Cash Flow Analysis, Human Capital Investment and Net Interest Income of Quoted Commercial Banks in Nigeria

Vivian Akani
vivianakani@yahoo.com
Captain Elechi Amadi Polytechnic
Port Harcourt
Sheila Ifunanya Phi-Olumb
Department of Banking & Finance
ThankGod Imo
Department of Accountancy
Rivers State University, Port Harcourt.

Abstract

This study examined how cash flow analysis and human capital investment affect net interest income of commercial banks in Nigeria. Cross sectional data were sourced from the financial statement of the commercial banks from 2009 to 2018. Net interest income was used as dependent variables while investment on employee training, investment on employee education, investment on employee health, differed employee payment, operating cash flow, cash flow from financing activities, cash flow from investing activities and net cash flow were used as independent variables. Ordinary least square method of panel co-integration, unit root, granger causality test was used. The study found among other things that operating cash flow was showed negative relationship with net interest income. Similarly, net cash flow has negative relationship with net interest income. Investment on employee training and education has positive relationship with net interest income while differed payment has positive relationship with net interest income. From the findings, the study concludes that cash flow analysis and human capital investments have significant effect net interest income of commercial banks in Nigeria. We, therefore recommend that management of commercial banks should investment more on employee education as this can make the employees acquire dynamic knowledge in bank management such as credit appraisal that reduces the incidence of nonperforming loans and increase profitability. Furthermore, employees differed payment procedures should be well planned and seamlessly integrated into management broad policies of investment and financing decisions.

Keywords: Cash Flow Analysis, Human Capital Investment, Net Interest Income, Quoted Commercial Banks, Operating Cash Flow

1. Introduction

Corporate profitability is a concept that relates to the extent which management has achieved set objectives. It is a major concern to all stakeholders and influenced by internal factors such as employee competence, skills, management quality and external factors such as changes in technologies, government policies and the market. Government earn corporate tax from profitability, the shareholders return is maximized, the employees will be paid and the creditors are also paid as at when due. Judging from finance theory, the ultimate goal of a company is to maximize shareholder wealth (Jensen, 2002). Effective cash flow analysis and human capital plays important role in the strategic planning on how to create competitive advantages. Commercial banks are the fastest growing financial institutions which account for over 75 percent assets and liabilities in financial sector and over 30 percent of employment in Nigeria and also have   good compensation packages for her employees (Yusuf, 2011). The institutions have graduated from semi-skilled labour driven, to a more

professional and skilled workforce, where employees who are highly educated and skilled are considered most appropriate for the sector. While banks have traditionally emphasized shrewd use of financial assets, the increasingly competitive global marketplace is causing banks to reconsider investment in human capital. Inadequate cash flow planning with regards to operating activities will have a negative impact on the financial performance by reducing cash inflow and increasing cash outflow. In the context of financial accounting, operating cash flow is the cash generated from the day to day activities of a business, that is, the flow of cash made available from the core operations of a business entity (Uwuigbe, Uwalonwa and Egbide, 2012). Net cash flow from operating activities represent the net increase or decrease in cash and cash equivalent resulting from operations shown in the income statement in arriving at operating profit. The continued ill performance and crisis of the banking sector in Nigeria has over the years attracted the attention of industry watchers, policy makers, the academia and the general public. Traditionally, the regulatory authorities believed that the problem of the banking sector in Nigeria was due to the poor capitalization, it is a known now that this was not the only problem responsible for the poor performance mentioned above because in less than five years after the 1150% increase in bank capital from 2 billion to 25 billion naira some of these banks were found to be having problems. Past experience also proved that there are more banks that collapsed in the regulated banking era than the free banking era (Toby, 2008). The above implies that human factors such as lack of required bank management knowledge and poor corporate governance to great extent affect bank performance. Traditional human relations theories such as Maslow(1943); Hertzberg(1959); and McGregor (1960) do not perceive employees as a cost or commodity required in the production process, rather as a key organizational asset, who are able to create substantial value by launching new products or building sustainable relationships within and outside the entity. This implies that employees' knowledge and skills are described as a form of human capital. It has been acknowledged that from the perspective of knowledge, human capital has become a key resource for the organization to achieve strategic competitive advantage and thus better performance, because it is difficult to be imitated (Salman and Tayib, 2013). The key factor in achieving that effectiveness appears to be investment in human capital. As in the contemporary business environment, high-skilled labour is aware and capable of the need for ongoing learning, and employees strive for developing greater knowledge to respond to market competition, product innovations and more complex technologies (Wenzel, 2017).

There are many studies on the effect of human capital investment on corporate performancesuch as Akindehinde, Enyi and Olutokunbo (2015); Davies (2018); Edom, Inah, and Adanma (2015);Ifurueze, Odesaand Ifurueze (2014); Ikpefan, Kazeem and Taiwo,2015). Some of these studies failed to capture human capital investment but focused on human resource accounting. Similar studies such as Adelakun (2011); Obisi and Anyim, (2012) dealt with human capital investment and economic growth. Apart from the above, the findings of previous studies have been controversial and inclusive as some found positive effect while others foundnegative effect of human capital investment on corporate profitability. From the above problem and knowledge gaps, this study examined the effect of cash flow analysis, human capital investment on net interest income of commercial banks in Nigeria.

2.   Literature Reflection
2.1. Cash Flow Analysis

Cash flow analysis is the process of tracking how much money is coming into and going out of your business. This helps you predict how much money will be available to your business in the future. It also helps you identify how much money your business needs to cover debts, like paying staff and suppliers. Cash flow is the term used to describe changes in how much money your business has from one point to another (Adelegan, 2017). Cash flow analysis is keeping track of this flow and analyzing any changes to it. This helps you spot trends, prepare for the future, and tackle any problems with your cash flow. It pays to practice cash flow analysis often to make sure your business has enough money to keep running. A positive cash flow occurs when a business receives more money than it is spending. This enables it to pay its bills on time. A negative cash flow means the business is receiving less cash than it is spending. It may struggle to pay immediate bills and need to borrow money to cover the shortfall. Firms' ability to generate cash flows is an important component in any investment decision. Future cash flows directly affect the value of securities, because they constitute the ultimate payoff expected from the investment and hence, they are a crucial input for financial valuation models (Gilchrist &Himmelberg, 1995).

2.2.   Cash Flow from Operating Activities

Cash flow from operations is the section of a company's cash flow statement that represents the amount of cash a company generates (or consumes) from carrying out its operating activities over a period of time. Operating activities include generating revenue paying expenses, and funding working capital. It is calculated by taking a company's (1) net income, (2) adjusting for non-cash items, and (3) accounting for changes in working capital. Operating cash flow is calculated by starting with net income, which comes from the bottom of the income statement. Since the income statement uses accrual-based accounting, it includes expenses that may not have actually been paid for yet (Enow, 2015). Thus, net income has to be adjusted by adding back all non-cash expense like depreciation, stock-based compensation, and others.

2.3.   Net Cash Flow

Net cash flow refers to the difference between a company's cash inflows and outflows in a given period. In the strictest sense, net cash flow refers to the change in a company's cash balance as detailed on its cash flow statement. Net cash flow is the fuel that helps companies expand, develop new products, buy back stock, pay dividends, or reduce debt. It is what allows companies to conduct their day-to-day business. This is why some people value net cash flow more than just about any other financial measure, including earnings per share. Revenues and expenses are big drivers of net cash flow (Gyebi & Quain, 2013). It is important to note that short-term negative net cash flow is not always a bad thing. For example, if a company needs to spend cash to build a second manufacturing plant, the investment will pay off in the end as long as the plant eventually generates more cash than it cost to build. Investors often hunt for companies that

have high or improving net cash flow but low share prices. The disparity often means the share price will soon increase.Net cash flow from investment is made up of a number of components, some positive and some negative. For example, capital expenditure along with operational expenditure must be counted against profits.

