# Coronavirus Pandemic and Bank Performance in Nigeria

**OSUJI, Casmir Chinemerem[1] & IYADI, Chuks[2]**
Banking and Finance Department,
Faculty of Management Sciences,
Delta State University,
Abraka
Corresponding Author: osujicasmir4@gmail.com

DOI: 10.56201/jafm.v10.no4.2024.pg177.188

***Abstract***
*The study investigated the effect of coronavirus pandemic on Banks in Nigeria. The Casual Comparative Design (Ex Post Facto Design) was used in the study to compare the liquidity (LIQ), Non-performing loan ratio (NPLR) and Return on Equity (ROE) on before COVID-19 plaque period (year 2017-2018) and that of the liquidity (LIQ), Non-performing loan ratio (NPLR) and Return on Equity (ROE) of during COVID-19 plaque Period (year 2019-2020) in order to examine the effect of Covid-19 Pandemic on the Performance of DMBs in Nigeria. The study's population is comprises of all the thirty- three (33) Nigerian DMBs, and the population also serves as the sample size because the study relied on aggregate secondary data that included L1Q, NPLR and ROE variables for Nigerian DMBs before and during Covid-19 era. The Nigeria Deposit Insurance Corporation (ND1C) Annual Reports for the years 2017–2020, the CBN Statistical Bulletin, and the CBN Bank Supervisory Annual Report provided the study's data. The collected data was analyzed using Wilcoxon statistical test tool operated with SPSS version 20. The findings of the study revealed that Coronavirus disease 2019 pandemic has significant impact on liquidity, non-performing loan and return on equity of DMBs in Nigeria. The report suggested that the CBN implement measures to address the issue of deposit money banks' illiquidity, or their inability to keep up with daily customer withdrawals, as a result of the COVID-19 plaque. The Central Bank of Nigeria should also made funds available for DMBs to cushion the effects of the rising numbers of non-performing loans during the COVID-19 plaque.*

***Keywords:*** *Covid-19 Pandemic, Liquidity, Non-Performing Loan and Return on Equity.*

## 1.1 Introduction

Nigeria health Sector in Nigeria received Covid-19 deadly disease with surprise and panic because of state of the health sector. The Nigerian health sector lack basic medical facilities and insufficient qualified medical personnel, this has resulted to medical tourism oversea in recent time by the rich Nigeria who can afford it, while the poor die in their numbers for lack of adequate health care. The outbreak of Covid-19 disease in Nigeria exacerbated the hardships of the already pauperized citizens by host of other economic quagmire. In 2020, Iwedi, Kocha, and Onaakpono observed that the Covid-19 pandemic-related health crisis in Nigeria exacerbated the country's economic recession, job losses, high inflation, rising crime and unemployment rates, among other issues. Covid-19 Pandemic came in numbers of waves. The Pre Covid-19 Pandemic (2017-2018) era was when the Nigeria Nation had economic recession, and the economic came out of the recession and was just recovering before the emergence of Covid-19 Pandemic. After this period was the first wave period of Covid-19 Pandemic (2019-2020). The first wave actually started in Nigeria in the year 2020. A case was confirmed in 27th of February 2020 in Lagos Nigeria was the first case. On February 25, 2020, the Italian citizen in question—who works in Nigeria—returned to Lagos from Milan, Italy. The Nigeria Centre for Disease Control's Laboratory Network, which includes the Lagos University Teaching Hospital's virology laboratory, provided the diagnosis (Nigeria Centre for Disease Control, 2020).

The second wave Covid-19 disease was after the first which brought about lock down of the entire Nation for some months. Different variants of the Covid-19 plaque emerged such as delta variant. Banks are allowed to operate under the restriction of social distance and good hygienic conditions. Banks had had to adopt measure coup with insufficient cash flows as many are unable to bank their cash because of time it takes to enter into the banking halls. The third wave is a prediction that is yet to come to pass.

