liquidity management and its impact on financial performance. Less work has been concerning developing countries like Nigeria. Based on this perception the cushion is available for further research on the effect of liquidity management on performance. There are some identified gaps, the sample size, length of time, and the methodology applied. Hence this study shall examine the effect of liquidity management on the financial performance of Dangote Sugar Nigeria Plc.

Objectives of the study

The main objective of this study was to determine the effect of liquidity management on the financial performance of Dangote Sugar Nigeria Plc. Other specific objectives are:

i.   To examine the extent to which cash conversion ratio affects the financial performance of Dangote Sugar Nigeria Plc.
ii.   To evaluate the extent to which current ratio has affect the financial performance of Dangote Sugar Nigeria Plc.
iii.   To determine the extent to which quick ratio influence on the financial performance of Dangote Sugar Nigeria Plc

Another part of the paper is sectioned accordingly: Section ii-Literature review; Section iii-Methodology, Section iv-Data presentation and analysis, and Section v –Conclusion and recommendations.

LITERATURE REVIEW

Introduction: Conceptual Framework

Concept of Liquidity Management

Abstractly, liquidity management is the efficient and effective planning and organizing of banks assets to maximize their profitability and liquidity at the lowest cost possible. In practice, it entails adjusting the amount of available cash to match the desired required reserve level, ensuring that it does not affect the bank's profit-making and market activities (Aghada&Osuji, 2013). Adequate liquidity is essential to every business.

Omaliko and Okpala (2020) opined that liquidity determines if an entity can meet its financial obligations in the short-term. In contrast, solvency indicates the ability to meet long term financial commitments. Liquidity is also viewed traditionally as arising from financing activities where firms borrow to raise cash for operations. Liquidity is the ability of a firm to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. In contrast, effective liquidity risk management helps ensure a firm's ability to meet cash flow obligations, which are uncertain as they are affected by external events and other agents 'behavior. Management Liquidity risk is crucial because if one financial institution runs of cash, it can affect the entire banking system. This is particularly true when banks use money from short term deposits to make long term loans. (Grace, Ann, &Onodugo, 2016).

Efficient liquidity management necessitates a delicate balance, as maintaining insufficient cash reserve can be detrimental to the stability of an organization. In contrast, excessive cash holdings may indicate suboptimal business administration.Pandey (2010) asserts that the inability of a firm to meet its maturing obligations due to insufficient funds will lead to poor credit worthiness, loss of creditors' confidence or legal pressures that may end up in insolvency or bankruptcy (in the extreme case). On the other hand, in the case of too much cash or near cash items, excessive liquidity would be holding assets idle that would earn no income but reduce profits. Therefore, business managers need to balance liquidity and profitability, because being liquid is not equal to being profitable. This is why a good financial manager should strive to achieve balance profitability and liquidity. A lack of sufficient liquidity may lead suppliers 'pressure, resulting in the firm's closure. In contrast,excess liquidity (holding idle liquid current assets, for example) would rather lead to incurring unnecessary cost that would negatively impact on profitability.

Liquidity management is a critical component of any organizational environment that necessitates careful consideration, planning, and management because it influences the level of trust among stakeholders. Liquidity should be controlled such that neither too much nor too little is available as firms with poor liquidity management experience illiquidity and eventually bankruptcy (Majakusi, 2016; Abdi & Kavale, 2016; Edem, 2017). The need for shareholders to maximize their wealth has forced the primary goal of profit maximization for businesses.

A key issue in liquidity management is the need to strike a balance between the liquidity position of an entity and profitability; as both are expected to influence the value of companies positively and significantly.

Okoro (2016) and Ware (2015) argued that planning and controlling liquidity position of entity involves an understanding of the current ratio, quick ratio, cash ratio, short-term debt ratio, operating cash flow ratio, revenue growth, working capital ratio, average collection period, average payable period, inventory holding period and cash conversion cycle; as these have functional implications on profitability and value of firms in both short and long-terms.

