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SUSTAINABLE BANKING PRINCIPLES AND PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA: AN ECONOMETRIC ANALYSIS

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ABSTRACT

The study looked at sustainable principles and the performance of DMBs Nigeria for 2000-2020. The actual objectives include assessing the indicators of sustainable principles of banking, such as the ATM, CPS, LR and CR, as well as how DMBs' performance measured by the ROA is affected by those factors. Data were retrieved from CBN documents such as bank supervisory annual report, statistical bulletin, and the NDIC annual reports for the period 2000-2019 were used as a secondary source of data (time series data) in this study. The findings revealed that ATM and CPS have a negative yet not significant effect on the ROA of DMBs, whereas LR and CR which also revealed a negative effect on ROA were significant after all. Following the outcome of this result, it was agreed that a mixed association exists between sustainable principles of banking and performance. Hence, the recommendation that modalities

be put in place to effectively and efficiently adopt sustainable principles of banking in Nigeria, so as to ensure that banks deliver better services to their clients as well boosting profits.

Keywords: Sustainable Banking Principles, Bank Performance, Econometric Analysis.

INTRODUCTION

Banks being the country's financial sector's corporate leaders are uniquely positioned to aid Nigeria's economic growth and subsequent development through controlled lending and investment. However, the environment that business-related decisions are made is made up of by complex and growing challenges such as population growth, urban migration, poverty, biodiversity and ecosystem destruction, pressure on food sources, prices, and security, and potential climate change legislation from our trade partners, to name a few. Nigeria's development imperative is becoming increasingly clear: it must be both economically and socially viable (CBN, 2012). It is however worthy to highlight that a sound financial system is key to economic stability and financial progress in all parts of the world (Osiegbu & Onuorah, 2011).

The Bankers' Committee accepted these principles following the need to recognize banks' role and responsibility in providing positive and development-driven impacts to society while also safeguarding the society within which we operate. We are optimistic that a sustainable approach to banking is agreement with our personal and general business objectives, and that it can help to promote growth in economy and opportunity, as well as boost innovation and competitiveness (CBN, 2012).

The banking industry was pushed to embrace and invest in environmentally healthy products and services that would avoid environmental degradation and stay up with global trends of "green" policies as well as practices. Given the aforementioned situation, Nigeria's CBN introduced the Sustainable Banking Principles (SBPs) to be observed by DMBs, DHs, and DFHs from 2012 onwards, and the year 2014 witnessed the emergence of the first document called full "Sustainable Banking Report" (Dugelay, Asiru, Atuluku & Thomas, 2017).CBN (2012) maintains that the main purpose of the SBPs was to ensure a beneficial outcome on the society while ensuring that the community at large and the institution's environment are protected. To satisfy the general goal of the SBPs, three industries were chosen as priority sectors including: power, agriculture, and oil & gas (Aro-Gordon, 2016).

If great efforts require a first step, then the SBPs are surely the first major steps towards seeing that sustainability is achieved as far as the banking sector in Nigeria is concerned. It portrays that not all signatories are starting from the same location. Hence, it is pertinent that we appreciate the need for a step-by-step strategy that emphasizes progress as a group. These Principles are intended to represent a common starting point and foundation for each adopting organization's internal environmental, social, and CSR policies and practices, which must follow the organization's underlying business operations. We see that we will not always use our first attempts to do the positive things. We will review these Principles yearly, based on our implementation experience and to reflect on-going learning and emerging positive practice. Hence, on an annual basis, we will aim to assess and account on each bank's and sector's success against the Principles. We will be very conscious of our achievements and celebrate our progress while keeping an eye on areas calling for improvement. We can better support

Nigeria's environmental, social and economic goals by working together rather than going it alone, as the CBN advocates. These Principles were chosen to encourage long-term, sustainable growth while emphasizing development goals, conserving environment as well as people, and offering provable socio-economic benefits (CBN, 2012).

Before the SBPs came, banks spent more to make financial services available. This was because banks had to deal with large amounts of paper and were frequently obliged to transport these papers from one branch to another for further be handled (Islam, & Das, 2013). Following the large volume of papers and the cost of transferring them from one location to another, the banking industry's operational costs were extraordinarily high. Apart from the money costs, the request for more papers had a severe damage on the environment because more trees had to be chopped to makes the papers, resulting in deforestation. As more trees are chopped, it is becoming clear that a more severe change in climate will be inevitable (Aro-Gordon, 2016). Hence, environmental depletion in aspects like deforestation, degradation and higher warming will inevitably be the outcome should banks keeps on with their paper-based works. Given the possible dangers accompanying banks' operations, it was vital to come up with ways to cut these expenditures (Korshlund, 2013). Although a host of other policy reforms have previously emerged in a bid to achieve this objective- e.g. cashless policy (Ebiringa et al, 2014).