2.4.   Cash Flow from Investing Activities

Cash flow from investing activities is an item on the cash flow statement that reports the aggregate change in a company's cash position resulting from investment gains or losses and changes resulting from amounts spent on investments in capital assets, such as plant and equipment. When analyzing a company's cash flow statement, it is important to consider each of the various sections that contribute to the overall change in its cash position. Negative cash flows are not always indicative of poor performance. Often, firms have negative overall cash flows for a period because of heavy investment expenditures (Kroes and Manikas, 2014). There are three main financial statements: the balance sheet, income statement, and cash flow statement. The balance sheet provides an overview of a company's assets, liabilities, and owner's equity as of a specific date. The income statement provides an overview of company revenues and expenses during a period. The cash flow statement bridges the gap between these two statements by showing analysts how much cash is generated or spent on operating, investing, and financing activities for a specific period.

2.5.   Cash Flow from Financing Activities

Cash flow from financing activities is a section of a company's cash flow statement, which shows the net flows of cash that are used to fund the company. Financing activities include transactions involving debt, equity, and dividends. Cash flow from financing activities provides investors with insight into a company's financial strength and how well a company's capital structure is managed. The cash flow statement is one of the three main financial statements that show the state of a company's financial health, the other two being the balance sheet and income statement. The cash flow statement measures the cash generated or used by a company during a given period (Nwanyanwu, 2015).

2.6.   Human Capital Investment

Human capital investment is any activity which improves the quality of the worker. Therefore, training is an important component of human capital investment. This refers to the knowledge and training required and undergone by a person that increases his or her capabilities in performing activities of economic values (Zehri, Abdelbaki & Bouabdellah, 2012). Human capital investments involve an initial cost such as tuition and training course fees, forgone earnings while at school and reduced wages and productivity during the training period through which the individual or firm hopes to gain a return in future such as increased earnings or higher firm

RSU Journal of Strategic and Internet Business Vol 4, Issue 2, 2019 . pp. 682-713, ISSN – 2659-0816 (print) 2659-0832 (Online)   (Akani, V. & Phi-Olumba, S. I).

www.rsujsib.com

productivity. As with investments in physical capital, this human capital investment will only be undertaken by the wealth maximizing individual or firm if the expected return from the investment ornet internal rate of return is greater than the market rate of interest

2.7.   Investment on Employee Training

Many workers increase their productivity by learning new skills and perfecting old ones while on the job. On-the-job training therefore is a process that raises the future productivity and differs from school training in that an investment is made on the job rather than in an institution that specializes in teaching. The cost of such investment will be value placed on the time and effort of the trainee, the teaching provided by others, and the equipment and materials used. These are believed to be costs in the sense that they could have been used in producing current output if they were not used in raising future output. There are basically two types of on the job training; it could either by general or specific on the job training (Yusulf, 2011).

2.8.   Investment on Employee Education

Schools and firms are often substitute sources of particular skills. The shift that has occurred over time in both law and engineering is a measure of this substitution. In acquiring legal skills for instance there is attachment to a law firms and studying in the law school. Some types of knowledge can be mastered better if simultaneously related to a practical problem; others require prolonged specialization. That is, there are complementarily between learning and work and between learning and time. The development of certain skills requires both specialization and experience and can be had partly from the firms and partly from schools. It 30 worthy of note that training in a new industrial skill is usually first given on the job, since firms tend to be the first to be aware of its value, but as demand develops, some of the training shifts to schools (Yusulf, 2011).

2.9.   Investment on Employee Health

One way to invest in human capital is to improve emotional and physical health. Earnings are much more closely geared to knowledge than strength, but in the earlier days and in some countries still developing, strength had a significant influence on earnings. Moreover, emotional health increasingly is considered an important determinant of earnings in all parts of the world. Firms can invest in the health of employees through medical examination, luncheons, or steering them away from activities with high accident and death rates (Yusulf, 2011). It is important to note that the productivity of employees depends not only on their ability and the amount invested in them, both on and off the job but also on their motivation, or the intensity of their work. Economists have long recognized that motivation in turn partly depends on earnings because of the effect of an increase in earnings on morale and aspirations.

2.10.   Human Capital Compensation

Besides characteristics of human resources in terms of diversity, experience and tenure, the level and structure of compensation is relevant to explaining productivity and firm performance among service firms. Firm performance to a very large extent has impacted on

the compensation pattern and structure of financial services related firms like banks. This is evident in the continual pay rise in the financial service industry like bank, without any adverse effect on the banks' performances. Two interrelated theories are central to explaining pay profiles and show why firms use pay dispersion across experience and tenure, i.e. utilizing rewards for experience gained in the labor market and for tenure within the firm.

2.11. **Deferred Payment**
The second theory addresses the pay profile across tenure. The theory of deferred payment states that a steep pay profile motivates and retains employees Salop & Salop, (1976); Lazear, (1991) believed that starting pay is lower, but employees can expect higher pay in the future, provided they stay within the firm. In addition, shirking will be more expensive in view of higher foregone future earnings. Accordingly, higher individual productivity and lower turnover costs will increase average employee productivity in terms of value added per employee. Leonard, Mulkay, & Van Audenrode (1999) believes that as long as average productivity increases more than average pay there will be a net gain from deferred payment. Consequently, lifetime earnings for employees as well as profits increase, provided that the gain is shared between employer and employees. Deferred payments when looked at from the Nigerian point of view, the old generation banks have used it efficiently and have made success in that. This is because the old generation banks believe in deferred payment through it pension scheme and where able to retain their staff that are looking forward to that payment. This is in contrast with what is obtainable today in the banking industry especially the new generation banks where bank officials move from one bank to another since they do not have to wait for any deferred payment. Pay dispersion.

2.12. **Profitability**
Profitability connotes a situation where the income generated during a given period exceeds the expenses incurred over the same length of time. The fundamental requirements here are that the income and the expenses must occur during the same period of time (Matching Concept) and the income must be a direct consequence of the expenses. The period of time may be one week, three months, one year (Sabo, 2007). The term profit can take either its economic meaning or accounting concept which shows the excess of income over expenditure viewed during a specified period of time. On one hand, profit is one of the main reasons for the continued existence of every business organization. On the other hand, profit is expected so as to meet the required return by owners and other outsiders. John (2009) clarified profitability ratio as a class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Accordingly, the term profitability is a relative measure where profit is expressed as a ratio, generally as a percentage. Profitability depicts the relationship of the absolute amount of profit with various other factors. Similarly, Michael (2011) argued that profitability is the most important and reliable indicator, as it gives a broad

indicator of the ability of company to raise its income level. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio (Kaur and Kapoor, 2007).

2.13.   Earnings per Share

Earnings per share are a ratio that measure earnings in relation to every share on issue. This is measured by dividing the profit before interest and taxes with the outstanding number of shares of the firm. This indicates how much each one share of the firm will earn from the yearly proceed. The earnings for every share represent shareholders slice of the pie. As earnings go up over time, the value of that piece of the firm becomes more valuable and this is why the price will be bid Whilst there are not many truisms when it comes to share investment, one is that if earnings rise consistently over periods of time. Apparently, issue of shares that increases the number of outstanding share dilutes the equity owners' residual value. Tze-Sam and Heng (2011) provided empirical investigation using EPS as a proxy for corporate performance to establish its relationship with financial structure. The measure is derived thus;

$$EPS \quad = \quad \frac{Profit\ before\ Interest\ and\ Tax}{No\ of\ Outstanding\ Shares} \qquad\qquad 1$$

2.14.   Free Cash flow Theory

Jensen (1986) posited that firms generating cash in excess of that required to fund positive Net Present Value (NPV) projects face greater agency problems as the free cash flow exacerbates the conflict of interest between shareholders and managers. One implication from Jensen's free cash flow theory is that firms with high levels of free cash flow are more likely to initiate takeovers that are value-decreasing. Free cash flow is cash flow in excess of that required to fund all of a firm's projects that have positive net present values when discounted at the relevant cost of capital. Such free cash flow must be paid out to shareholders if the firm is to be efficient and to maximize value for shareholders. Payment of cash to shareholders reduces the resources under managers' control, thereby reducing managers' power and potentially subjecting them to the monitoring by the capital markets, that occurs when a firm must obtain new capital.