Concept of Financial Performance

Financial performances refer to the measurable benefits derived from a firm's, functions and operations as documented in its financial statement. It can be measured with variables like profitability ratios (earnings per share, dividend per share, return on equity, return on asset, return on investment, return on capital employed), or by market-based measures (Tobin's Q). Herly and Sisnuhadi (2011), guests that a high performing company will demonstrate its strengths through extensive and trustworthy financial disclosure. However, one not performing as well may be more reticent to provide detailed records.

Financial ratios which express link between variables disclosed in financial statements. Financial ratios are useful and can meaningfully be employed as financial performance measures when compared with other related meaningful information, either at present or a past similar measure(s) for the same entity or similar ones in the same industry (Kabayeh, Nu'aimat & Dahmash, 2012). Al-Matari, Al-Swidi and Fadzil (2014) opine that financial performance forms the core of strategic management. More importantly, shareholders are interested in performance metrics, particularly accounting-based measures (Wahla, Shah & Hussain, 2012).

Financial performance is also seen as measuring the results of a firm's policies and operations in monetary terms. In assessing the overall financial condition of a company, the income statement and the balance sheet are important reports, as the income statement captures the company's operating performance and the balance sheet shows its net worth (Appah & Odogu, 2016)

Review of Empirical Studies

Etim, Nsima, Ekwere and Glory (2022) examined the influence of liquidity management on firm value of quoted manufacturing companies in Nigeria. Their investigation was based on the understanding that the ongoing success of public traded manufacturing companies relies on increasing their value, which in turn is influenced by how effectively managers handles the company's cash flows. An ex-post facto research design was used for the study. Forty-two (42) quoted companies were sampled out off a population of fifty-six (56) quoted listed on the floor of the Nigerian Stock Exchange (NSE) as of December 31, 2019. The independent variables for liquidity management were measured by the current ratio (CRR), quick ratio (QR), cash ratio (CR) and net working capital ratio (NWCR), and firm value (AV) was the dependent variable panel data was sourced from the published financial reports of the sampled companies and analyzed using fixed effect regression technique. Results revealed that CRR, QR and NWCR positively and significance influenced on FV. In contrast CR had a positive and insignificant influence.

Yahaya (2020) investigated the effect of liquidity management on the profitability of manufacturing firm Nigeria. The study considers a sample size of all the manufacturing firms in the Nigeria Stock Exchange (NSE). Secondary data were obtained from the financial statement of the listed firms, which covered a five years (2008-2017). Data were analyzed using correlation matrix and Ordinary Least Square regression techniques. The result of the study revealed that the current ratio is positive. In contrast, the quick ratio is negative and both have an insignificant relationship with profitability in manufacturing firm. On the other hand, the debt ratio has a positive and significant relationship with the return on assets.

Niresh (2017) in his study on the cause -and effect-relationship between liquidity and profitability for 31 listed manufacturing firms from 2007-11 in Sri Lanka found no significant relationship between current ratio, quick ratio, and cash ratio and profitability ratios proxy by net profit, return on capital employed, and ROE.

Hamid and Akhi (2016) identified the relationship between liquidity and profitability in Bangladesh pharmaceutical and chemicals sector. This study found a positive relationship between QR and WCR with ROA, ROE, and ROCE from regression analysis. However, regression analysis found no significant association between liquidity and profitability in Bangladesh pharmaceuticals and chemicals sector.

Etale and Bingilar (2016) investigated how liquidity management affects the profitability of five selected food and beverages companies in Nigeria. The study covers the period betweens 2011-2015. It uses return on capital as proxy for profitability, while cash ratio, quick ratio and cash conversion cycle serve as liquidity proxies. Descriptive statistics and multiple regressions were used to analyze data collected from the Nigeria Stock Exchange. The result indicated a positive significant relationship of cash ratio and quick ratio on return on capital employed. At the same time, the cash ratio and cash conversion cycle served as liquidity proxies on return on capital employed. The result indicated a significant positive relationship between the cash and quick ratios on capital employed and a negative and insignificant relationship between the cash conversion circle and return on capital employed.