Owing to the aforementioned problems, the SBPs were created. SBPs are banking concepts and principles that portrays banks' role in long-term socio-economic growth in a commercially viable and green-conscious economy (Noh, 2018). Hence, SBPs are centered on offering high-quality services to mankind while sticking to ethical standards. Most importantly, SBPs ensure that financial services are supplied at a low cost to banks since it encourages the adoption of techs and tech-based innovations in banking. It was claimed that SBPs meant that bank loans were made with an eye on ecologically friendly business practices (Noh, 2010, 2012). The relevance of SBPs and bank performance in a commercially viable economy like Nigeria cannot be overstated. Is this assertion true in the financial industry of Nigeria? Can there be any association SBPs and the performance of Nigerian banks? These questions necessitated this investigation.

LITERATURE REVIEW

The SBPs in Nigeria

CBN (2012) highlighted SBPs as followed;

Principle 1-Business Activities1: The need for environmentally-driven and Socially-driven Risk Management

To avoid, mitigate, or offset negative impacts, we shall incorporate environment-driven and social-driven concerns into decision-making processes relevant to our Business Activities.

Principle 2| Business Operations2: Environmentally-driven and Socially-driven Footprints

We will avoid, mitigate, or drastically reduce the dangers that our operations release to the environment/communities within which we operate, and also enshrine the promotion of positive impacts where possible.

Principle 3| Human Rights

We ensure that human rights are duly respected via our operations

Principle 4| The Economic Empowerment of Women

Pursuing a gender-inclusive culture in the workplace and encouraging the economic empowerment of women as well as delivering women-based tailored products and services

Principle 5| Financial-Inclusion

The promotion of financial-inclusion will be our priority, and this will go as far as taking financial services to people in communities with little or no access to the conventional financial sector.

Principle 6 E&S Governance

In our respective institutions, we will adopt robust and transparent E&S governance practices, and we will assess our clients' E&S governance practices.

Principle 7| Capacity Building

Individual institutional and sector capability will be generated to detect, assess, and manage environmentally-driven and socially-driven risks and opportunities relating to our operations.

Principle 8 | Collaborative Partnerships

To accelerate our collective growth and propel the industry forward as a whole, we will interact across sectors and use international alliances, ensuring that our approach is in line with global norms and Nigerian development needs.

Principle 9| Reporting

At the individual institution and sector levels, we shall examine and report on our progress in meeting these Principles on a regular basis.

Financial Performance in the Case of Banks

Financial performance, which assesses how successfully a company meets its financial goals, has long been a focus of managerial research. Firm monetary performance represents the various subjective measurements of how successfully a company can apply its provided assets from its primary way of operation to make profits. Profitability ratios stand out when it comes to the need to capture banks' financial performance. This information reveals a bank's overall performance. Profitability ratios are financial tools since they are useful in determining the bank's bottom line. Profitability ratios are paramount to managers and owners who want to understand when analyzing financial performance since they reflect a bank's overall efficiency and outcomes, which are vital for making decisions. Margins and returns are generally separated into two components in profitability ratios. At various phases of measurement, profitability ratios dealing with margins often emphasize a company's ability to convert sales into profits. Profitability ratios emphasizing returns, often focus on a company's ability to assess efficiency as well as effectiveness in delivering returns to shareholders. For the uniqueness of bank returns, ratios are carefully determined (Moody, 2017)

Theoretical Framework

For a long time, the nature of the implications of e-banking has been a matter of debate among many schools of thought. Theoretical and empirical aspects of gauging the success of electronic e-banking have gotten a lot of attention in recent years.

Task Technology Fit (TTF) Theory

To study diverse settings of a variety of information systems, including electronic commerce systems, the model can be merged with as an extension of other models linked to information system outcomes. A fit between business tasks and information technology, according to the theory, is crucial in explaining and forecasting information system success (Goodhue and

Thompson, 1995). According to Olaiya and Adeleke, one such invention that facilitates an increasingly mobile workforce is mobile technology (Barnes, 2003) referenced in Olaiya and Adeleke (2019).