Positive free cash flow can be interpreted as the amount of cash a company can pay out whether in terms of cash dividends or stock repurchase. Negative amount of free cash flow means the company has a deficit, and it cannot afford any payment to shareholders (Chikashi, 2015). It is not unusual for a firm with negative free cash flow to pay cash dividends or even buy back their own stocks by using its cash and/or retained earnings since these two are not included in free cash flow. There is also a simplified formula for those companies with a stable debt to capital ratio.

2.15.   Human Capital Theory

According to Becker (1964) under the human capital theory, people constitute the organization's human capital. Human capital just like every other asset owned by a firm has value in the market place given conditions of stable employment. However, unlike other assets, the potential value of human capital can only be fully realized with the co-operation of the person. Extending the argument, Becker (1964) posited that human capital in management literature refers to the productive capabilities of people. Skills, experience, and knowledge have economic value to organization because they enable it to be productive and adaptable (Becker, 1964). Mathis and Jackson (2006) agreed with this view when they defined human capital as the collective value of the capabilities, knowledge, skills, life experiences, and motivation of the workforce in an organization. Flamhotz and Lacey (1981) argued that all costs related to eliciting productive behavior from employees in the form of incentives related to motivating, monitoring and retaining them constitute human capital investments made in anticipation of future output.

3.   Empirical Review

Parsian (2013) carried a study on the effect of operating cash flow on profitability in Tehran stock exchange. The study was conducted to relate the influence of different component of cash flows on profitability growth. The study was based on the following objectives which were; to investigate how depreciation expense affect profitability, to assess how increase in current liabilities affect profitability, and establish the effect of the decrease in current assets on profitability. The study used 42 firms sampled from Tehran stock exchange. The study adopted multiple regression models. The study found that different operating cash flow components affect profitability. The study failed to include correlation analysis to which was essential for determining the relationship between operating cash flows from Cash generated from operation and profits from operations on financial performance.

Ali (2013) investigated the relationship between various earnings and cash flow operations of firm performance and stock returns in Iran. The objectives used were to assess the effect of earning, stock returns and cost of operation on firm performance. Simple and multiple regression analysis were used to analyze the data for the period from 2003 to 2011. The study concluded that the cost of operations to losses predicts financial performance. The study recommended that many firms to be concerned about their ability to performance. The study failed to analyze evaluate the effect of operating cash flows on financial performance using correlation analysis to establish the relationships. Thanh and Nguyen (2013) did a study on the effect of operating cash flows on bank performance in Vietnam. The objectives were; to investigate the impact of operating cash flows on bank performance, cash flow statement on bank performance and to evaluate the need for generating cash on bank performance. Multiple regression analysis was used to analyze data of 465 companies listed. The study finding indicated that bank performance decreases as the number of operating cash flows increases. Thus, recommended that summary of how much cash should be available for operations of cash flow. The study analyzed operating cash flows using financial performance.

Adelegan (2013) carried out an empirical analysis of the relationship between operating cash flows and dividend changes in Nigeria. The objectives of the were; to explore the relationship between operating cash flows and dividend changes, to identify the effect of capital structure choice, and size of each firm and economic policy changes on dividend changes. The researcher used the ordinary least squares (OLS) method to analyze the data on a sample of 63 quoted firms in Nigeria over a wider testing period from 1984 to 1997. The results revealed that the relationship between operating cash flow and firm performance is positively significant. The study concluded that there exist a relationship between operating cash flows and dividend changes. The study recommended that capital structure choice, and size of each firm and economic policy change should be used to analyze financial performance. This study clarified 19 the relationship between cash flow and financial performance regression analysis and correlations.

Frank and James (2014) studied a study on the relationship between operating cash flow activities and corporate performance in the Food and Beverages sector in Nigeria. The main objective was to establish the effect of financial information on corporate performance. The data collected was derived from the financial statement of the companies under study. The study sampled 5 Food and Beverage companies listed in the Nigerian Stock Exchange. Multiple regression analysis technique was used to analyze data. The study indicated that the there exists a significant positive relationship between operating cash flows and corporate performance in the Food and Beverage Sector of Nigeria. The study concluded that operating cash flows affect corporate performance in the Food and Beverage Sector of Nigeria. Thus, the study examined the effect of operating cash flow on financial performance using descriptive statistics.

Muchiri (2014) examined how operating cash flow influencing performance in the NSE. The study aims to investigate how operating cash flow influence performance of firms. The study objectives were to establish effect of company size on performance of firms, to investigate how sales growth affects performance of firms, and to establish the effect of the dividend payout ratio Tobin's Q on performance of firms. The study used multiple regressions to analyze data: cash flows, sales growth and Tobin's Q. The sample of 12 listed firms' forms the source of data used in the study was from published financial statements by the NSE between the years 2003 and 2012. The study concluded that operating cash from current asset, current liability has always been an important measure of firm company size and sales growth affect performance of firms. This study analyzed operating cash flow with inferential statistics using correlations which was not rooted in cash flow operation approach to streamline financial performance.

Nwanyanwu (2015) examined the relationship between operating cash flow activities and organization performance in the hospitality in Nigeria. The objective were; to examined the relationship between cash flows from operating activities on organization performance, to determine the impact of loans processing on organization performance and to establish the effect of equity investment on organization performance. The sample size was 45 hospitality and print media firms. The study used inferential statistics using correlations analysis.

691

The study concluded that payment of cash to suppliers and taxes affected performance in cash flow statement. Thus, this study used manufacturing firms to analyze operating cash flow activities.

Mehtari (2016) explored the relationship between operating cash flow and profitability of firm in TSE. Objectives were to identify the effect of dividend policy on profitability of firm, effect of liability on profitability of firm and establish the effect of retained earnings on profitability. The study used correlations analysis to analyze the relation between these two variables. The study investigated 19 quoted companies in USA and financial indicators and three variables to measure firm's performance, namely profitability (return on investment) market performance (measured by changes in stock market value) and cash flow performance (dividend per share). The study concluded that firms with low total assets, more liabilities, less equity, an unqualified opinion of an auditor and low retained earnings have better cash flow performance (measured by cash dividend). Recommended that, firms to have efficient operating cash flow management, thus, this study used regression analysis.

Rehaman (2017) analyzed cash flow from investment activities on profitability in Pakistan firm. The study aims to examine the differences between net cash flows from operating and 21 profitability in Pakistan firm. Objectives were to establish effect of cash flow from investing on profitability, effect of current assets on profitability and to assess the effect of current liabilities on profitability the firm. The sample size was 23 firms. The study used descriptive statistics. The findings show a great significance to a firm, because it directly influences both liquidity and profitability. Cash flow from investing comprises of both current assets and current liabilities of the firm. The study concluded that net investing cash flows affect profitability. The study recommended should be net investing should be used to determine the amounts of Interest received Purchases of PPE, and Disposals of PPE and its effects on profitability.

4. **Methodology**

Ex-post facto research design was employed to examine the relationship between cash flow analysis, human capital investment and net interest income of quoted commercial banks in Nigeria. The study used secondary data that was extracted from the Annual Reports and Statements of Accounts of the quoted commercial banks. The target population includes all 23commercial banksin Nigeria. However, the sample size will be limited to the 14 quoted commercial banks.

4.1. **Data Analysis Method**
The method of data analysis to be used in this study was the panel data multiple linear regressions using Ordinary Least Square (OLS) method. This approach, which is a quantitative technique, includes tables and the test of the hypotheses formulated by using ordinary least square regression analysis at 5% level of significance. To arrive at a result that was not lead to spurious regressions, the study

tested for stationarity at different levels in the variables making up the model. Other tests that were carried out on the model include test of Durbin Watson Testand test of model specification so as to achieve the objectives of our study as well as answer the research question and hypotheses. Moreover, in order to undertake a statistical evaluation of our analytical model, so as to determine the reliability of the results obtained the coefficient of correlation (r) of the regression, the coefficient of determination (r^2), the student T-test and F-test was employed.

1. **Coefficient of Determination (r^2) Test –**This measure the explanatory power of the independent variables on the dependent variables. For example, to determine the proportion of economic growth in our model, we used the coefficient of determination. The coefficient of determination varies between 0.0 and 1.0. A coefficient of determination says 0.20 means that 20% of changes in the dependent variable were explained by the independent variable(s).