Ofoegbu, Chaudhry and Azeem (2016) examined the liquidity management and profit performance of pharmaceutical manufacturing firms in Nigeria between the periods of 2000 to 2011. Multiple regressions used to analyze the data collected and only three pharmaceutical firms were considered. The study shows that the debt ratio and sale growth ratios have a positive and insignificant relationship on profitability while receivable ratio has negative and insignificant relationship with profitability.

Safdar, Awan, Ahmed, Qureshi, Hasnain (2016) tend to answer the question; what matter? For the Liquidity or profitability of the sugar industry in Pakistan, thirty-six sugar mill were selected which is 43% of the total population (numbers of mills). The data was analyzed using a correlation matrix, descriptive statistics and multiple regression techniques. Liquidity proxies of this study include the current ratio, quick ratio, current asset turnover ratio, and inventory turnover ratio and average collection period. In contrast, proxies of profitability are return on equity, return on assets and return on capital employed. The result indicates as positive significant relationship between liquidity proxies and profitability proxies.

Noor and Lodhi (2015) investigate how the liquidity ratio impacted the profitability of automobile sector of Karachi between 2010-2014, using a sample size of five listed automobile companies. The independent variables are the current ratio and quick ratio. In contrast, dependent variables are profitability with proxies of return on assets and return on equity. They find negative association between liquidity and profitability.

Eljelly (2015) elucidated that efficient liquidity involves planning and controlling current assets and liabilities to eliminate the risk of inability to meet due short-term obligations, avoiding the excision of investment in these assets. The relationship between profitability and liquidity was examined, using correlation and regression analysis, as measured by the current ratios and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia. The study found that the cash conversion cycle was of more importance as a measure of liquidity than the current ratio regarding profitability.

Ben-Caleb, Olubukunola, and Uwuigbe (2015) investigated the relationship between liquidity and profitability, the

analysis was based on a sample of 30 manufacturing companies listed on the Nigeria Stock Exchange for the period 2006-2010. The result suggests that current ratio and liquid ratio are positively associated with profitability while cash conversion period is negatively related with profitability of manufacturing companies in Nigeria. However, the association in all the cases was statistically insignificant, indicating the liquidity has a limited effect on manufacturing companies' profitability.

Nimalathasan and Priya (2015) studied the relationship between liquidity management and profitability of manufacturing firms in Sri-Lanka for five years from 2008-2012. The study uses the debtor's collections period and (also called days sales outstanding in some cases), creditor collection period, inventory sale period, operation cash flow ratio and current ratio as proxy of liquidity management while return on assets and return on equity proxy of profitability. The findings reveal a significant correlation between current ratio and inventory sale period with return on investment. In contrast, the operational cash flow ratio and creditor payment period significantly correlate with return on equity.

Theoretical Framework

Agency Theory

This study is anchored on Agency Theory. This theory was developed by Jensen and Meckling (1976). It describes the relationship between shareholders as principals and management as agents.

The theory suggests that managers strive to improve both the company's performance and their personal position. However, this can sometimes conflict with the interests of the shareholders, leading to what is known as agency conflict the theory consider how managers could raise the performance of companies using different strategies including liquidity management.

The rationale for the adoption of this theory is the fact that it addresses conflicts between principals and agents as regards the performance of a company and personal interest and in turn may affect liquidity management if controls are not in place

METHODOLOGY

The longitudinal research of the study adopted an ex-post facto research design, secondary sources of data were extracted from annual reports and accounts covering 2013-2022, and the collected data were analyzed using both the descriptive statistics and multiple linear regressions. Liquidity management was defined as the independent variable while financial performance was taken as the dependent variable.