The lockdown of the entire nation in a bid to curtail the disease brought a lot of hardship and disturbances to individual and businesses. This affected individual, companies, banks and others in several ways. Companies and banks had to adopt measure to manage cash as liquidity problem had set in. if the government has challenge with liquidity and patronage, this will certainly affect return on equity (ROE). Owing to the country's lockdown, companies, importers, manufacturers, and others—aside from those operating in the food, grocery, and health sectors—were permitted to trade under certain constraints. The effect is that the banks with other business ventures had the challenge of liquidity. Hence, there is a need for management of cash. Amnim, Aipma, and Obiora, (2021) opined that management of cash is critical to every business to pay short-term financial obligations as they fall due. Akinsulire (2013) also stated that the achievement of any business venture is hinged on the management planning and control of cash flows. If there is little or no business at all as because of the lock down, the cash flow to bank would be so low. The problem of nonperforming loans would arise. Kozak (2021) observed that, despite having sufficient capitalization, banks in Central Eastern South Europe had a nonperforming growth of 12%. Profitability would therefore be impacted by this. DMBs must be seen to develop resilience to adapt to the reality of the challenges. It is observed that resilience of domestic banking sectors varies, and it is higher in non-EU countries. Although they carry a slightly higher risk of delaying the provisioning of credit risk and increasing lending to reduce the ratio of nonperforming loans, smaller, private banks demonstrate a better capacity to manage the right amount of equity. In times of crisis, larger banks tend to be more profitable (Koznk, 2021). There has not been known empirical research on the effect of Covid-19 disease on DMBs performance in Nigeria. A study done by Kocha, Iwcdi and Barisua (2020) which stressed on COVID-19 outbreak, oil price shock und banking system liquidity is near to this study. There exist empirical research on the impact of Coronavirus 2019 disease on liquidity, non-performing loan and profitability in Nigeria. This study aimed to fill the gap of providing the effect of Covid-19 disease on the liquidity, non-performing loan and profitability of DMBs in Nigeria.

**1.2 Statement of the Problem**

Generating a profit for the shareholders is a critical and significant responsibility of DMB management. The shareholders evaluated banks based on their ability to provide a sufficient and suitable Return on Equity. Profitability of banks is function of liquidity and good credit management and others. Creditors must be seen to service loans regularly; the banks must preserve or make more customers. The bank must be liquid for all these to come to play. Any economic disturbance such as Covid-19 plaque can hinder realizing these objectives.

During COVID-19, all sectors of the Nigerian economy have been impacted by the plaque eruption, the shutdown of major cities, and the subsequent devaluation of the country's currency due to the decrease in crude oil prices. Nigerians who can afford it have been travelling abroad for medical treatment due to the country's lack of basic medical facilities and highly qualified medical staff, while the country's impoverished population has been dying from a lack of access to quality healthcare. The outbreak of Covid-19 disease in Nigeria makes the case worse for citizens of Nigeria already having myriad of problems. The health predicament leading to lockdown occasioned by Covid-19 plague in Nigeria may have led to economic recession, job losses, high inflation, increase crime rate, increase unemployment rate and others. The largest worldwide economic catastrophe since the global financial crisis of 2007–2009 was brought on by the coronavirus disease in 2019, according to Kozak (2021). Banks and other actual financial sectors were severely impacted. There have been employment losses in the financial industry, as well as in households and businesses. Prices of commercial real estate have dropped, liquidity and corporate profitability have decreased, central bank interest rates have dropped, and public debt (non-performing loans) has increased. One hypothesis is that the risk elements associated with banks have increased dramatically, such as credit, market, and operational risk. Credit risk may be at its highest point due to nonperforming loans.

If Kozak (2021) is right when he says that the banking industry is still exposed to extraordinary risk despite the first half of 2021 seeing a decrease in the impact of COVID-19 and an improvement in economic activity. Kozak (2021) investigated how the Covid-19 pandemic affected the performance of banks in Central Eastern South Europe and found a correlation between the pandemic and bank outcomes in the region. It then means therefore that Covid-19 deadly disease has effect on the DMBs in Nigeria since it began and the same may have perhaps continued to affect the banking sector liquidity and returns on equity among others. This study is aimed to provide answer to this.

### 1.3. Objective of the Study

This study examined the effect of COVID-19 disease on DMBs performance in Nigeria. Covid-19 disease as the independent variable is proxy by period before the COVID-19 plaque and during the COVID-19 plaque, while DMBs the dependent variable is proxy by Liquidity and Return on Equity. The specific objectives include; to

1. Investigate the effect of Pre Covid-19 on Liquidity (LIQ) of DMBs in Nigeria.
2. Determine the effect of Covid-19 first wave on Non-performing loan ratio (NPLR) of DMBs in Nigeria.
3. Examine the effect of Covid-19 second wave on ROE of DMBs in Nigeria.