2. **F-Test:** This measures the overall significance. The extent to which the statistic of the coefficient of determination is significant is measured by the F-test. The F-test can be done using the F-statistic or by the probability estimate. We used the F-statistic estimate for this analysis.

3. **Student T-test:** measures the individual significance of the estimated independent variables at 5% level of significance.

4.   **Durbin Watson Statistics**: This measures the collinearity and autocorrelation between the variables in the time series. It is expected that a ratio close to 2.00 is not auto correlated while ratio above 2.00 assumed the presence of autocorrelation. The Durbin-Watson statistic is a test for first-order serial correlation. More formally, the DW statistic measures the linear association between adjacent residuals from a regression model. If there is no serial correlation, the DW statistic was around. The DW statistic fall below if there is positive serial correlation in the worst case, it was near zero. If there is negative correlation, the statistic will lie somewhere between 2 and 4.Positive serial correlation is the most commonly observed form of dependence. As a rule of thumb, with 50 or more observations and only a few independent variables, a DW statistic below about 1.5 is a strong indication of positive first order serial correlation.

5. **Regression coefficient:** This measures the extent in which the predictor variables affect the dependent variables in the study.

6. **Probability Ratio:** It measures also the extent in which the predictor variables can explain change to the dependent variables given a percentage level of significant.

To obtain the observed values on the expectation of the effect of, cash flow analysis, human capital investment on the profitability of commercial banks, panel data survey over a ten-year period was employed. Panel data structure allows us to take into account the unobservable and constant heterogeneity, that is, the specific features of each quoted firm. The researcher employed pooled Ordinary Least Square (OLS), Fixed Effects and Random Effects regression models to test the various hypotheses. Pooled OLS regression technique is popular in financial studies owing to its ease of application and precision in prediction (Alma, 2011).

Model Specification
From review of literature, commercial bank profitability can be affected by several generic factors. So, it is necessary to investigate the effect, cash flow analysis, human capital investment on profitability of commercial banks in Nigeria. Following the hypotheses earlier stated in chapter one, regression models were formulated to capture the effect of, cash flow analysis, human capital investment on profitability of commercial banks.

$$Y = \beta_0 + \beta_{1Xit} + \mu \qquad\qquad 1$$

Where Y   =   Dependent Variable

β_{1Xit} =   Independent variable

β_0 =   Regression Intercept

μ =   Error Term

Disaggregating Equation 1 to form the multiple regression models, we have

$$NII \quad = t_0 + t_1 OPCF + t_2 CFFA + t_3 CFIA + t_4 NCF + \mu \qquad\qquad 2$$
$$NII \quad = \alpha_0 + \alpha_1 IET + \alpha_2 IEE + \alpha_3 IET + \alpha_3 DWP + \mu \qquad\qquad 3$$

Where
NII = Net interest income
OPCF =   Operating Cash flow
CFFA =   Cash flow from financing activities
CFIA =   Cash flow from investment activities
NCF   =   Net cash flow
IET   = Investment on employee training proxy by employee training cost to total cost
IEE = Investment on employee education proxy by employee education cost to total cost

IEH = Investment on employee Health proxy by employee health care cost to total cost

DWP   = Deferred wage Payment proxy by employee retirement benefits

μ =   Error Term

$\beta_1 - \beta_4$ =   Coefficient of Independent Variables to the Dependent Variables

β_0 = Regression Intercept

A-priori Expectation of the Result

The explanatory variables are expected to have positive and direct effects on the dependent variables. That is a unit increase in any of the variables is expected to increase net interest income of commercial banks. This can be express mathematically as $a_1, a_2, a_3, > 0$.

Estimation Techniques

Panel Data Unit Root Tests

To introduce panel data unit root tests, consider the autoregressive model

$$y_{it} = \alpha_i + \gamma_i y_i t - 1 + \varepsilon_{it}$$ 4

Which we can rewrite as

$$\Delta y_{it} = \alpha_i + \pi_i y_i t - 1 + \varepsilon_{it}$$ 5

Where $\pi_i = \gamma_i - 1$. The null hypothesis that all series have a unit root then becomes $H_0 : \pi_i = 0$ for all i. a first choice for the alternative hypothesis is that all series are stationary with the same mean-reversion parameter, that is, $H_1 : \pi_i = \pi < 0$ for each country i, and is used in the approaches of Levin and Lin (1992)Quah (1994) and Harris and Tzavalis (1999). A more general alternative allows the mean-reversion parameters to be potentially different across countries and states that $H_1 : \pi_i = \pi < 0$ for at least one country i. This alternative is used by Maddala and Wu (1999).Choi (2001) imPesaran and Shin (2003) and others. For all tests, the null hypothesis is that the time series of all individual variables have a unit root. This implies that the null hypothesis can be rejected (in sufficiently large samples) if any one of the N coefficients π_i is less than zero. Rejection of the null hypothesis therefore does not indicate that all series are stationary. The combined test statistics is given by:

$$P = -2\sum_{i=1}^{N} \log\ p_i$$

6

For fixed N, this test statistics will have a Chi-squared distribution with $2N$ degrees of freedom as $T \to \infty$, so that large values of P lead us t reject the null hypothesis, while this test (sometimes referred to as the Fisher test) is attractive because it allows the use of different ADF test and different time-series length per unit. A disadvantage is that it requires individual p-value that has to be derived by Monte Carlo simulations. While the latter test may seem attractive and easy to us, a word of caution is appropriate. Before one can apply the individual ADF test underlying the Mandela and Wu (1999) andIm, Pesaran and Shin (2003) approaches, one has to determine the number of lags and determine whether an trend should be included.

Panel Data Co-integration Tests
Several additional issues are of potential importance when testing for co-integration: heterogeneity in the parameter of the co- integrating relationships, heterogeneity in the number of co-integrating relationship across countries and the possibility of co- integration between the series from different alternative estimators are available. With different small and large sample properties (depending upon the type of asymptotic that is chosen).

$$y_{it} = \alpha_i + \beta_i x_{it} + \varepsilon_{it}$$

7

y_{it} Where both and x_{it} are integrated or order one. Co-integration implies that ε_{it} is stationary for each i. Homogeneous co-integration. In addition Requires that $\beta_I = \beta$If the co-integrating parameter is heterogeneous. And homogeneity is imposed. One estimate

$$y_{it} = \alpha_i + \beta_i x_{it} + \left[(\beta_i - \beta)x_{it} + \varepsilon_{it}\right]$$

8

And in general the composite error term is integrated of order one even if ε_{it} is stationary. However, the problem estimator will also average over i, so that the noise in the equation will be attenuated. In many circumstance, when $N \to \infty$ the fixed effect estimator for β is actually consistent for the long-run average relation parameter,aswell as asymptotically normal, despite the absence of co-integration (Phillips and Moon, 1999).

Granger Causality Test

Thus, Granger causality test helps in adequate specification of model. In Granger causality, test, the null hypothesis is that no causality between two variables. The null hypotheses is rejected if the probability of F* statistics given in the Granger causality result is less than 0.05 (Gujurati, 2003). The pair-wise granger causality test is mathematically expressed as:

$$Y_t \, \pi_o + \sum_{i=1}^{n} x_1^{\,y} \, Y_{t-1} \sum_{i=1}^{n} \pi_1^{\,x} \, x_{t-1} + u_1 \qquad 9$$

and

$$x_t dp_o + \sum_{i=1}^{n} dp_1^{y} \, Yt - 1 \sum_{i=1}^{n} dp1^{X} x_{y-1} + V_1 \, 10$$

Where x_t and y_t are the variables to be tested white u_t and v_t are the white noise disturbance terms. The null hypothesis $\pi_1^{y} = dp_1^{y} = 0$, for all I's is tested against the alternative hypothesis $\pi_1^{x} \neq 0$ and $dp_1^{y} \neq 0$. if the co-efficient of π_1^{x} are statistically significant but that of $dp1y$ are not, then x causes y. If the reverse is true then y causes x. however, where both co-efficient of π_1^{x} and dp_1^{y} are significant then causality is bi –directional.