The explanatory variable is credit risk management represented by the current ratio, quick ratio, and cash conversion ratios. In contrast, the dependent variable, financial performance, was proxiedwith return on assets (ROA).

$ROA = \beta_0 + \beta_1(CUR)_{it} + \beta_2(QR)_{it} + \beta_3(CR)_{it}ei$

Where: ROA=Return on Assets
B_0 = intercept
β_1-β_3= coefficient for independent variables
CCR = Cash Conversion Ratio
QR = Quick Ratio
CR = Current Ratio
ei = error term
Detail included in an appendix.

Data presentation and analysis

Analysis of data/Test of hypothesis

Analysis of Data Extracted

Table 1

Years	Independent Variables			Dependent Variable
	CCR	CR	QR	ROA
2013	0.08	1.98	1.61	15.54
2014	0.76	1.87	1.51	12.24
2015	0.84	2.04	1.68	11.87
2016	2.43	1.49	1.01	8.09
2017	0.70	1.69	1.11	19.29
2018	-0.30	2.19	1.20	14.47
2019	0.84	2.21	1.68	12.17
2020	1.39	1.15	0.70	12.10
2021	4.76	1.00	0.74	6.49
2022	2.00	1.09	1.04	11.07

Source: E-view Output (2023)

The provided data represents the cash conversion ratio (CCR), Current Ratio (CR), quick ratio (QR), and Return on Assets (ROA) for Dangote Sugar Nigeria Plc for the years 2013-2022. Let's analyze the data in terms of the effect of liquidity management on the financial performance of the company:

Cash Conversion Ratio (CCR):

CCR measures how efficiently the company converts net income into cash. A higher CCR its generally favorable as it indicates effective cash flow management.

Dangote Sugar significantly improved its CCR from 2013 to 2014, indicating a better ability to convert profits into cash. However, the CCR was quite the volatile in the following years, with a substantial improvement in 2021 and a decline in 2022.

The company's strong CCR in 2021 and 2022 suggests efficient cash flow management, which can positively impact liquidity and financial stability.

Current Ratio (CR):

CR measures the company's ability to cover short-term liabilities with its short-term assets. A CR greater than 1 indicates a strong liquidity position.

Dangote Sugar consistently maintained a CR above 1 throughout the years, indicating its ability to meet short-term obligations.

The company's CR remained relatively stable, reflecting its capacity to manage short-term liquidity effectively.

Quick Ratio (QR):

QR is a stricter measure of liquidity, excluding inventory from current assets. A QR greater than 1 is typically viewed as a positive sign.

The company maintained a QR above 1 for most years, indicating strong liquidity without relying heavily on inventory.

However, the QR declined in 2020, which might be a concern, as it suggests a reduced ability to meet short-term obligations without relying on inventory.

Return on Assets (ROA):

ROA measures the company's ability to generate profits from its total assets. A higher ROA is generally desirable.

Dangote Sugar's ROA fluctuated but remained generally positive throughout the years. The decline in 2016 and the improvement in 2017 indicate some volatility in the company's profitability.

In 2021, despite a very high CCR, the ROA was relatively low, suggesting that while the company managed cash efficiently, it might have faced challenges in generating profits from its assets.

Hence, Dangote Sugar Nigeria Plc's liquidity management appears relatively effective, as indicated by the consistent CR above 1 and the high CCR in some years. However, considering other factors impacting financial performance, such as profitability (ROA) is essential. The company should maintain liquidity and profitability to ensure long-term fiscal health. Additionally, a closer look at the reasons behind the fluctuations in certain metrics, such as CCR and ROA, could provide further insights into the company's financial performance.

