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Cash Flow Management and Financial Performance of Selected Listed Companies in Nigeria

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Abstract: This study was aimed at examining the influence of cash flow management on financial performance of selected listed companies in Nigeria. This was premised on the conflicting results and assertions in the literature in respect to the influence of cash flow management and financial performance of entities. *Ex-post facto* research design was adopted for the study using secondary data of sixty-three (63) selected listed companies in the Nigerian Stock Exchange (NSE) for the period 2013 to 2019. The nature of data was panel data. The dependent variable for financial performance is Return on Asset (ROA), while independent variables was cash flow management decomposed into Operating Cash Flow Margin (OCFM), Operating Cash Flow Ratio (OCFR), Investing Cash Flow Ratio (ICFR), Financing Cash Flow Ratio (FCFR) and Net Cash Flow Ratio (NCFR). The descriptive and inferential statistics were used for data analyses. Results showed that OCFM, OCFR, ICFR and NCFR had positive and significant influence on Financial Performance (ROA) and FCFR had a negative and insignificant influence on financial performance (ROA) of selected listed companies in Nigeria. It was recommended that managers of entities and policy makers, financial consultants and regulatory agencies avail themselves of the core variables of cash flow management used in this study to understand their nexus and to improve in their statutory functions to enhance long-term sustainability of entities.

Keywords: Return on Asset (ROA) Operating Cash Flow Margin, Operating Cash Flow Ratio, Investing Cash Flow Ratio, Financial Cash Flow Ratio and Net Cash Flow Ratio.

1. Introduction

Quoted entities operating in an economy are expected to report to the various stakeholders. The report is usually prepared by management of

companies which should indicate the level of accountability of the board of directors. These reports prepared and published annually consists of financial statements made up of statement of financial position, statement of profit or loss and other comprehensive income, statement of changes in equity, statement of cash flows and notes to the accounts (disclosures) which often indicate the accounting policies adopted by a company and the composition of each items presented on financial statements.

The International Accounting Standard (IAS) No. 7 regulate the cash flow statement preparation to show the cash generated and as well as how they are utilized in an accounting year. The statement is fundamental to an entity because it is often used to assess how cash are generated and utilized in an accounting year (Soet, Muturi & Oluoch, 2018). It provide information used in evaluating the profitability of a company to adequately generate cash and cash equivalent. The basic components of statement of cash flows are cash flows from operating activities, cash flows from investing activities and cash flows from financial activities as stated in the international standard. These components are required to be used effectively in managing the cash flows. The purpose of cash flow management is often targeted towards achieving optimum liquidity position in an entity that is capable of affecting profitability positively. In attaining optimum liquidity position a a result of cash flow management, there are certain indicators that may regularly be used by managers to monitor cash generated and used. These include operating cash flow margin, operating cash flow ratio, investing cash flow ratio, financing cash flow ratio and as well as net cash flow ratio (Ogbeide & Akanji, 2017). When profitability of a company is improved as a result of cash flow management, it could be said that financial performance of the entity is growing as well.

Financial performance is regarded as indicators that show the overall health of an entity. It indicates the extent to which strategies and policies of managers have been accomplished (Alslehat & Al-Nimer, 2017). It is a measure of assessment of a company's ability to utilize its assets in the generation of profits as well as wealth maximization. Improvement in financial performance usually guarantee growth in terms of size of assets and other accounting parameters. In achieving growth in financial performance, greater efforts are usually devoted by managers in determining what to be done, how it should be done and when it should be done. Cash flow management is one of these strategies managers often formulated. Assessing the influence of cash flow management on financial performances of listed entities is very fundamental. Despite the importance of cash flow management, the outcome seems not to be reflected on financial

performance of entities, particularly for Nigeria companies. Hence, the need for the present study.

1.1. *State of the Problem*

The statement of cash flow usually replicates the policies formulated by managers in ensuring that optimum liquidity position is attained for their entities. Thus, cash flow management is often expected to achieve optimum liquidity position that can affect financial performance positively. However, some of the previous studies showed that cash flow management had positive influence on financial performance of entities while others reported negative influence. The conflicting outcomes call for further investigation using panel data for listed companies in Nigeria. This study is relevant to shedding light on financial performance of listed companies since the capital markets now operate on global scale or cross-border basis and because investors invest to maximize their wealth.