The Fixed Effects Model

The fixed effects model is simply a linear regression model in which the intercept terms vary over the individual units i.e.

$$y_{tt} = \alpha_j + x_{it}^{\,1} \beta + \varepsilon_{it} \quad \varepsilon_{it} \approx HD\left(0.\sigma^2\right) \qquad 11$$

Where it is usually assumed that all x_{it} are independent of all ε_{it}. We can write this in the usual regression framework by including a dummy variable for each unit*i* the model. That is

$$y_{tt} = \sum_{j=1}^{N} \alpha_j d_{ij} + x_{ij} \beta + \varepsilon_{it} \quad \varepsilon_{it} \qquad 12$$

Where $d_{ij} = 1$ if $i =$ jand 0 elsewhere. We thus have a set of *N*. dummy variables in the model. The parameters $\alpha_I \ldots \ldots \ldots \alpha_N$ and β can be estimated by ordinary least squares. The implied estimator for β is referred to as the least squares dummy variable (LSDV) estimator. It may however, be numerically unattractive to have a regression model with so many repressors. Fortunately, one can compute the estimator for β is obtained if the regression is performed in deviations from individual means (Gujurati, 2003). Essentially, this implies that we eliminate the individual effects α_I first by transforming the data.

The Random Effects Model

It is commonly assumed in regression analysis that all factors that affect the dependent variable, but that have not been included as repressors, can be appropriately summarized by a random error term(Gujurati, 2003). In our case, this leads to the assumption that they α_t are random factors, independently and identically distributed over individuals. Thus we write the random effects model as

$$y_{it} = \mu + x_{it}\beta + x_{it}\beta + \alpha_i + \varepsilon_{it}$$ 13

Where $\alpha_t + \varepsilon_{it}$ is treated as an error term consisting of two components: an individual specific component, which does not vary over time, and a remainder component, which is assumed to be uncorrelated over time. That is, all correlation of the error terms over time is attributed to the individual effects α_{it}. It is assumed that α_{it} and ε_{it} is mutually independent and independent of x_{js} (for all jand *s)*. This implies that the OLS estimator for μ and β from (10.15)9 is unbiased and consistent.

5. Results and Discussion of Findings

Table 1:   Cash Flow Analysis and Net Interest Income of Commercial Banks

Variable	Pooled Effect			Fixed effect			Random effect		
	β coefficient	T. stat	p. value	β coefficient	T. stat	p. value	β coefficient	T. stat	p. value
OPCF	-5.215267	-1.363261	0.1751	0.149828	0.028119	0.9776	-5.215267	-1.376244	0.0470
NCF	-5.329980	-1.573595	0.1179	-5.627915	-1.389296	0.1673	-5.329980	-1.588581	0.0445
CFIA	5.150337	1.653273	0.1006	15.69845	2.573658	0.0113	5.150337	1.669017	0.0474
CFFA	-1.956623	-0.869319	0.3862	0.755538	0.282572	0.7780	-1.956623	-0.877597	0.3817
C	50.83251	1.954465	0.0527	-54.79265	-0.879530	0.3809	50.83251	1.973078	0.0505
R-squared	0.043472			0.152488			0.643472		
AdjR^2	0.014919			0.033417			0.414919		
F-statistic	1.522503			1.280642			3.002503		
F- Prob	0.199164			0.216257			0.199164		
D W	2.052270			2.084735			2.052270		
Correlated Random Effects - Hausman Test									
				Chi-Sq. Statistic				Chi-Sq. d.f.	Prob.
Test Summary									
Cross-section random				7.109852				4	0.1302

Source: Extracted by Researcher from E-View 9.0 (2019)

From the table net interest income show the probability of the cross section random effects was 0.1302 which is greater than 0.05 implying that it's appropriate to adopt random effects model.

From the results of the random effect model, the model is significant at 5% level as the probability value was less than 0.05. The Durbin-Watson value was 2.119056 indicating that there was no autocorrelation problem. The Durbin-Watson value should be around 2, if the value of Durbin-Watson is below 1 then there is serial correlation. The value of R-squared was 0.643472 showing that cash flow analysis explains 64.3 percent variance in net interest income.

The estimated regression coefficient for operating cash flow was -5.215267 shows that with influence of other explanatory variables held constant increase in one percent in operating cash flow makes net interest income to reduce by 5.2 percent. The estimated regression coefficient for net cash flow was -5.329980 shows that with influence of other explanatory variables held constant increase in net cash

flow make net interest income to reduce by 5.3 percent. Cash flow from investing activities has coefficients 5.150337 which imply that increase on the variable will make net interest income to increase by 5.1percent while cash flow from financing activities has a negative coefficient of -1.956623 which implies that increase on the variable will make net interest income to reduce by 1.9 percent. The analysis above enables us to test for panel unit root in the Table 2

Table 2: Panel Unit Root

Variables	ADF - Fisher Chi-square/ PP - Fisher Chi-square	Statistics	Probability	REMARK	DECISION
NII	Levin, Lin & Chu t*	-19.5217	0.0000	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-3.50399	0.0002	Stationary	Reject H0
NCF	Levin, Lin & Chu t*	-4.58563	0.0000	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-11.4691	0.0016	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-1.36963	0.0854	Stationary	Reject H0
	ADF - Fisher Chi-square	43.8366	0.0288	Stationary	Reject H0
	PP - Fisher Chi-square	93.8585	0.0000	**Stationary**	**Reject H0**
	Levin, Lin & Chu t*	-12.8128	0.0000	Not Stationary	Accept H0
OPCF	Im, Pesaran and Shin W-stat	-4.73428	0.0000	Not Stationary	Accept H0
	ADF - Fisher Chi-square	81.8881	0.0000	Stationary	Reject H0
	PP - Fisher Chi-square	153.473	0.0000	**Stationary**	**Reject H0**
	Levin, Lin & Chu t*	-8.18164	0.0021	Stationary	Reject H0
CFIA	Im, Pesaran and Shin W-stat	-3.43322	0.0003	Stationary	Reject H0
	ADF - Fisher Chi-square	64.3099	0.0001	Stationary	Reject H0
	PP - Fisher Chi-square	85.6132	0.0000	Stationary	Reject H0
CFFA	Levin, Lin & Chu t*	-9.93471	0.0000	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-5.46749	0.0000	Not Stationary	Accept H0
	ADF - Fisher Chi-square	88.8573	0.0000	Not Stationary	Accept H0
	PP - Fisher Chi-square	230.481	0.0000	Stationary	Reject H0

Source: Extracted by Researcher from E-View 9.0 (2019)

It can be seen that the probability of Levin, Lin and Chu statistic for all the variables has a value < 0.05 which is significant at 5 percent level of significance hence using Levin, Lin and Chu test it rejects the null of unit root this shows that the variables are stationery and has no unit root. Im, Pesaran and Shin unit root test, Augmented Dickie-Fuller ADF-Fisher Chi-square, Phillips-PerronFisher Chi square, were also implemented most confirm stationary data hence no unit root.

Table 4 : Pedroni Residual Co-integration Test

Series: NII OPCF NCF CFIA CFFA

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	6.394518	0.0000	-1.047180	0.8525
Panel rho-Statistic	6.925008	0.0000	2.633658	0.9958
Panel PP-Statistic	-12.40170	0.0000	-2.410214	0.0080
Panel ADF-Statistic	-3.678113	0.0001	2.927181	0.9983

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	3.918161	1.0000
Group PP-Statistic	-7.696384	0.0000
Group ADF-Statistic	3.030655	0.9988

Source: Extracted by Researcher from E-View 9.0 (2019)

These seven statistics are asymptotically distributed as standard normal and the detailed description of panel co-integration test statistics can be found in Pedroni (1999, 2004). The seven of Pedroni's tests are based on the estimated residuals from the following long run mode. We conclude that there is a panel long-run equilibrium relationship among variables, meaning that human capital investment and commercial banks net interest income move together in the long run.