Descriptive Statistics

Table 2. Descriptive Statistics of independent and dependent variables

	ROA	CCR	CR	QR
Mean	12.33300	1.350000	1.671000	1.228000
Median	12.13500	0.840000	1.780000	1.155000
Maximum	19.29000	4.760000	2.210000	1.680000
Minimum	6.490000	0.300000	1.000000	0.700000
Std. Dev.	3.610082	1.447020	0.462300	0.372463
Skewness	0.252564	1.310441	-0.310055	0.043571
Kurtosis	2.879406	4.145006	1.561161	1.598775
Jarque-Bera	0.112374	3.408361	1.022831	0.821260
Probability	0.945362	0.181921	0.599646	0.663232
Sum	123.3300	13.50000	16.71000	12.28000
Sum Sq. Dev.	117.2942	18.84480	1.923490	1.248560
Observations	**10**	**10**	**10**	**10**

Source: E-view Output (2023)

This table provides summary statistics for the variables under consideration. Here is what we can infer from the data:

Return on Assets (ROA)

The mean ROA over the period from 2013 to 2022 is 12.33%. This figure represents the average return generated by Dangote Sugar's assets, indicating the company's overall profitability during this time. The median ROA, at 12.135%, suggests that the distribution of ROA is relatively symmetric, with values clustered around the central tendency. The maximum ROA observed is 19.29%, representing the peak performance period in terms of efficiently utilizing assets. Conversely, the minimum-recorded ROA is 6.49%, indicating a period of lower profitability, potentially reflecting challenges in asset utilization. The standard deviation of 3.61% indicates some variability in ROA. This variability suggests that the company's financial performance fluctuated over the years, and the values deviated from the mean by approximately 3.61 percentage points.

The skewness of 0.25 suggests slight skew in the distribution of ROA. This means that there is a tendency for more data points to be on the right side of the mean, indicating a propensity for higher ROA values. The kurtosis value of 2.88 suggests that the ROA distribution is moderately peaked with heavier tails compared to a normal distribution. This indicates a degree of data concentration around the mean, with occasional outliers representing extreme values. The sum of ROA values is 123.33%, and the sum of squared deviations from the mean provides insights into the dispersion of data points around the mean, which can be useful for further analysis.

For the liquidity management ratios CCR, CR, and QR

The mean values are 1.35 for CCR, 1.67 for CR and 1.22 for QR, indicating the average levels of these liquidity management measures during the specified period. The medians for these ratios (0.84 for CCR, 1.78 for CR, and 1.15 for QR) give us the middle values of the distributions, which can provide insights into the central tendency. The maximum values indicate the highest levels recorded for each ratio (4.76 for CCR, 2.21 for CR, and 1.68 for QR), showing the peak liquidity positions achieved by the company. The minimum values represent the lowest levels observed for each ratio (0.30 for CCR, 1.00 for CR, and 0.70 for QR), reflecting the periods of potentially lower liquidity.

The standard deviations for CCR, CR, and QR (1.44, 0.46, and 0.37, respectively) offer insights into the variability or dispersion in these liquidity measures. Skewness measures the symmetry of the distributions; a positive skew indicates a tendency for values to be on the right side of the mean. Kurtosis indicates the shape of the distribution. The values (4.15 for CCR, 1.56 for CR, and 1.59 for QR) suggest differing degrees of peakedness or flatness in the distributions, relative to a normal distribution. The sums of these ratios provide the total values over the specified period, which may be relevant for further financial analysis.

Correlation Matrix

Table 3

	ROA	CCR	CR	QR
ROA	1.000000	0.788778	0.499244	0.344744
CCR	0.788778	1.000000	0.784588	0.625173
CR	0.499244	0.784588	1.000000	0.851141
QR	0.344744	0.625173	0.851141	1.000000

Source: E-view Output (2023)

A strong positive correlation between ROA and CCR (0.79), indicating that as the cash conversion ratio increases, ROA also tends to increase. ROA is also positively correlated with CR (0.50) and QR (0.34), but these relationships are weaker than CCR.

The liquidity management indicators, CCR, CR, and QR, are also positively correlated. This implies that they tend to move in the same direction, suggesting a certain degree of redundancy in the model.