1.2. *Objective of the Study*

The main objective of the study was to ascertain the influence of cash flow management on financial performance on selected listed companies in Nigeria. Specific objectives are to:

i) examine the influence of operating cash flow margin on Return on Assets (ROA) of selected listed companies in Nigeria.

ii) determine the influence of operating cash flow ratio on Return on Assets (ROA) of selected listed companies in Nigeria.

iii) evaluate the influence of investing cash flow ratio on return on Assets (ROA) of selected listed companies in Nigeria

iv) ascertain the influence of financial cash flow ratio on Return on Assets (ROA) of selected listed companies in Nigeria.

v) determine the influence of net cash flow ratio on Return On Assets (ROA) of selected companies in Nigeria.

1.3. *Hypotheses of the Study*

The hypotheses formulated from the objectives of the study and stated in null forms are:

Ho$_1$: Operating cash flow margin does not significantly influence Return on Assets (ROA) of selected listed companies in Nigeria.

Ho$_2$: Operating cash flow ratio does not significantly influence Return on Assets (ROA) of selected listed companies in Nigeria.

Ho$_3$: Investing cash flow ratio does not significantly influence Return on Assets (ROA) of selected listed companies in Nigeria.

Ho$_4$: financing cash flow ratio does not significantly influence Return on Assets (ROA) of selected listed companies in Nigeria.

Ho$_5$: Net cash flow ratio does not significantly influence Return on Assets (ROA) of selected listed companies in Nigeria.

1.4. Significance of the Study

The outcome of this study is expected to benefit the managers of listed companies in Nigeria and elsewhere, in planning and controlling of cash flows of their entities in line with cash generated; that is formulation of policies on effective and efficient management of cash flows. The shareholders and other stakeholders of selected listed companies would have an understanding of how their funds are managed to generate wealth and secure their investments. It would also add to existing literature for further researches in accounting, economics and finance. The rest of the paper covers review of related literature, methodology, results and findings, and summary and conclusion.

2.   Review off Related Literature

The review of related literature is carried out in three sub-headings; conceptual review, theoretical review and empirical review.

2.1. Conceptual Review

Conceptually, overview of financial performance, measurement of financial performance, cash flow management and factors that influence financial performances are discussed.

2.1.1. Overview of Financial Performance

Financial performance according to Odalo and Achoki (2016) is the results derived from invested funds of shareholders and debt holders usually express in monetary terms. Akenga (2017) and Efuntade and Akimola (2020) says financial performance is usually understood to be indicators that define the entire health of a company in monetary terms. Financial performance is also perceived to be growth or decline in accounting attributes (Azam & Haider, 2011; Dogarawa & Maude, 2018). The concept is often used to explain the level of progress attained from the strategies and policies formulated by top management of companies; decline in financial performance proxies, could mean that the strategies formulated by management may not have accomplished the purposes targeted (Hossain & Ali, 2012; Enekwe, Agu & Eziedo, 2014), while, improvement in financial performance indicators is a pointer to the fact strategies and policies of management of companies may be yielding meaningful outcomes positively (Priya & Nimalathasan, 2013; Ndubuisi, Juliet & Onyema, 2019).

2.1.2. Measurement of Financial Performance

Measurement of financial performance in terms of profitability may be achieved using ratios or indicators which include gross profit ratio, operating profit ratio, profit before tax ratio, net profit ratio, return on assets (ROA) (Ghodrati & Abyak, 2014; Gadzo & Asiamah, 2018). From the accounting and finance perspective, the measurement of financial performance is usually from the profitability angle using the above ratios among others. Although, non-financial performance indicators have recently come to limelight such as market share, product or service quality, after-sales services, and so on.

2.1.3. Overview of Statement of Cash Flows

The inclusion of statement of cash flows as an integral part of financial statements by the accounting profession is aimed at enhancing the quality and content of financial reporting. It is prepared by management of entities to show how cash are generated and utilized in an accounting period and reflects the cash position which explain the liquidity of a company than the statement of profit or loss and other comprehensive income; as a company may report huge profits but still faces liquidity problems (Azam & Haider, 2011; Aghaei & Shakeri, 2012; Aren & Sibindi, 2014; Abughniem, Al-Aishat & Hamdam, 2020).