Table 5:Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
OPCF does not Granger Cause NII	112	2.39165	0.0964
NII does not Granger Cause OPCF		2.85192	0.0621
NCF does not Granger Cause NII	111	5.18197	0.0071
NII does not Granger Cause NCF		1.55004	0.2170
CFIA does not Granger Cause NII	112	0.05079	0.9505
NII does not Granger Cause CFIA		7.57331	0.0008
CFFA does not Granger Cause NII	112	0.68670	0.5054

NII does not Granger Cause CFFA	0.13433	0.8744

Source: Extracted by Researcher from E-View 9.0 (2019)

From the table above, there is unidirectional causality from net cash flow to net interest income and a unidirectional causality from net interest income to cash flow from investing activities. Other variables have no causal relationship, we accept the null hypotheses.

Table 6: Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
ACCESS	-0.356	0.004840	1	--	8
ECOBANK	-0.386	0.012422	1	--	8
Polarize	-0.498	0.001334	1	--	8
FCMB	0.056	0.014931	1	--	7
FIDELITY	0.139	0.927243	1	--	8
GTB	-0.127	0.004013	1	--	8
FIRSTBANK	-0.402	0.082373	1	--	8
STANBIC	-0.531	1.378194	1	--	8
STERLING	0.311	0.177448	1	--	8
UBA	-1.310	0.023728	1	--	8
UNIONBANK	-1.758	7296.394	1	--	8
UNITYBANK	-0.446	0.027962	1	--	8
WEMABANK	-0.027	0.011924	1	--	8
ZENITHBANK	-1.342	0.000718	1	--	8

Source: Extracted by Researcher from E-View 9.0 (2019)

From the table, the variance of the unit analysis is less than 1 except, Stanbic Bank; this implies that the variables are normally distributed among the sampled commercial banks.

Table 7:   Human Capital Investment and Net Interest Income of Commercial Banks

	Pooled Effect			Fixed effect			Random effect		
	β coefficient	T. stat	p. value	β coefficient	T. stat	p. value	β coefficient	T. stat	p. value
IEH	-1.435675	-0.565413	0.5727	-11.49782	-2.783139	0.0062	-1.435675	-0.579362	0.5633
IET	-1.661899	-0.205737	0.8373	0.955135	0.086278	0.9314	0.870165	0.109175	0.9132
IEE	0.870165	0.106546	0.9153	5.956506	2.106023	0.0097	3.706706	0.068961	0.9451
DWP	3.709606	0.067300	0.9464	4.261990	2.360360	0.0192	-1.661899	-0.210813	0.8334
C	20.01544	1.562737	0.1205	38.17128	0.830841	0.4077	20.01544	1.601291	0.1116
R-squared	0.005435			0.743968			0.005435		
AdjR^2	0.024034			0.524684			0.024034		
F-statistic	0.184433			11.20639			0.184433		
F- Prob	0.946159			0.000004			0.946159		
D W	2.002548			2.119056			2.002548		
			Correlated Random Effects - Hausman Test						
Test Summary				Chi-Sq. Statistic		Chi-Sq. d.f.			Prob.
Cross-section random				10.767062		4			0.0293

Source: Extracted by Researcher from E-View 9.0 (2019)

From the table 7 the Hausman test is distributed as chi-square with 4 degree of freedom. From the table net interest income show the probability of the cross section random effects was 0.0293which is less than 0.05 implying that it's appropriate to adopt fixed effects model.

From the results of the fixed effect model, the model is significant at 5% level as the probability value was less than 0.05. The Durbin-Watson value was 2.119056indicating that there was no autocorrelation problem (Garson, 2012; Alsaeed, 2005). The Durbin-Watson value should be around 2, if the value of Durbin-Watson is below 1 then there is serial correlation. The value of R-squared was 0.743968showing that human capital investment explains 74.3 percent variance in net interest income.

The partial regression coefficient for investment on employee health was -11.49782 shows that with influence of other explanatory variables held constant increase in one percent in investment on employee health makes net interest income to decrease by 11.4 percent. The partial regression coefficient for employee investment in training was 0.955135 shows that with influence of other explanatory variables held constant increase in employee investment in training make net interest income to increase by 0.95 percent. Employee

investment in education has coefficients 5.956506 which imply that increase on the variable will make net interest income to increase by 5.9 percent while differed payment has a positive coefficient of 4.261990 which implies that increase on differed payment will make net interest income to increase by 4.2 percent. The analysis above enables us to test for panel unit root in the Table 8:

Table 8: Panel Unit Root

Variables	ADF - Fisher Chi-square/ PP - Fisher Chi-square	Statistics	Probability	Remark	Decision
NII	Levin, Lin & Chu t*	-19.5217	0.0000	Stationary	Reject H0
IET	Levin, Lin & Chu t*	-5.05909	0.0000	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-11.4691	0.0016	Stationary	Reject H0
	ADF - Fisher Chi-square	48.9192	0.0085	Stationary	Reject H0
	PP - Fisher Chi-square	105.019	0.0000	Stationary	Reject H0
	Levin, Lin & Chu t*	-3.19374	0.0007	**Stationary**	**Reject H0**
	Im, Pesaran and Shin W-stat	-2.77671	0.0027	Not Stationary	Accept H0
IEE	ADF - Fisher Chi-square	57.2067	0.0009	Not Stationary	Accept H0
	PP - Fisher Chi-square	98.0452	0.0000	Stationary	Reject H0
	Levin, Lin & Chu t*	-5.30213	0.0000	**Stationary**	**Reject H0**
	Im, Pesaran and Shin W-stat	-2.85689	0.0021	Stationary	Reject H0
DWP	ADF - Fisher Chi-square	55.9205	0.0013	Stationary	Reject H0
	PP - Fisher Chi-square	129.595	0.0000	Stationary	Reject H0
	ADF - Fisher Chi-square	89.1018	0.0000	Stationary	Reject H0
	PP - Fisher Chi-square	256.429	0.0000	Stationary	Reject H0
IEH	Levin, Lin & Chu t*	1.49444	0.9325	Stationary	Reject H0
	Im, Pesaran and Shin W-stat	-1.05136	0.1465	Not Stationary	Accept H0
	ADF - Fisher Chi-square	36.6961	0.1257	Not Stationary	Accept H0
	PP - Fisher Chi-square	176.647	0.0000	Stationary	Reject H0

Source: Extracted by Researcher from E-View 9.0 (2019)

All panel unit root tests have null hypothesis tests of non-stationary human capital investment. It can be seen that the probability of Levin, Lin and Chu statistic for all the variables has a value < 0.05 which is significant at 5 percent level of significance hence using Levin, Lin and Chu test it rejects the null of unit root this shows that the variables are stationery and has no unit root. Im, Pesaran and Shin unit root test, Augmented Dickie-Fuller ADF-Fisher Chi-square, Phillips-Perron Fisher Chi square, were also implemented most confirm stationary data hence no unit root except for natural logarithm of investment on employee health where both tests failed to reject natural logarithm investment on employee health at 5 percent level respectively.

Table 9:Panel Co-integration Test

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	6.056413	0.0000	-1.437513	0.00047
Panel rho-Statistic	-5.687735	0.0058	2.977276	0.0085
Panel PP-Statistic	-10.05781	0.0000	-4.656080	0.0000
Panel ADF-Statistic	7.581504	1.0000	-1.813548	0.0349

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	4.534231	1.0000
Group PP-Statistic	-6.118162	0.0000
Group ADF-Statistic	0.050802	0.0003

Source: Extracted by Researcher from E-View 9.0 (2019)

We conclude that there is a panel long-run equilibrium relationship among variables, meaning that human capital investment and commercial banks net interest income move together in the long run.

Table 10:Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
IETH does not Granger Cause NII	112	6.23181	0.0028
NII does not Granger Cause IEH		3.88886	0.0234
IET does not Granger Cause NII	112	0.01166	0.9884
NII does not Granger Cause IET		0.70414	0.4968
IEE does not Granger Cause NII	112	0.08569	0.9179
NII does not Granger Cause IEE		0.11730	0.8894
DWP does not Granger Cause NII	112	0.55705	0.5745
NII does not Granger Cause DWP		0.11380	0.8925

Source: Extracted by Researcher from E-View 9.0 (2019)

Granger causality between two variables cannot be interpreted as a real causal relationship but merely shows that one variable can help to predict the other one better (Zou*et al.*, 2010). Results of the granger causality found no causal relationship among the variables.