### 1.4 Research Hypothesis

The following hypothesis were formulated in line with objectives of the study

**HO$_1$:** Covid-19 has no significant effect on DMBs LIQ in Nigeria.

**HO$_2$:** Covid-19 has no significant effect on DMBs NPLR in Nigeria.

**HO$_3$:** Covid-19 has no significant effect on DMBs ROE in Nigeria.

## 2.1 Renew of Literature

This section therefore focuses on conceptual issues, theoretical review and empirical literature.

### 2.2 Conceptual Review

#### 2.2.1 Covid-19 Pandemic

Covid-19 according to Faisal, (2021) is a viral disease caused by emerging corona virus strain otherwise known as Severe Acute Respiratory Syndrome corona virus 2 (SARS-Cov-2). It was first detected in December 2019 in China. Within four months of detection, corona virus has spread to almost all the countries of the world, infecting millions and killing hundreds of thousands. The strain virus causes common cold and more severe respiratory diseases. The majorsymptoms are: Fever, cough, -sore throat and tiredness. There are no approved medicines for the disease yet.

Covid-19 is a highly infectious disease. Those infected and are showing signs and symptoms are major sources for spreading the virus. However, some people can be cohorts or carriers who have been infected but arc not manifesting symptoms of the disease can also transmit the virus. It is a Pandemic as declared by the world Health Organization (WHO). Faisal, (2021) stated that the virus hits spread at unprecedented speeds across borders, ultimately affecting 84.5 million people and contributing to 1.84 million deaths and still counting. The hardest hit have been the most vulnerable, i.e the elderly populations, frontline health care workers, and persons with underlying diseases such as hypertension, heart diseases, diabetes etc. The second wave of the Con'd-19 pandemic after the lockdown period saw the introduction of vaccination as a critical part of Nigeria’s strategy to interrupt the Covid-19 and curb the transmission of the virus. This is a bid to stop the Pandemic into escalating to the third wave. To what extent can the vaccine curb the transmission has be a debate of recent time as it appears that vaccine does not stop the vaccinated of contracting the diseases and even dying of it.

The period 2021 saw the manifestation of the second wave of the virus with different variant such as high resistant delta variant. The Nigeria as a nation could not afford to lockdown again with all the effect of the first lockdown not abating or waning yet. There has been vigorous campaign for vaccination against the scourge. Some state governors try to make the vaccine compulsory especially for workers without which they would not be allowed to enter work premises. Example of the state governor pushing it aggressively is the Edo state Governor Obaseki. It could be that he is unaware of the right of the citizens not to force to take the vaccine and other measure to build resilience against the scourge of the Pandemic.

### 2.2.2. Liquidity

The ability for an entity to pay its short term financial obligations as they fall due is liquidity. A firm is also adjudged to be solvent if it has no capacity to meet its long term financial obligations (Omaliko & Okpala, 2020). It is the entity ability to convert its assets into cash. Short term refers to obligations which mature within one accounting year. Bank liquidity according to Olagunju, et, al. (2011) means the capacity of the bank to guarantee the availability of funds to pay financial transaction commitments .The alertness and readiness at all time with money to satisfy customer’s withdrawer gives the bank good image and thereby avoiding bank runs with its effect. The continued existence of the bank to a large extent depends on it. Adequate liquidity of the banks is a valuable aid for meeting customers’ loan demand, with ease and favourable conditions. It will also enhance stability of operations and boost earning. The maintenance of sufficient liquidity to meets customer’s commitment is an essential priority of banking (BCBS, 2019). Anyanwu. (2003) argued that liquidity deficiency, no matter how small, can cause inconceivable disturbance to a financial institution’s operations and customer’s relationship. However, the bank must strike a balance between liquidity and excess liquidity. Keep of excess money in the bank could lead to many risks. For the idea of keeping excess cash for the purpose of meeting customers’ needs means forgoing earnings on it.

### 2.2.3 Non-performing Loan

Banks in fragile and conflict-affected environments suffer numerous constraints that limit and hinder their ability to properly respond to a crisis of the scale of COVID-19. With a forecasted increase in nonperforming loans, the financial sector has taken a knock across the globe. Financial system shocks such as ballooning nonperforming loans, insolvency filings, asset fire sales, and needless liquidations are being caused by declines in loan demand and individual earnings. Loss of income in the banking system will increase bad debts, lower capital ratios, put pressure on secondary mortgage markets, and generate liquidity issues, as has been the case in the pre- and post-Covid-19 era. Because the COVID-19-induced global systemic shock has a large influence on capital markets, SMEs and enterprises with significant debt in foreign currencies are particularly vulnerable. In Nigeria, the central bank has declared a suspension on interest and principal payments by SMEs as part of its directed lending strategy, in response to *financial* sector stress, and has encouraged banks to extend the maturities of all loans as needed (IFC, 2020).