Statement of cash flows may be prepared using either direct or indirect methods depending on the ability to track down all receipts and payments and aggregating them to arrive at net cash flows from operating activities. If cash receipts and payments to customers and other recipients of services can be deduced, then the direct method can be used, otherwise the indirect method may have to apply. The statement of cash flow has three main headings – cash flow from operating activities, cash flow from investing activities and cash flow from financing activities. Whichever method is adopted to prepare the statement of cash flows, the bottom line is always same under the two methods – cash and cash equivalent for the reporting period (Rahman & Sharma, 2020, Khushi *et al.*, 2020).

2.1.4. Cash Flow Management and Factors of Cash Flow Management

The focus of cash flow management of an entity anchored how cash is managed in the three activities that form the core activities of an entity. It is the planning and controlling processes of the cash position maintained by an entity. In almost all entities, cash flow management philosophies are usually in line with that of liquidity or working capital management (Odala & Achoki, 2016). Cash flow management policies may

be formulated to link short-term financial plans with long-term strategies for the long-run survival of entities. It is fundamentally the optimization of cash resources to achieve both short and long-run objectives of entities.

In financial accounting, reporting and finance literature, some ratios used in cash flow management are indicators that contain factors directing how well organizations had performed or are performing. These ratios include Operating Cash Flow Margin (OCFM), Operating Cash Flow Ratio (OCFR), Investing Cash Flow Ratio (ICFR), Financing Cash Flow Ratio (FCFR) and Net Cash Flow Ratio (NCFR). These variables show the connection between statement of cash flows, statement of profit or loss and other comprehensive income, and statement of financial position. Each of the variable or factor in the ratios give the nexus between cash flow management and financial performance, and hence can be used to explain an entity's sustainability in the short and long-run. The variables are also influenced by firm size, company age, tangibility of assets as well as leverage.

2.2. Theoretical Review

The agency theory forms the theoretical underpinning of this study. Formulated by Jensen and Meckling (1976) explains the relationship between an agent (management) and the principal (Shareholder). It is expected the agents act in a manner beneficial to the owners of the entity. For the fact that managers, known as agents, are appointed by shareholders, are expected to run and manage operation of entities on behalf of their owners profitability. This simply means that all the decisions making, strategies formulation and implementation are entrusted to the agents who are the managers of companies. The responsibility for ensuring that both profitability and shareholders' wealth maximization are on the shoulders of the managers. The empirical investigation of the influence of cash flow management and financial performance of the listed companies would show the extent to which the interest of the entity shareholders is considered when formulating operational policies in regard to cash flow management by the managers of listed companies in Nigeria.

2.3. Empirical Review

Selected empirical review previously conducted are reviewed in this section using a tabular approach.

2.4. Gap in the Empirical Literature

From the reviewed empirical studies, as at the time of this investigation, no recent study adopted the variables used in the present study to the best

Table 2.1: Summary of Empirical Review

S/N	Author(s)	Topic/Main Objective	Methodology	Finding(s)
1	Darabi, Adeli and Torkamani (2012)	The effect of cash flow shocks on capital and asset structure: Evidence from Tehran Stock Exchange (TSE)	The study covered 2005 to 2010. Data were secondary, analysed using Pearson correlation and simple linear regression technique.	Results showed that there was a meaningful relationship among the operating cash flows, capital and asset structure.
2.	Aren and Sibindi (2014)	Cash flow management practices: An empirical study of small businesses operating in South African retail sector	The survey research design was employed using questionnaire method to collect data which were analysed using descriptive and inferential statistics.	Results show cash flow management has a positive and significant influence on the survival of a business, particularly small businesses.
3.	Ali and Mukhango 92016)	Effects of cash flow management on financial performance of small and medium enterprises in Mogadishu, Somalia (A case study of Bakara Market).	Survey research design involving use of questionnaire to collect data. Data were analysed using Linear regression technique.	From the analysis, it was discovered that the relationship between cash control, cash planning and financial performance were significant at 5 per cent level.
4.	Alshehat and Al-Nimer (2017)	Empirical study of the relationship between cash flow management and financial performance of Jordanian Insurance Companies	*Ex-post facto* research design was adopted using 23 JICs with data covering the period 2009 to 2013. Data were analysed using regression technique	The outcomes of the analysis indicated that net cash flows from operating activities influenced return on asset positively and significantly, and net cash flow from investing activities was found to play a positively and significant role on the financial performance of the entities studied.
5.	Ogbeide and Akanji (2017)	A study on the relationship between cash flow and financial performance of insurance companies: Evidence from a developing economy.	Using time series data for the period 2009-2014, twenty-seven (27) listed insurance companies firms in Nigeria were selected as sample size. The researchers used descriptive and inferential statistics as analytical tools.	The findings revealed that cash flow from operating activities was observed to significantly increase financial performance of insurance companies in the period examined. Cash flow from financing activities was found to increase the financial performance of the sampled insurance firms but was not statistically significant.