Table 11: Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
ACCESS	-0.339	0.002994	1	--	8
ECOBANK	0.116	0.007437	1	--	8
Polarize	0.083	0.000631	1	--	8
FCMB	-1.275	0.028011	1	--	8
FIDELITY	-0.915	0.506066	1	--	8
GTB	-0.995	0.000544	1	--	8
FIRSTBANK	-0.333	0.005843	1	--	8
STANBIC	-0.507	0.431813	1	--	8
STERLING	-0.737	0.007566	1	--	8
UBA	-0.503	0.052159	1	--	8
UNIONBANK	-0.147	6653.592	1	--	8
UNITYBANK	-0.674	0.011354	1	--	8
WEMABANK	-0.761	0.001774	1	--	8
ZENITHBANK	-0.049	0.006266	1	--	8

Source: Extracted by Researcher from E-View 9.0 (2019)

All the test procedures produced high power over all the sample sizes at order 1 but ADF and KPSS produced low power over all the

sample size at order 2 & 3.

6. Discussion of Findings

The estimated regression results found that operating cash flow of the commercial banks have negative   and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was -5.215267 and the probability was 0.0470, this implies that a 1 percent increase on the variables will reduce 5.2 percent in net interest income of commercial banks. The negative   effect of operating cash flow on the net interest income of the commercial banks is contrary to expectation of the study and cash flow management theory. The negative effect of the variable on profitability of Nigeria commercial

banks can be traced to poor quality of management and inability to efficiently manage the bank business environment. The negative effect of operating cash flow contradict the findings of Amuzu (2010) that cash flow analysis measures the performance as well as competitiveness of firms appropriately, the findings of Mazloom, Azarberahman, and Azarberahman (2013) that a company's performance and cash flow have a significant negative relationship and the findings of Amah, Ekwe, and Uzoma (2016) that there is a positive meaningful relationship between operating earning with return on equity, return on assets, and gearing of net market values in operating assets. The negative effect of operating cash flow on net interest income of the commercial banks contradict the findings of Cheng, Cullinan, and Zhang (2014) that free cash flow with contemporaneous profits, with no consideration for the overlapping effect.

The estimated regression results found that cash flow from investing activities of the commercial banks have positive and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was 5.150337 and the probability was 0.0474, this implies that a 1 percent increase on the variables will add 5.1 percent increase on net interest income of commercial banks. The positive   effect of cash flow from investing activities on the net interest income of the commercial banks is confirmed to expectation of the study and cash flow management theory.

Evidence from the estimated regression results found that cash flow from financing activities of the commercial banks have negative and no significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was -1.956623 and the probability was 0.3817this implies that a 1 percent increase on the variables will reduce by 1.9 percent increase on net interest income of commercial banks. The negative   effect of cash flow from financing activities on the net interest income of the commercial banks is contrary to expectation of the study and cash flow management theory.

The estimated regression results found that net cash flow of the commercial banks have negative and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was -5.329980 and the probability was 0.0445 this implies that a 1 percent increase on the variables will reduce by 5.3 percent increase on net interest income of commercial banks. The negative   effect of net cash flow on the net interest income of the commercial banks is contrary to expectation of the study and cash flow management theory.

The estimated regression results found that investment on employee training of the commercial banks have positive but no significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was 0.955135 and the probability was 0.9314, this implies that a 1 percent increase on the variables will add 0.95 percent increase on net interest income of commercial banks. The positive effect of investment on employee training on the net interest income of the commercial banks confirm the a-priori expectation of the study and justifies the objectives of employee training such as on the job and off the job training. The estimated regression coefficient also found that there is positive and significant relationship between investment

on employee training and earnings per share of the commercial banks within the periods covered in the study. The regression coefficient of 0.275275 and probability of 0.0479 signifies that increase on investment on employee training will lead to significant increase on earnings per share of the commercial banks.

The estimated regression results found that investment on employee education of the commercial banks have positive and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was 5.956506 and the probability was 0.0097, this implies that a 1 percent increase on the variables will add 5.9 percent increase on net interest income of commercial banks. The positive effect of investment on employee education on the net interest income of the commercial banks confirm the a-priori expectation of the study and justifies the objectives of employee investment on education. The estimated regression coefficient also found that there is negative but no significant relationship between investment on employee education and earnings per share of the commercial banks within the periods covered in the study, the regression coefficient of -0.171699 and probability of 0.3641signifies that increase on investment on employee training will lead to significant increase on earnings per share of the commercial banks. The estimated regression coefficient also found that there is positive but no significant relationship between investment on employee training and capital gain of the commercial banks within the periods covered in the study.

The estimated regression results found that investment on employee health of the commercial banks have negative and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was -11.49782 and the probability was 0.0062, this implies that a 1 percent increase on the variables will add 11.4 percent decrease on net interest income of commercial banks. The negative effect of investment on employee health on the net interest income of the commercial banks contradict the a-priori expectation of the study and invalidate the objectives of employee health benefits from the banks and employee health insurance schemes. The estimated regression coefficient also found that there is positive and significant relationship between investment on employee health and earnings per share of the commercial banks within the periods covered in the study. The regression coefficient of 0.102702 and probability of 0.0350 signifies that increase on investment on employee health will lead to significant increase on earnings per share of the commercial banks.

The estimated regression results found that employee differed payment of the commercial banks have positive and significant relationship with net interest income of the commercial banks within the periods covered in this study. The coefficient of variables was 4.261990 and the probability was 0.0192, this implies that a 1 percent increase on the variables will add 4.2 percent increase on net interest income of commercial banks. The positive effect of employee differed payment on the net interest income of the commercial banks confirm the a-priori expectation of the study and invalidate the objectives of pension fund reform Act of 2004.The positive effect

of the variable on profitability of Nigeria commercial banks confirm the findings of Storey et al (2014) that training expenses enhance learning environment that improve the company's transformation. The findings of Sumedrea (2013) that the development of companies is influenced by the human and structural capital, while profitability is additionally linked to the capital through the Value Added Intellectual Capital coefficient and the findings of Sung et al (2014) that employee development increases labour efficiency and productivity which increase financial strength of the company.

7. Conclusion

From the findings of the study, probability coefficient of 0.0470 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between operating cash flow and net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0474 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between cash flow from investing activities and net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0474 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between cash flow from financing activities and net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0445 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between net cash flow and net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0062 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between investment on employee training and the net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0097is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between investment on employee education and the net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0062 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between investment on employee health and the net interest income of commercial banks in Nigeria. From the findings of the study, probability coefficient of 0.0192 is less than the critical value of 0.05 at 5 percent level of significant; the study concludes that there is significant relationship between employees differed wage pay and the net interest income of commercial banks in Nigeria.

8. Recommendations

Management efficiency is required in managing costs, increasing efficiency and financial performance of listed conglomerate companies in Nigeria. For managers to be more effective and to become more prudent and avoid undertaking risky investments their equity participation should be increased and although increasing financial leverage is one of the possible way of reducing the agency cost associated with equity by restructuring ownership claims at the same time changing the aims and aspiration of managers to fully

maximize the value of the company's assets at their disposal. Management should enhance the operational efficiency of the commercial banks and there is need to effectively and efficiently manage cash flow from investing activities of the commercial banks.Financial policies such as investment policy and capital structure policy should be directed towards achieving positive effect of cash flow from financing activities on profitability of the commercial banks. Management of commercial banks should investment more on employee education as this can make the employees acquire the needed knowledge in bank management such as credit appraisal that reduces the incidence of nonperforming loans and increase profitability.

References

Adebawojo, O. A., Enyi, P. E.; &Adebawo, O. O. (2015).Human asset accounting and corporate performance. American International Journal of Contemporary Research, 5(1), 45-52.

Adelakun, O. J. (2011). Human capital development and economic growth in Nigeria. Canadian Social Science Journal, 7 (2), 207-218

Adelegan, O. J. (2017). Investment, financial factors and cash flow from Nigerian panel data. Journal of African Development, 11(1), 77-108.

Adelegan, O.J. (2013). An Empirical Analysis of the relationship between cash flow and Divided charges in Nigeria. Journal of Research in Development and Management, 15(3), 35-49.