**2.2.4 Return on Equity (ROE)**

ROE is a measure of great interest to shareholder. It is an important measure because it is, a true bottom line measure of performance which reflects the productivity of the ownership (or risk) capital employed in the firm. ROE measures the profitability of equity funds invested in the business. It is influenced by several indices such as earning power, debt-equity ratio, average cost of debt funds, and tax rate. It should be noted that the historical valuation of assets imparts an upward bias to profitability measures during inflationary period. This exists as a result of the numerator of these measures represents current values, whereas the denominator represents historical values. ROE is usually defined as: Equity/Average Equity.

2.3. **Theoretical Review**

The theoretical review stands to elicit theories that support or back the concept of the variable of interest as means of acceptance and validation of knowledge. The following theories were advanced to back the concept of Covid-19 Pandemic: Rational Choice Theory, Liquid Assets Theory and Diamond-Dybvig Model.

**2.3.1 Rational Choice Theory**

The Rational Choice Theory or Choice theory is a principle that states that individuals rely on rational permutations to make informed and prudent choices that bring about satisfaction of their interest (Hope, Saidu & Success, 2020). The Nigeria Nation was on lock down during Covid-19 plaque, banks still find a way of doing business, attending to especially firms that areconsidered essential and try to satisfy other customers through ATM machine with opening to customers on skeletal bases. The need to maintain liquidity to satisfy customers, create a way for borrowers to service their debt even if it would mean deb, renegotiation and still remain profitable to satisfy the shareholders were the major resilience strategy driving DMBs in the period of'Covid-19 Pandemic.

**2.3.2 Liquid Assets Theory**

Liquid Asset theory's defined us u way in n short amount of time that firms can easily convert asset into cash. As a safeguard against potential depositor requests for payment, the idea suggested that banks should maintain a strict policy of keeping a sizable quantity of liquid assets on hand. Marketable securities, cash, and money market instruments are examples of liquid assets. Concerns regarding managing short-term liabilities when they become due and liquid assets as a percentage of net worth affect both individuals and organisations. According to Nzotta (2004), the amount of liquid asset depends on a number of factors, including the government's level and direction of monetary policy, the health of the financial market, the anticipated need for liquidity, and the volatility and unpredictability of its deposits. The profitability of banks or businesses determines the appropriate degree of liquidity.

**2.3.3. Diamond-Dybvig Model**

It is a known fact that Depositor acting as creditors in relation with financial intermediaries face liquidity risk in sense of possibility needing liquid funds. The trade -off between liquidity and return forces them to hold their wealth (at least partially) in form of bank deposits. In this vein, a model of banks as liquidity source focuses rather on bank liabilities than on bank assets. In the famous Diamond-Dybvig model (1983), deposit does not know beforehand whether they will face liquidity needs in the future. Therefore, hanks male less liquid, thereby reducing their profit opportunities in order to provide depositors, who withdraw their deposits with liquid assets. The corporate governance to depositor is a strategy of satisfaction to the depositor to prevent possible dissatisfaction leading to asset withdraws. Asset would have adverse effect on the bank operations. If ninny depositors withdraw, others arc pushed to imitate this behavior, which produces phenomenon called bank runs.

Consequently, the banks is at a critical junction of a tight spot, either to invest in short term liquid assets and not to performing their term-transformation junction or to invest (at least partially) in the long-term assets and thus face the possibility of bank runs. Insured deposit contract has been advanced as a solution to this. This is a guarantee that depositor will get their money back and this prevents bank runs ultimately.