6.	Ogbeide, Eragbhe, Ololade and Akanji (2017)	Cash flow and financial performance of insurance companies: Empirical evidence from Nigeria.	The study used both descriptive and inferential statistics to determine the relationship among the variables. It also employs the series of diagnostic tests to ensure stability of the time series data used as well as to ensure the model meets the assumptions of OLS.	From the analysis, it was observed that cash flow from operating activities had a positive and significant influence on financial performance of the insurance companies in the period examined.
7.	Eton, Uwonda, Mnesi, Ogwel and Obote (2019)	Cash management and financial performance of business firms in northern Uganda: A case of Lira Distinct.	A cross sectional survey design was adopted, and data were collected through the use of structured and closed questionnaire. Descriptive statistics were used to analysed the data.	Business owners who took part in the study confirmed high abilities in managing cash receivables, holding inventories and properly generating sufficient cash for meeting immediate obligations.
8.	Nangih, Ofor and Onuorah (2020)	Cash flow management and financial performance of quoted oil and gas firms in Nigeria	Data were obtained from the annual reports of five selected listed firms for the period 2013 to 2018 and analysed using correlational and multiple regression techniques.	The results obtained established that cash flows from operating and investing cash flows had negative and insignificant relationship with profitability whereas cash flow from financing activities had positive and significant influence on firm performance in the oil and gas sector.
9.	Rahman and Sharma (2020)	Cash flows and financial performance in the industrial sector of Saudi Arabia	The sourced data were analysed using descriptive and regressional analytical tools.	The result reported a positive and significant association between financial performance (ROA and ROE) and operating cash flows (CFOs) and a negative association for size and leverage.

Source: Researchers' Compilation (2022)

of the researchers knowledge. So this study would contribute to the literature by examining the influence of cash flow management variables on financial performance of listed companies in Nigeria with independent variables as operating cash flow margin, operating cash flow ratio, investing cash flow ratio, financial cash flow ratio and net cash flow ratio with Return on Asset (ROA) as dependent variable.

3. Methodology and Research Design

Ex-post facto research design using secondary data mined from published annual reports of listed sampled companies was adopted. Sixty-three (63) entities were selected out of eighty-six (86) listed companies covering consumer goods, industrial goods, oil and gas, healthcare, service and conglomerate sectors of the Nigerian economy. The selected listed firms were purposively selected based on those with relevant data within the study period of 2013 to 2019 whose shares were traded on the floor of Nigerian Stock Exchange (NSE) as at December 2019.

3.1. Nature of Data and Method of Data Collection

The data for the study are panel in nature for the period selected. They are obtained from secondary sources (published annual reports) of the selected sampled entities.

3.2. Theoretical Specification of Models

The theoretical specification of models that linked the variables of cash flow management to financial performance is presented as Figure 3.1.
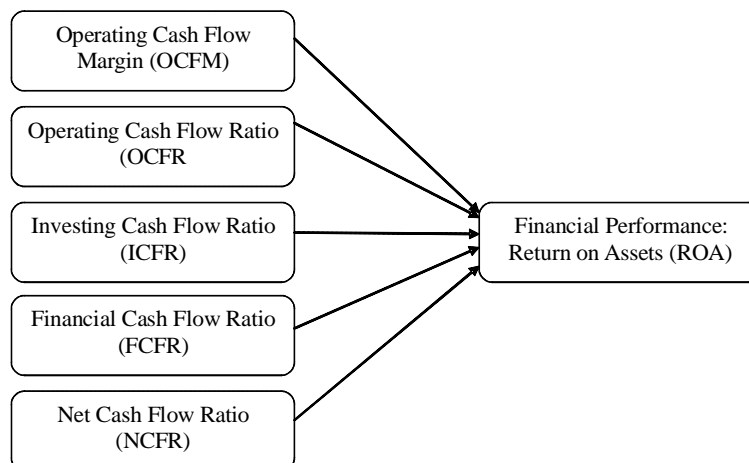