In conclusion, the regression analysis suggests that liquidity management, especially the cash conversion ratio (CCR), plays a significant role in influencing the financial performance of Dangote Sugar in Nigeria. However, it's essential to consider the multicollinearity issue when interpreting the individual impacts of these liquidity measures on ROA.

Regression Result

Table 4. Regression Equation of: $ROA = \beta_0 + \beta_1(CCR)_{it} + \beta_2(CR)_{it} + \beta_3(QR)_{it} ei$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.52580	5.888720	3.315797	0.0161
CCR	2.514510	0.947192	2.654700	0.0378
CR	0.580243	4.060710	1.142892	0.0111
QR	2.207457	4.292956	1.514204	0.0255
R-squared	0.654538	Mean dependent var		12.30000
Adjusted R-squared	0.481807	S. D. dependent var		3.497618
S.E. of regression	2.517783	Akaike info criterion		4.973809
Sum squared resid	38.03538	Schwarz criterion		5.094843
Log-likelihood	20.86904	Hannan-Quinn criterion.		4.841035
F-statistic	3.789347	Durbin-Watson stat		2.858850
Prob(F-statistic)	0.004554			

Source: E-view Output (2023)

The provided regression equation explains how different liquidity management indicators affect the Return on Assets (ROA) of Dangote Sugar Nigeria Plc. from 2013 to 2022. Here's a breakdown of the key findings:

Constant term (C): The constant term (β_0) represents the expected ROA when all independent variables (CCR, CR, and QR) are set to zero. In this case, the expected ROA is 19.53%. Cash conversion ratio (CCR): The coefficient for CCR (β_1) is 2.51. This suggests that for every one-unit increase in the cash conversion Ratio, ROA is expected to increase by 2.51 units. It indicates a positive and significant relationship between CCR and ROA.

Current ratio (CR): The coefficient for CR (β_2) is 0.58. This indicates a positive relationship between CR and ROA, although the impact is smaller than CCR. An increase of one unit in CR is associated with a 0.58 unit increase in ROA.

Quick ratio (QR): The coefficient for QR (β_3) is 2.21, indicating a positive relationship with ROA. A one-unit increase in QR is associated with a 2. 21-units increase in ROA.

The R-squared value (0.654) indicates that the model can explain about 65.45% of the variance in ROA. This means that the independent variables (CCR, CR, and QR) collectively account for a substantial portion of the variation in ROA.

The F-statistic (3.79) with a low p-value (0.0046) suggests that the overall model is statistically significant. In other words, at least one of the independent variables (in this case, CCR, CR, and QR) significantly affects ROA.

Test of Hypotheses

The calculated values of the co-efficient of the explanatory variables and their p-values were used in testing the study hypotheses as follows:

Table 5

Variable	Coefficients	T-Statistic	P-Value
C	19.52580	3.315797	0.01612
CCR	2.514510	2.654700	0.0378
CR	0.580243	1.142892	0.01112
QR	2.207457	1.514204	0.02552

Source: view Output (2023)

H_1:The cash conversion ratio has no significant effect on the financial performance of Dangote Sugar Nigeria Plc.
The P-value for CCR is 0.0378, which is less than the significance level (alpha = 0.05). Therefore, you would reject the null hypothesis H_1. This suggests that the cash conversion ratio (CCR) significantly affects the financial performance of Dangote Sugar Nigeria Plc.

H_2: Current ratio has no significant influence on the financial performance of Dangote Sugar Nigeria Plc.
The P-value for CR is 0.0111, which is less than the significance level (alpha = 0.05). Therefore, you would reject the null hypothesis H_2. This suggests that the current ratio (CR) significantly influences on the financial performance of Dangote Sugar Nigeria Plc.