**2.4 Empirical Literature**

Amnim, Aipma, and Obiora (2021) examined the impact of the Covid-19 plaque on the liquidity and profitability of Nigerian businesses using the Wilcoxon test tool and SPSS version 20. It was discovered that there was a considerable positive difference in the liquidity ratios of enterprises before and during the COVID-19 epidemic. This result showed how seriously the COVID-19 pandemic affected the liquidity of Nigerian basic product companies. The study's findings are in line with those of Wakode (2020) and Kocha, Iwedi, and Barisua (2020), who discovered that the COVID-19 epidemic considerably increases the liquidity of businesses. Additionally, the Covid-19 epidemic affected business profitsThere is a noticeable positive difference between the ROE of businesses before to the Covid-19 Pandemic Period and the ROE of businesses during the Covid-19 Widespread Period. This suggests that the COVID-19 epidemic has improved enterprises' return on equity. According to the study, a company's return on equity decreases when COVID-19 is prevalent. This is also in line with studies by Dcmirguc-Kunt, Pediaza, and Ruiz (2020) and Hope, Saidu, and Success (2020), which discovered a significant positive link between the COVID-19 pandemic and business performance.

Kozak (2021) looked analysed how 141 banks in 18 Central Eastern South European (CESE) countries' equity levels and profitability were affected by the shock increase in the value of nonperforming loans. The results demonstrated that the banks in CESE were adequately funded and able to meet capital requirements, even with a 12% increase in nonperforming loans. The study conducted by Sultana Razia, Sarnia Afrin Shetu, and Rezaul Karim (2021) examined the liquidity, financial health, and COVID-19 state of the South Asian economy. The study's findings demonstrate that the listed banks' overall financial health and liquidity situation deteriorated following the start of the COVID-19 pandemic. The banks' poor financial status and weak liquidity ratios predated the epidemic, but as of the second quarter of 2020, these problems have gotten worse. Some of the significant declines have given rise to a potential risk of bankruptcy. Hope, Saidu, and Success (2020) looked into the connection between Nigerian enterprises' performance and the coronavirus 2019 prevalence. The results of their linear

regression study showed that the widespread coronavirus 2019 sickness is endangering the financial and non-financial performance of private firms in Nigeria. According to research conducted by Adegboye, Adekunle, and Gayawan (2020), less cases of Covid-19 were reported in Nigeria than was initially thought. Between January 2, 2020, and April 16, 2020, Adenomon and Maijamaa (2020) looked into the impact of Covid-19 on the Nigerian Stock Exchange. Their research revealed that throughout the Covid-19 period in Nigeria, stock returns decreased and were highly volatile. Because of the dire health conditions in African nations, Ohia, Uakarcy, and Ahmad (2020) predicted that COVID-19 will have a devastating effect on the continent. There is a perception that Nigeria's health services are ill-prepared to handle the growing number of patients who require admission to intensive care units as a result of infections. In order to fight the Covid-19 pandemic, it was advised that the Nigerian government seek alliances with other organisations.
Jacob, Abigeal, and Lydia (2020) claim that the COVID-19 epidemic caused disruptions in Nigerian higher education institutions' academic calendars, decreased the amount of international education, cancelled local and international conferences, and interrupted schools. These activities led to a staffing shortfall, a reduction in the funding for higher education, and a gap in teaching and learning. There is a significant correlation between the Covid-19 epidemic and the Chinese financial market, as reported by Xinhuao (2020). This explains why, in contrast to foreign markets, the Chinese financial market has remained reasonably stable despite the widespread presence of the corona virus. Iwedi, Kocha, and Onakpono (2020) investigated how the COVID-19 epidemic affected both the global and Nigerian economies. Using a descriptive methodology, the study assessed the COVID-19-related global trade wars and their effects on the Nigerian economy. The results of the study show that Nigeria's social, religious, and economic domains were negatively affected by the coronavirus. Concurrently, the endeavours to curb the proliferation of Covid-19 led to joblessness, price increases, the total breakdown of healthcare, and a downturn in educational offerings.
A ten-year study on the impact of the Covid-19 pandemic on Ethiopia's private banking industry was carried out by Tesfaye (2020). It was discovered that the banks' balance sheet and income statement were impacted by the outbreak. Wakode (2020) looked on the effect of COVID-19 on banks' credit exposure as well. The researcher's multivariate analysis of variance indicates a substantial correlation between the bank risk indexes and Covid-19. Demirgue-Kunt, Pediaza, and Ruiz (2020) looked at the effects of the banking industry's performance during the COVID-19 crisis. The analysts claimed that while non-banking financial enterprises grew, the banks were under a great deal of stress because to Hank stocks' poor performance in the domestic market. Baret, Celner, O'Reilly, and Shilling's 2020 study looked at the impact of the Covid-19 pandemic on banks and the financial industry. The report claims that Covid-19 had a significant effect on the world financial markets, which caused the price of stocks, bonds, oil, and other assets to drop during this period.
Kocha, Iwedi, and Barisua (2020) investigated the prevalence of COVID-19, the effects of the oil price shock, and the liquidity of the Nigerian banking sector by using a regression model to assess the data. They discovered a strong positive association between COVID-19 and shifts in the liquidity of the nation's banking sector. On the other hand, the results of the oil price drop suggest that there is a significant negative relationship between the liquidity of the banking sector and the price of oil. The Johansen co-integration test results show that the series is co-integrated, indicating a long-term link. The results of the Granger causality tests showed that there is evidence of both one-way and two-way causality between COVID-19 and banking system liquidity, but not between the oil price shock and banking system liquidity. Based on