Figure 3.1: Theoretical model of the study

Source: Researchers' Conceptualization (2022)

3.3. Empirical Specification of Models

The core variables of this study are shown on the theoretical specification of the models which shows five (5) independent and one (1) dependent variables. The empirical models are in linear regression form in line with the objectives of the study as follows:

$$ROA_{ij} = \beta_o + \beta_1 OCFM_{ij} + e_t \qquad \text{Equation 3.1}$$
$$ROA_{ij} = \beta_o + \beta_2 OCFR_{ij} + e_t \qquad \text{Equation 3.2}$$
$$ROA_{ij} = \beta_o + \beta_3 ICFR_{ij} + e_t \qquad \text{Equation 3.3}$$
$$ROA_{ij} = \beta_o + \beta_4 FCFR_{ij} + e_t \qquad \text{Equation 3.4}$$
$$ROA_{ij} = \beta_o + \beta_5 NCFR_{ij} + e_t \qquad \text{Equation 3.5}$$

Where;

i = Number of companies; j = Number of years; β_o = intercept of ROA; β_1, β_2, β_3, β_4 and β_5 = Coefficient of each of the independent variables; e_t = Random error term.

3.4. Measurement and Description of Variables

The variables for the study are measured and described here with the *apriori* expectation.

Table 3.1: Variable Description

S/N	Variable	Abbreviation	Measurement	Apriori
i.	Financial Performance	ROA	This is measured as profit for the year divided by total assets of an entity in an accounting period.	
ii.	Operating cash flow margin	OCFM	This was measured as net cash flows from operating activities divided by total revenue in an accounting period.	Positive
iii.	Operating cash flow	OCFR	This was measured as net cash flow from operating activities divided by net current assets in an accounting period of time for a company	Positive
iv.	Investing cash flow ratio	ICFR	This was measured as net cash flows from investing activities divided by non-current assets in an accounting period of time for a company	Positive

contd. table 3.1

S/N	Variable	Abbreviation	Measurement	Apriori
v.	Financial cash flow rate	FCFR	This was measured as net cash flows from financing activities divided by long-term capital in an accounting period of time for a company.	Positive
vi.	Net cash flow Ratio	NCFR	This was measured as total net cash flows from all activities divided by total assets in an accounting period of time for a company.	Positive

Source: Researchers' Compilation (2022).

3.5. Method of Data Analysis

The data analysis were carried out using descriptive and inferential statistics. The tests ran for the study included multi-collinearity check, descriptive statistics, correlation analysis, Hausman test for Random and Fixed effects, to determine the suitable model. The regression statistical tools used are R^2, Adjusted R^2, t-statistic and F-statistic. Analyses were conducted at 5% level of significance.

4. Results and Findings

The results of the analyses are presented on tables and discussed in this section of the paper.

4.1. Descriptive Statistics

To examine the nature of the data collected in relation to the variables, the descriptive statistics are presented on Table 4.1.

Table 4.1: Descriptive Statistics

Variables	N	Range	Min.	Max.	Mean	Std.
ROA	440	3.31	-1.80	1.510	0.0134	0.1783
OCFM	440	81.82	-75.48	6.340	0.1113	3.7552
OCFR	440	192.71	-152.74	39.97	0.5287	8.7323
ICFR	440	38.12	-31.74	6.370	-0.1055	1.5725
FCFR	440	24.57	-18.14	6.430	-0.0776	1.0280
NCFR	440	1.870	-1.030	0.840	-0.0034	0.1522

Source: Researchers' Computation (2022).

The total observations of four hundred and forty (440) were obtained by multiplying the number of listed companies studied by the years from which data were collected for the study. The overall results indicates a wide variation between the range, minimum, maximum, mean and standard deviation. The

highest range value of 192.71 is recorded for OCFR and the lowest value of 1.870 was recorded for NCFR. This also applies to the minimum values with OCFR showing the least value of -152.74 and NCFR -1.030. On the whole, all the variables studied disclosed negative minimum value. The trend also applies to maximum values, mean and standard deviation.