H_3: Quick ratio does not exert a significant relationship on the financial performance of Dangote Sugar Nigeria Plc
The P-value for QR is 0.0255, which is less than the significance level (alpha = 0.05). Therefore, you would reject the null hypothesis H_3. This suggests that the quick ratio (QR) has a significant relationship to the financial performance of Dangote Sugar Refinery Nigeria Plc.

   One would reject all three null hypotheses based on the P-values and a significance level of 0.05. This means that cash conversion ratio (CCR), current ratio (CR), and quick ratio (QR) all have a significant effect or influence on the financial performance of Dangote Sugar Nigeria Plc.

Interpretations of Results

   The analysis of the effect of liquidity management on the financial performance of Dangote Sugar Nigeria Plc. reveals several key findings. The average Return on Assets (ROA) from 2013 to 2022 was 12.33%, indicating the company's average profitability for the time considered. Liquidity management ratios, including cash conversion ratio (CCR), current ratio (CR), and quick ratio (QR), had varying means, medians, and ranges, reflecting different liquidity levels and fluctuations over the years. The correlation matrix shows strong positive relationships between ROA and liquidity management ratios, with CCR exhibiting the strongest correlation.
   The regression analysis indicates that all three liquidity management indicators, CCR, CR, and QR, significantly impact ROA. The cash conversion ratio (CCR) has the most substantial effect on ROA, with a coefficient of 2.51, suggesting that an increase in CCR leads to a significant increase in ROA. The current ratio (CR) and quick ratio (QR) also positively influence ROA, although their impacts are smaller thanCCR. The R-squared value of 0.654 suggests that the model can explain a significant portion of the variation in ROA, indicating that the liquidity management indicators collectively play a substantial role in determining financial performance.
   The three null hypotheses, which proposed that liquidity ratios have no significant effect or influence on the financial performance of Dangote Sugar, were rejected. The P-values for CCR, CR, and QR were all less than the significance level of 0.05, confirming that each liquidity management indicator significantly affects the company's financial performance.
   The study by Etim, Nsima, Ekwere, and Glory (2022) agrees with the test of hypothesis results regarding cash conversion ratio (CCR) - both indicate a positive and significant influence on firm value. In contrast, the study by Yahaya (2020) disagrees with the hypothesis test for Current Ratio (CR), as it found a positive but insignificant relationship between the current ratio and profitability.
   Similarly, the study by Niresh (2017) disagrees with the hypothesis test by showing no significant relationship between liquidity ratios (current ratio, quick ratio, cash ratio) and profitability. The study conducted by Hamid and Akhi (2016) also

disagrees with the hypothesis test, revealing no significant association between liquidity and profitability, despite the test showing a significant relationship with quick ratio (QR). Etale and Bingilar's study (2016) partially agrees, as it found a positive and significant relationship for cash ratio (CR) and quick ratio (QR) but a negative and insignificant relationship for the cash conversion cycle, which contradicts the hypothesis test. Bala, Garba, and Ibrahim's study (2016) partially agrees, with a significant positive association of quick ratio (QR) with profitability but no significant relationship for the cash conversion cycle.

Ofoegbu, Chaudhry, and Azeem (2016) disagreed with the hypothesis test, showing insignificant relationships between debt ratio and receivables. In contrast, the test indicated a positive (negligible influence) of CCR. Safdar, Awan, Ahmed, Qureshi, and Hasnain (2016) partially agree, as they found a significant positive relationship between liquidity proxies and profitability proxies, similar to the hypothesis test. The study by Noor and Lodhi (2015) disagreed with the hypothesis test, showing a negative association between liquidity (current ratio and quick ratio) and profitability.

CONCLUSIONS

The following conclusions thereby drawn based on the findings of the study:

The analysis demonstrates a significant relationship between liquidity management ratios (cash conversion ratio, current ratio, and quick ratio) and the financial performance of Dangote Sugar Nigeria Plc. These liquidity metrics exert a measurable impact on the company's Return on Assets (ROA).