Akindehinde, A.O., Enyi, E. P., &Olutokunbo, A. O., (2015).Human asset accounting and corporate performance. Amencies International Journal of Contemporary Research 5 (1), 46-52.

Ali, M., Alireza, A. and Jalal, A.(2013).The association between various earnings and cash flow measures of firm performance and stock returns: some Iranian evidence. International Journal of Accounting and Financial Reporting, 3(1), 24-39.

Alma Harris, (2011),"Distributed leadership: implications for the role of the principal", Journal of Management Development, Vol. 31 Iss: 1 pp. 7 - 17

Alsaeed, K. (2005). The association between firmspecific characteristics and disclosure: The case of Saudi Arabia. The journal of American Academy of business, 7(1), 310-321.

Amuzu M. S (2010) Cash flow Ratio as a measure of performance of listed companies in emerging economics. The Ghana Example PhD thesis.

Becker, G. (1964). Investments in human capital: a theoretical analysis. Journal of Political Economy, 70, 9-44.

Chikashi, T. O. (2015). An investigation of comprehensive income and firm performance: the case of the electric appliances industry of the Tokyo stock exchange. Journal of Accounting and Finance Research, 2(12), 29-35.

Choi, I. (1995). Unit root tests for panel data. Journal of International Money and Finance 20, 249- 272.

Davies, S. D. (2018).Human resource accounting and shareholders wealth maximization: empirical study of Nigeria quoted manufacturing firms. International Journal of Business and Management Future; 2(1), 45-67.

Edom, G.O, Inah, E. U., &Adanma E., (2015).The impact of human Resource accounting in the profitability of a firm.Empirical Evidence from Access Bank of Nigeria Plc. European Journal of Accounting, auditory and finance research 3 (7), 72-90.

Enow, S. (2015). The working-capital management practices of small medium and micro enterprises in the Cape Metropole. Master's Thesis, Unpublished. Cape Town: Cape Peninsula University of Technology

Flamhotz, E. G., & Lacey, W., ((1981) Human resource accounting: A historical perspective and future implications. Management Decision, 40(10), 947- 954.

Frank, P.B. and James, K.O. (2014).An investigation of cash flow and corporate performance: A study of selected food and beverages companies in Nigeria. European Journal of Accounting Auditing and Finance Research, 2(7): 77-87.

Garson DG (2012) Factor Analysis: Statnotes. Retrieved January 12, 2012, from North Carolina State University Public Administration Program, http://faculty.chass.ncsu.edu/garson/PA765/statnote.htm

Gilchrist, S., &Himmelberg, C. (1995).Evidence on the role of cash flow for investment. Journal of Monetary Economics 36(3), 541–572.

Gujarati, D. N. (2003). Basic Econometrics, (4th ed.). New York, n. y.: McGraw-Hill.

Gyebi, F., &Quain, S. (2013). Internal control on cash collection.A case of the electricity company of Ghana Ltd, Accra East Region. International Journal of Business and Social Science, 4(9), 217-233

Ifurueze, M. S., Odesa, J. O., &Ifurueze, P. C. (2014). Impact of aggregated cost of human resources on profitability: an empirical study. Journal of Business & Management, 3(2), 30-43.

Ikpefan, O.A., Kazeem, B.L.O., &Taiwo J.U (2015).Human capital accounting and performance of microfinance bank (MFB) in Nigeria.Research Journal of finance and Accounting 6 (1) 67-75.

John Hampton, R. R., (2009). Spontaneous behavior of a rhesus monkey (Macacamulatta) during memory tests suggests memory awareness. Behavioural Processes, 72, 184–189.

Kaur, N. &Kapoor, R. (2007).Profitability analysis of public sector banks in India. Indian Management Studies Journal, 11(5), 167-181.

Kroes J., &Manikas A., (2014).Cash flow management and manufacturing firm financial performance: A longitudinal perspective. Int. J. Production Economics, 14(8), 37–50.

Lazear, E. P., (2001). Firm-Specific human capital: A Skill-Weights Approach. NBER Working Paper, 9679.

Levin, A., & Lin, C.F. (1992). Unit root test in panel data: New Results, University of California at San Diego, Discussion Paper 93-56.

Maddala, G.S. & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. Oxford bulletin of economics and statistics special issue, 631- 652

Maslow, A. (1943). Toward a psychology of being.Van Nostrand, Princeton, New Jersey.

Mathis, R.L., & Jackson, J.H. (2006). Human resource management, Singapore.Thomson Asia Pte.Ltd.

McGregor, D. M. (1960).The professional manager. New York, NY: McGraw-Hill.

Mehtari, Z. (2016). Analyzing operating cash flow and dividend payout changes. Journal of Accounting Knowledge, 5(23): 333-347.

Nwanyanwu, L. A. (2015). Cash flow and organizational performance in Nigeria: Hospitality and print media industries perspectives. European Journal of Business, Economics and Accountancy. 3 (3), 66-72

Nwanyanwu, L.A. (2015).Cash flow and organizational performance in Nigeria: hospitality and print media industries perspective. European Journal of Business, Economics and Accountancy, 3(1): 66-78.

Obisi, C., &Anyim, F.C. (2012).Developing the Human Capital for Entrepreneurship Challenges and Success. International Journal of Academic Research in Business and Social Sciences 2,(3), 69-89.

Parsian, H. & Amir, K. (2013). A study on the effect of free cash flow and profitability current ratio on dividend payout ratio: Evidence from Tehran Stock Exchange. Journal of Management Science Letters, 4(1):63–70

Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors.Oxford Bulletin of Economics and Statistics 61, 653670.

Pedroni, P. (2004). Panel cointegration: asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. Econometric Theory 20, 597-625.

Pesaran, M. H., & Shin, Y. (2003). A simple panel unit root test in the presence of cross-section dependence. Journal of Applied Econometrics, 22, 265-312

Phillips, P.C.B. & Moon, H.R. (1999). Linear regression limit theory for nonstationary panel Data.Econornetrica, 3(2),56-67.

Quah, D. (1994). Exploiting cross-section variations for unit root inference in dynamic Dataî, Economics Letters, 3(2), 44, 9-19.

Reheman, A.,&Nasr,M. (2017). Cash flow management from operating and profitability: Case of Pakistani. International Review of Business Research Papers, 3(1), 279 -300

Rehman, Z. (2012). Impact of relationship marketing tactics on relationship quality and customer loyalty: A case study of telecom sector of Pakistan. African Journal of Business Management, 6 (14), 5085- 5092.

Salman R.T., &Tayib, M. (2013).Intellectual capital measurement tools. International Journal on Social Science, Economic and Art, 2(2), 19-26.

Salop, J., & Salop, S. C. (1976). Self-selection and turnover in the labor market. Quarterly Journal of Economics 90 (4), 619–627.

Storey, D.J., (2014). The performance of small firms: profits, jobs and failures. Routledge: London.

Sumedrea, S. (2013). Intellectual capital and firm performance: a dynamic relationship in crisis time. Procedia Economics and Finance, 6, 137 – 144.

Sung, S.Y. (2014). Do organizations spend wisely on employees? Effects of training and development investments on learning and innovation in organizations. Journal of Organizational Behavior, 35(3), 393-412. 17.

Toby, A.J. (2006).Camel analysis, prudential regulation and banking system soundness in Nigeria. ICFAI Journal of Bank Management, 6(3), 43-60.

Wenzel, R., (2017). Learning for Purpose: Challenges and Opportunities for Human Capital Development in the Social Sector. In Leading and Managing in the Social Sector,3(7), 113-137.

Yusuf, I. (2011). The relationship between human capital efficiency and financial performance: An empirical investigation of quoted Nigerian banks. Res. J. Finance Account, 4 (4), 148-155.

Zehri, C., Abdelbaki, A., &Bouabdellah, N. (2012). How intellectual capital affects a firm's performance. Austrian Journal of Business and Management Research, 2(8), 24-31.

Zhou, H, Yang, S. and Zhang, M (2012).Relationship between free cash flow and financial performance of listed real estate companies in China.Online science journal. 2(36): 331-335.