4.2. Multi-Collinearity Check

To ascertain the existence of multi-collearity in all the independent variables of the study, the Tolerance and Variance Inflation Factor (VIF) were calculated for each variable and presented on Table 4.2.

<div align="center">Table 4.2: Multi-Collinearity Check</div>

Variable	Tolerance	Variance Inflation Factor (VIF)
OCFM	0.948	1.054
OCFR	0.999	1.001
ICFR	0.960	1.042
FCFR	0.980	1.020
NCFR	0.989	1.011

*Dependent Variable = ROA
Source: Researchers' Computation (2022)

From Table 4.2, it was discovered that there was no multi-collinearity in each of the independent variables as the tolerance for each was greater than 1 benchmark and the VIF was not greater than ten (10) as well. This indicated that the relationship between one independent variable and the other in the linear regression model was insignificant. This is further explained by the correlation matrix.

4.3. Correlation Matrix

An additional check of the existence of multi-collinearity among the pairs of two independent variables was carried out on the data set using correlation analysis as presented on Table 4.3.

<div align="center">Table 4.3: Correlation Analysis</div>

Variable	ROA	OCFM	OCFR	ICFR	FCFR	NCFR
ROA	1.000	0.366	0.436	0.362	-0.045	0.197
OCFR		1.000	-0.008	-0.194	0.113	0.044
OCFR			1.000	-0.017	-0.014	0.008
ICFR				1.000	-0.020	0.037
FCFR					1.000	0.087
NCFR						1.000

*Dependent Variable = ROA
Source: Researchers' Computation (2022)

From Table 4.3, it was established that the level of association that existed between one independent variable and the other was below 50%, consequently, indicated the non-existence of multi-collinearity.

4.4. Test of Hypotheses

Regression analysis was conducted for each of the hypotheses stated, using panel regression technique. The Hausman Test result which compares the random effect and fixed effect, showed that the fixed effect model was suitable for the analyses as well as the test of hypotheses because the cross-section random test (p-value of chi-square)) are not significant (p-value < 0.05).

4.4.1. Hypothesis One

The fixed effect regression results are presented on Table 4.4

Table 4.4: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.011195	0.007040	1.590289	0.1126
OCFR	0.020100	0.001998	10.06240	0.0000
		Effects Specification		
Cross-Section Fixed (dummy variables)				
R-Squared		0.412970		
Adjusted R-Squared		0314612		
S.E. of regression		0.147597		
Sum Squared resid		8.191104		
Log Likelihood		252.0868		
F-Statistic		4.198617	Durbin-Watson Stat	1.530889
Prob. (F-statistic)		0.0000		

*Dependent Variable = ROA
Source: Researchers' Computation (2022)

From the result, OCFM had a positive and significant influence on ROA (p<0.05) of the selected listed companies in Nigeria. It indicated that a percentage increase in nOCFM resulted in 201% increase in ROA. The result is in compliance with the *apriori* expectation and in line with the findings of Soet et al (2018) in study of mutual funds companies in Kenya. The Durbin-Watson (DW) statistic of 1.5309 indicated that there was no first-order autocorrelation in the model. R^2 value of 41.3% explains that variations in ROA was caused by OCFM. F-ratio (4.199, prob <0.05) calculated indicated that the model was significant. Hence, the null hypothesis that "operating cash flow margin does not significantly influence ROA of selected listed companies in Nigeria" was rejected and the alternate upheld, as both t-statistic and p-value are significant.

4.4.2. Hypothesis Two

The fixed effect regression results computed are presented on Table 4.5

Table 4.5: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.011874	0.007851	1.512488	0.1312
OCFR	0.002937	0.000977	3.005895	0.0028
		Effects Specification		
Cross-Section Fixed (dummy variables)				
R-Squared	0.272376			
Adjusted R-Squared	0.150460			
S.E. of regression	0.164324			
Sum Squared resid	10.15288			
Log Likelihood	204.8508			
F-Statistic	2.234134	Durbin-Watson Stat 1.560757		
Prob. (F-statistic)	0.000002			

*Dependent Variable = ROA
Source: Researchers' Computation (2022)