this, the study shows that COVID-19 and oil price shocks had a significant effect on the liquidity of Nigeria's banking industry.

### 3.1 Methodology

The Causal Comparative Design (Ex Post Facto Design) was utilized in the investigation to compare the Liquidity (1.10). Non-performing loan ratio (NPLR) and Return on Equity (ROE) before COVID-19 Pandemic Period (year 2017-2018) and that of the Liquidity (LIQ), Non-performing loan ratio (NPLR) and Return on Equity (ROE) in time of COVID-19 Pandemic phase (year 2019-2020) in order to study the effect of Covid-19 Pandemic on the Performance of DMBs in Nigeria. The study's population is made up of all the thirty-three (33) Nigerian Deposit Money Banks, and the population also serves as the sample size because the study relied on aggregate secondary data that included LIQ, NPLR and ROE variables for Nigerian DMBs before and during Covid-19 era. Data for the study were obtained from the CBN Bank Supervisory Annual Report, CBN Statistical Bulletin and Nigeria Deposit Insurance Corporation (NDIC) Annual Reports for the period 2017-2020. The data collected was analyzed using Wilcoxon statistical test tool operated with SPSS version 20.

1. **Operationalization and Measurement of Variables**

DMBs were decomposed into three dependent variables in this examination. The two dependent variables are Liquidity (LIQ), Non-performing loan ratio (NPLR) and ROE. This is demonstrated as follows:

**Table 1: Variable Measurements**

| **S/N** | **VARIABLES** | **FORMULA** |
|---|---|---|
| | **Dependent** | |
| **1** | **Liquidity** | **LIQ: Current Assets/ Current Liabilities** |
| **S/N** | **VARIABLES** | **FORMULA** |
| | **Dependent** | |
| 1 | **Liquidity** | **LIQ**: Current Assets/ Current Liabilities |

### 4.1: Data Presentation

Find on table 2 the data (i.e variables) needed for the study and same were used in the data analysis of the study.

**Table 2: The Aggregate Data of 33 Deposit Money Banks before and during COVID-19 Pandemic in Nigeria**

| Year | Liquidity (LIQ) (%) | Non-Performing Loan Ratio (NPLR) (%) | I Return on Equity (ROE) \| 1 <%) |
|---|---|---|---|
| **Before COVID-19** | | | |
| 2017 | 51.87 | 11.76 | 17.80 |

| | | | |
|---|---|---|---|
| 2018 | 45.56 | 14.84 | 22.30 |
| **During COVID-19** | | | |
| 1 2019 | 49.78 | 7.15 | 25.80 |
| 1 2020 | 45.45 | 6.06 | 8.12 |

**Source: CBN Bank Supervisory Annual Report, CBN Statistical Bulletin and Nigeria Deposit Insurance Corporation (NDIC) Annual Reports, (2017-2020).**

### 4.2. Analysis Result and Hypotheses Testing

Using the Wilcoxon Statistical Test Fool, the association between the dependent and independent variables was examined diagnostically. A statistical comparison of the average of two dependent samples is known as the Wilcoxon sign test. The Wilcoxon sign is typically used as a non-parametric substitute for the dependent samples t-test when dealing with metric (interval or ratio) data that is not multivariate normal or with ranked or ordinal data. The null hypothesis, according to the Wilcoxon sign test, is that the average signed rank of the two dependent samples is zero. The null hypothesis for the marginal homogeneity test is that there are equal differences in both directions between the two samples. Although it employs nominal variables with more than two levels, the test is comparable to the MeNemar test. It determines whether there are any notable deviations from the predicted count between the observed differences in the n*m matrix, which includes every possible combination. An analysis of significance using Chi-Square is used. As indicated in Table 4.1 below, SPSS version 23 was used to conduct the Wilcoxon marginal homogeneity test.