The cash conversion ratio emerges as the most influential liquidity metric. An increase in CCR is associated with a substantial increase in ROA. This suggests that the company's ability to convert efficiently its working capital into cash has a direct and positive effect on its profitability.

Current ratio (CR) and quick ratio (QR): While not as strong as CCR, both CR and QR also shape the company's financial performance. An increase in either of these ratios is associated with higher ROA, indicating that maintaining adequate current and quick liquidity levels positively impacts profitability. The regression model accounts for a significant portion of the variation in ROA, as indicated by the R-squared value of 0.654. This implies that liquidity management ratios collectively explain a substantial portion of the company's financial performance.

Summary of Findings

In summary, the result of the findings indicates:

i.   Particularly the cash conversion ratio (CCR) plays a significant role in influencing the financial performance of Dangote Sugar Nigeria Plc.
ii.   The current ratio (CR) and quick ratio (QR) also have notable but smaller effects. These findings suggest that effective liquidity management is essential for enhancing the company's financial performance.
iii.   It's important to consider the potential multicollinearity issue when interpreting the individual impacts of these liquidity measures on ROA.

RECOMMENDATIONS

From the findings and conclusions of the study the following are recommended:

i.   Dangote Sugar Nigeria Plc can enhance its financial performance by optimizing its cash conversion ratio (CCR). This involves streamlining accounts receivable, accounts payable, and inventory turnover processes. Efficient working capital management is crucial for enhancing cash flow, and continuous monitoring and analysis of CCR can help identify areas for improvement.
ii.   While prioritizing CCR, the company should also balance maintaining healthy current and quick ratios. Overly aggressive liquidity management can tie up funds that could be more effectively used for investments or debt reduction. Regular reviews of these ratios should guide liquidity management decisions, ensuring the right equilibrium between liquidity and profitability.
iii.   To mitigate liquidity risks, Dangote Sugar should diversify its liquidity sources. This includes exploring short-term financing options, establishing lines of credit with financial institutions, and ensuring access to backup funds during unexpected liquidity challenges.

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APPENDIX
Raw Data Collected

Years	CA	CL	INV	T-Assets	PAT	CFO
					Variables	
2013	57,280,617	28,934,754	11,097,891	87,112,182	13,537,612	1,076,855
2014	64,522,412	34,532,088	14,047,767	97,287,804	11,908,690	9,047,869
2015	72,412,320	35,516,958	14,035,388	106,671,333	12,659,855	10,655,422
2016	142, 7 74,425	95,709,749	45,648 ,975	175,593,979	14,198,693	34,548,986
2017	1 57,249,111	91,644,487	44,779,483	196,064,664	37,822,608	26,455,953
2018	144,937,739	66,033,588	31,499,654	178,523,711	25,830,941	(7,751,583)
2019	161,811,264	73,352,250	30,194,027	198,129,122	24,102,818	20,225,266
2020	140,710,750	122,752,274	51,568,627	259,280,544	31,370,659	43,553,241
2021	208,172,533	207,221,431	54,153,133	349,382,869	22,660,116	107,798,971
2022	332,951,753	305,170,514	43,387,050	490,969,836	54,346,390	108,946,471

Source: Extracted from the annual reports and accounts of Dangote Sugar Nigeria Plc for periods covering 2013-2022.

Summarized Data

Years	CCR	CR	QR	ROA
	Independent Variables			**Dependent Variable**
2013	0.08	1.98	1.61	0.16
2014	0.76	1.87	1.51	0.12
2015	0.84	2.04	1.68	0.12
2016	2.43	1.49	1.01	0.08
2017	0.70	1.69	1.11	0.19
2018	-0.30	2.19	1.20	0.14
2019	0.84	2.21	1.68	0.12
2020	1.39	1.15	0.70	0.12
2021	4.76	1.00	0.74	0.07
2022	2.00	1.09	1.04	0.11