From Table 4.5, OCFR had a positive and significant influence on ROA ($p < 0.05$) of the select listed companies in Nigeria. It showed that a percentage increase in OCFR resulted to 0.29% increase in ROA. The constant value showed that ROA was 1.19% as OCFR was held constant and insignificant ($p > 0.05$). the Durbin-Watson (DW) statistic of 1.5608 indicated that there was no first-order auto correlation in the model. R^2 indicated that 27.24% variation in ROA was caused by the influence of OCFR. F-ratio (2.234, $P < 0.05$) calculated indicated that the model was significant and in line with the *apriori* expectation. The outcome was in line with Alslehat and Al-Nimer (2017) who found similar result for Jordanian Insurance Companies as well as the findings of Ogbeide and Akanji (2017). The null hypothesis, which states that operating cash flow ratio does not significantly influence financial performance of selected listed companies in Nigeria, was rejected, as both the t-statistic and p-value were statistically significant.

4.4.3. Hypothesis Three

The fixed effect regression results computed are presented on Table 4.6.

Table 4.6: Fixed Regression Output

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.014590	0.007905	1.845677	0.0657
ICFR	0.011015	0.005415	2.034119	0.0226

contd. table 4.6

Effects Specification		
Cross-Section Fixed (dummy variables)		
R-Squared	0.263001	
Adjusted R-Squared	0.139515	
S.E. of regression	0.165379	
Sum Squared resid	10.28370	
Log Likelihood	202.0343	
F-Statistic	2.129797	Durbin-Watson Stat 1.591395
Prob. (F-statistic)	0.000008	

*Dependent Variable = ROA
Source: Researchers Computation (2021)

From Table 4.6, ICFR had a positive and significant influence on ROA (p<0.05) of the selected listed companies in Nigeria. The result showed that a percentage increase in ICFR resulted to 1.10% increase in ROA. The Durbin-Watson (DW) statistic of 1.5914 indicated that there was no first-order auto correlation in the model. R^2 indicated that 26.30 variation in the ROA was caused by the influence of ICFR. The F-ratio (2.130, prob. <0.05) calculated indicated that the model was significant. The result was in compliance with the *apriori* expectation and consistent with the findings of Alslehat and Al-Nimer (2017) in their study of Jordanian insurance companies. The null hypothesis was rejected.

4.4.4. Hypothesis Four

The fixed effect regression results computed are presented on Table 4.7.

Table 4.7: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.012340	0.007923	1.557589	0.1202
FCFR	-0.014016	0.008221	-1.704870	0.0890
Effects Specification				
Cross-Section Fixed (dummy variables)				
R-Squared	0.260607			
Adjusted R-Squared	0.136719			
S.E. of regression	0.165648			
Sum Squared resid	10.31711			
Log Likelihood	201.3207			
F-Statistic	2.103572	Durbin-Watson Stat 1.593545		
Prob. (F-statistic)	0.000011			

*Dependent Variable = ROA
Source: Researchers Computation (2021)

From Table 4.7, FCFR had a negative and insignificant influence on ROA (p>0.05 of the selected listed companies in Nigeria. It showed that a

percentage increase in FCFR resulted to 1.402% decrease in ROA. The Durbin-Watson (DW) statistic of 1.594 indicated that there was no first-order autocorrelation in the model. R^2 indicated that 26.06% variation in the ROA was caused by the influence of FCFR. The F-ratio (2.104, Prob. < 0.05) calculated indicated that the model was significant. The value for FCFR deviated from the apriori expectation, hence the null hypothesis was upheld because both t-statistic and the p-value showed that FCFR was insignificant. The findings in this analysis were not in line with those in Ogbeide and Akanji (2017) who conducted a study to examine the relationship between cash flow and financial performance of insurance companies; and those of Nangih *et al.* (2020) who conducted similar study for the oil and gas firms in Nigeria.

4.4.5. Hypothesis Five

The fixed effect regression results computed were presented on Table 4.8.