**Table 4.1: Wilcoxon Marginal Homogeneity Test**

| | LIQBEFORECOVID19& LIQDURINGCOVID19 | NPLRBEFORECOVID19& NPLRDURINGCOVID19 | ROEBEFORECOVID19& ROEDURINGCOVID19 |
|---|---|---|---|
| Distinct Values | 4 | 4 | 4 |
| Off-Diagonal Cases | 2 | 2 | 2 |
| Observed MH Statistic | 97.430 | 26.600 | 40.100 |
| Mean MH Statistic | 96.320 | 19.905 | 37.010 |
| Std. Deviation of MH Statistic | 1.056 | 4.958 | 8.141 |
| Std. MH Statistic | 1.051 | 1.350 | .380 |
| Asymp. Sig. (2-tailed) | .023 | .017 | .004 |

**Source: SPSS Version 23 Output, 2021.**

**H01:** COVID-19 Pandemic has no significant effect on DMBs Liquidity (LIQ) in Nigeria.
Table 4.1, which presents the results of the above analysis, indicates that there is a significant positive difference between the LIQ of DMBs prior to the COVID-19 pandemic period and the LIQ during the pandemic period. This further confirms that the COVID-19 outbreak had a major impact on the liquidity of DMBs in Nigeria. Table 4.1's P-value of 0.023, which indicates that the test is deemed statistically significant, might be used to support this. As 0.023 is less than the predetermined value of 0.05, the null hypothesis was thus rejected. This is consistent

with what Amnim, Aipma, and Obiora (2021) found. Wakode (2020), Rezaul, Sarnia, and Sultana (2021).

**H0$_2$:** COVID-19 Pandemic has no significant effect on DMBs Non-performing loan ratio (NPI.R) in Nigeria.

Based on the study presented in Table 4.1, it can be inferred that there was a noteworthy increase in the NPI.R of DMBs prior to the COVID-19 pandemic compared to the NPLR of DMBs during the same period. This helps to clarify how the COVID-19 epidemic impacted DMBs' NPLR. The COVID-19 Pandemic raises banks' net present value ratio (NPLR), as the study suggests. The test is deemed statistically significant with a p-value of 0.017. The null hypothesis was thus rejected because 0.017 is less than the predetermined value of 0.05. This is consistent with what Kozak (2021) found.

**HO3:** COVID-19 Pandemic has no significant effect on DMBs Return on Equity (ROE) in Nigeria.

The results of the aforementioned analysis, as displayed in Table 4.1, indicate that there is a statistically significant positive difference between the ROE of DMBs before to the COVID-19 Pandemic Period and the ROE of DMBs during the Pandemic Period. This explains in further detail how the COVID-19 epidemic impacted DMBs' return on equity (ROE). With a p-value of 0.004, the test is deemed statistically significant. COVID-19 Pandemic lowers DMB ROE. Due to 0.004 being less than the predetermined value of 0.05, the null hypothesis was thus rejected. The findings of Wakode (2020), Hope, Saidu, and Success (2020), Demirgue-Kunt, Pediaza, and Ruiz (2020), and Amnim, Aipma, and Obiora (2021) are congruent with this.

## 5.1 Conclusion

Following the statistical analysis and the findings, the study concludes that COVID-19 Pandemic has significant impact on liquidity, non-performing loan and return on equity of DMBs in Nigeria.

## 5.2. Recommendation

In light of the study's conclusions, the following suggestions are made:

i. The CBN should put modalities in place to solved the problem of illiquidity (inability to meet up with customers daily withdrawal) of DMBs as a consequence of the CO VID-19 widespread.
ii. Secondly, funds should be made available by the Central Bank of Nigeria (CBN) for DMBs to cushion the effects of the rising numbers of non-performing loans during the COVID-19 Pandemic.
iii. Finally, the CBN should implement policies that will increase the ROE of the DMBs, since it was adversely affected by the pandemic.

## Reference

Adcgboyc. (). A.. Adckunle, A. I., and Gayawan, I . (2020). Early transmission Dynamics of Novel Comnavinis (COVID-19) in Nigeria. *International Journal of Environmental Research amt Public Health*,7(0), 3054.

Adenomon. M. ().. and Maijamaa, M. (2020). On Oie Effects of COVJD-19 outbreak on the Nigerian Slock Exchange performance: Evidence from GARCH Models.

Akinsulirc, O. (2013). *Financial management*, (4lhcd), Nigeria: Cccmol Nigeria Limited

Amnirn. O. E. I... Aipma. O. P. C., and Obiora, O. F. (2021). Impact of Covid-19 Pandemic on Liquidity and profitability of Firms in Nigeria, *International Journal of Academic Research in Business and Social Sciences, 5 (3).*

Anyanwu. J. C. (2003). *Monetary Economics: Theory, Policy and Institutions,* Benin City:Hy brid Professional Publishers Ltd,

BareL S.. Cclner, A., O'Reilly, M., and Shilling, M. (2020). Covid-19 potential implications for the banking and capital markets sector, Maintaining business and operational resilience.

Demirgue-Kunt. Pedraza and Ruiz. (2020). Banking sector performance during the Covid -19 crises. *The WorldBank Policy Research working paper series*, 9363.

Diamond, D. and P Dybvig, (1983). Bank runs, deposit insurance, and liquidity, *Journal of Political and Economy, 91(3),* 401-419.

Faisal, S. (2021). Training Manual for Covid-19 Vaccine Introduction in Nigeria: National Primary Health Care Development Agency.

Hope, O., Saidu, M., and Success, A. (2020). Coronavirus pandemic outbreak and firm's performance in Nigeria, *Management and Human Resource Research Journal* 9(4), 15-25 httr>s://ncdc.uov.mz/ne\vs/227/first-case-of-corona-virus-disease-confirmed-innigeria retrieved on November 23,2021.

International Finance Corporation, IFC (2020). The Impact of COVID-19 on Disruptive Technology Adoption in Emerging Markets. *IFC Insights*. https://\\w.ifc.oru/vvps/vvcm/connect/ncus ext contenEilc external corporate site'newsman d-cvcnts/news/insights/matching-workcis-with-iobs-amid-covid- IQ'.MclivLTvName-DM65744.

Iwedi, M., Kocha, C. N. and Onakpono, A. E. (2020). Covid-19 pandemic, global trade wars and impact on the Nigeria Economy. *Academic Journal ofCurrent Research,* 7(5), 71-82.

Jacob, O. N., Abigeal, I., and Lydia, A. E. (2020). Impact of COVID-19 on the Higher Institutions Development in Nigeria, *Electronic Research Journal of Social Sciences and Humanities, 2*,126-135.

Kocha, C., Iwedi, M., and Barisua, S. (2020). COVID-19 outbreak, oil price shock and banking system liquidity: the Nigeria Evidence, *Greneer Journal of Economics and Accountancy*,5(1), 6-11

Kozak, S. (2021). The impact of Covid-19 on Banks Equity and performance: the case of Central Eastern South European Countries, *MOPI Sustainability,* 73(11036),NCDC. (2020) First Case of Corona Virus Disease Confirmed In Nigeria

Nigeria Bureau of Statistics. (2019). Statistics on COVID-19 Pandemic in Nigeria

Nzotta, S. M. (2004). *Money, Banking and Finance: Theory and Practice* (2nd cd.). Owenri: Hudson-Jude Nigeria Publishers.

Ohia. C., Bakarey, A. S., and Ahmad, T. (2020). COVID-19 and Nigeria: Putting the realities in context. *International Journal of Infectious Diseases*

Olagunju, A. Adeyanju Olarewaju, David, and olabode, S. (2011). Economics Research Journal of Finance and Accounting 2 (7/8)

Omaliko, E., and Okpala, N. (2020). Effect of TSA on solvency of listed deposit money banks in Nigeria. *World Journal of Finance and Investment Research*, 5(1), 32-47

Rezaul, K., Sarnia, A. S. and Sultana, R. (2021). Covid-19, Liquidity and financial health: South Asian Economy. *Asian Journal of Economics and Banking, 5 (3).*

Tesfaye, B. L. (2020). The impact of Covid-19 on the Ethiopian private banking system. Published PhD thesis of University of South Africa.

Wakode. S. (2020). Efficacious scrutinizing of COVID-19 impact on banking using credit risk metrics, *International Journal of finance and Banking Research,* (5(3), 51-56.

Xinhuao. (2020). China Financial market remains stable and Covid-19 impact, China Daily Hong Kong