Table 4.8: Fixed Effect Regression Output

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	0.014062	0.007811	1.800335	0.0726
NCFR	0.189036	0.055638	3.397590	0.0008
		Effects Specification		
Cross-Section Fixed (dummy variables)				
R-Squared	0.277085			
Adjusted R-Squared	0.155959			
S.E. of regression	0.163791			
Sum Squared resid	10.08717			
Log Likelihood	206.2792			
F-Statistic	2.287566		Durbin-Watson Stat	1.506755
Prob. (F-statistic)	0.00001			

*Dependent Variable = ROA
Source: Researchers Computation (2021)

From Table 4.8, NCFR had a positive and significant influence on ROA (p<0.05) of the selected listed companies in Nigeria. it indicated that a percentage increase in NCFR resulted to 18.09% increase in ROA. The NCFR value was in compliance with the apirori expectation and in line with the findings of Kamran *et al.* (2017) and Khushi *et al.* (2020) that studied relationship between cash flow and profitability of listed firms in Karachi Stock Exchange (KSE), Pakistan. The Durbin-Watson (DW) statistic of 1.5068 indicated that there was no first-order autocorrelation in the model. R^2 indicated that 27.71% variation in the ROA was caused by the influence of NCFR. The F-ratio (2.2876, Prob. <0.05) calculated indicated that the model

was significant. The t-statistic and the p-value showed NCFR was significant, hence the null hypothesis was rejected.

5. Summary, Conclusion and Recommendations

This section summarize the main findings, conclusion and recommendations from the study.

5.1. *Summary of the Findings*

The study was conducted to ascertain the influence of cash flow management on financial performance of selected listed companies in Nigeria. Simple linear regression technique, along with other statistics, were used to establish the influence of the predictors on ROA of the listed entities in Nigeria sampled for the study. From the analyses, it was discovered that:

i) Operating Cash Flow Margin (OCFM) had a positive and significant influence on financial performance (ROA) of the selected listed companies in Nigeria.

ii) Operating Cash Flow Ratio (OCFR) had a positive and significant influence on financial performance (ROAA) of the selected listed companies in Nigeria.

iii) Investing Cash Flow Ratio (ICFR) had a positive and significant influence on financial performance (ROA) of the selected listed companies in Nigeria.

iv) Financing Cash Flow Ratio (FCFR) had a negative and insignificant influence on financial performance (ROA) off the selected listed companies in Nigeria.

v) Net Cash Flow Ratio (NCFR) had a positive and significant influence on financial performance (ROA) of the selected listed companies in Nigeria.

5.2. *Conclusion*

The aim of the study was to empirically determine the influence of cash flow management on financial performance of the listed companies in Nigeria. From the empirical results, it was concluded that cash flow management had positive and significant influence on financial performance of the listed companies in Nigeria. of the five (5) variables studied, four (4); Operating Cash Flow Margin (OCFM), Operating Cash Flow Ratio (OCFR), Investing Cash Flow Ratio (ICFR) and Net Cash Flow Ratio (NCFR) had positive and significant influence on ROA, while one (1) variable Financing Cash Flow Ratio (FCFR) had a negative and insignificant influence on financial performance (ROA) of the listed companies in Nigeria.

5.3. Recommendations and Business Implications of the Findings

From the outcomes of the analyses, it was recommended that entity managers and policy makers, financial consultants and regulatory agencies should avail themselves with the empirical findings of the study coupled with theoretical opinions to understand the nexus between the variables of this study to improve on returns generation and maximization of wealth for the stakeholders as well as long-run sustainability of the entities.

5.4. Contribution to Knowledge

The study findings had established empirically that effective cash flow management exerted positive and significant influence on financial performance of the listed companies in Nigeria through the variables off cash flows from the three components. This study made use of core cash flow management variables not used in previous studies such as operating cash flow margin and net cash flow ratio to add to existing empirical literature variables of cash flow management.

5.5. Suggestion for Further Studies

This study can be extended to the financial services sector using the same variables. Also, financial performance variable can be substituted with Tobin Q or market price of shares of the listed entities.

5.6. Limitations of the Study

The study made use of time series data covering 2013 to 2019, hence the short-comings of such data are considered as limitation. The regressional tools used may also pose a limitation as well as the selection of the listed companies studied. Nonetheless, the above limitations are considered not fundamental to have affected the outcomes and the applicability of the findings in policy formulation and implementation.

5.7. Declaration of Conflicting Interest

The authors declared no potential conflicts of interest covering the research, authorship, publication of the article and no external funding of the research.

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