If we consider the task-technology fit assumption to mobile information systems, it becomes evident that previous research has focused primarily on the potentials of the techs and has paid less attention to the environment where such technology is employed. Banks must be sure to see that financial innovation emphasized benefits the consumers on one end, and also adds value in the area of cost and time savings on the end.

Rational Theory of Choice (RTC)

Rationality usually refers to a calm, level-headed disposition. Friedman (1953), cited by Olaiya and Adeleke, uses a more particular and narrow definition of rationality to describe an individual's act of weighing costs and benefits to reach a decision that maximizes personal gain (2019). In rational choice theory, all decisions, mad or sane, are believed to follow this sensible procedure. Consequently, rationality is perceived to mean a feature of patterns of choices rather than individual choices. In modern theory of choice, rationality is significantly more limited than its name suggests; it just necessitates a steady ranking of many options. RTC is central to recent economic theory, as well as related subjects sociology and history which have accepted it as their decision-making paradigm. There is no widely accepted definition of RTC.

Regardless of the RC models used, everyone knows that people prefer the best course of action according on their own particular functions and limitations. On average, people will prefer the thing that avail the most reward at the lowest money spent, including time spent. The retention of financial innovation follows the same path. Customers are more likely to recognize and adopt new technology that does not demand any physical, emotional, or mental effort on their part. Apart from being the most cost-effective technological means of increasing productivity, financial innovation, such as ATM and Internet banking, eliminates distance/time barriers and provides continuous productivity for the bank and customers regardless of distance because it is accessible 24 hours a day, seven days a week (Agbemabiese et al, 2014) cited in Olaiya and Adeleke (2019).

Advances the Technology Acceptance Model (TAM)

According to Olaiya and Adeleke (2019), the TAM is enhanced by emphasizing technological obstacles (Davis, 1989). This method links a person's behavioral tendency to their use of technology. As mentioned by Olaiya Adeleke (2019), adopting the TAM paradigm involves an understanding of end-user criteria for usefulness and usability (Vijayasarathy, 2004). According to this paradigm, usefulness and user friendliness influence users' opinions of any service. Restricted ability, time, environmental or organizational restrictions, and unconscious habits will all limit the flexibility to act in practice. According to Olaiya and Adeleke (2019), perceived utility and simplicity of use is crucial (Davis, 1989). (2019). These two traits have been scientifically proven to be important factors of new information technology acceptance and use. This model is the most widely utilized and recognized among scholars due to its utility. As a result, Adesina et al. (2010), cited by Olaiya and Adeleke (2019), offered a number of new extension models (2019). As an extension of the Technological Acceptance Model, Agbemabiese et al. (2015), cited in Olaiya and Adeleke (2019), have welcomed perceived credibility, perceived financial cost, and perceived self-efficacy (TAM).

Empirical Review

Obiekwe, Njoku, and Okoro (2020) researched SBPs in Nigeria, focusing with emphases on the ways factors including use of ATM, use of POS, credit of commercial banks towards agric. firms have added (value-wise) to the economy of Nigeria. The study data were examined with the help of the OLS regressionfocusing on4-month-based data from CBN from 2012 to 2018. According to the findings, the use of ATMs, POS, and credits from commercial banks contributed significantly to Nigeria's economic growth.

Literature Gaps

Even after the Nigerian CBN established the SBPs in 2012, there is little research on the subject. Obiekwe, Njoku, and Okoro's(2020) remains the only one current study available. This is an important gap in empirical literature that this wants to fill.

METHODOLOGY

The study nature has necessitated the adoption of expost facto research design, while emphases were laid on all DMBs listed in Nigeria today. Secondary data from sources including financial statements of DMBs and the CBN annual bulletin on statistical data were used. Furthermore, such variables as ATM, CPS, LR, CR and LR were used, while ROA was used as a performance proxy. The OLS regression method was employed to analyze data collected.

Model Specification: for the purpose of this study is as follows;

 $ROA = \beta_0 + \beta_1 LogATM + \beta_2 LogCPS + \beta_3 LR + \beta_4 NPLR + U$

Decision Rule: Accept the null hypotheses if the p-value is greater than the significance level, Significance level is 5%.

RESULTS AND DISCUSSION

Descriptive Summary

Table 1

Descriptive Test

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	ROA	LOGATM	LOGCPS	LR	CR
Mean	1.975000	2.983260	3.753691	55.04100	11.67550
Median	2.320000	2.966825	3.988725	51.82000	11.88000
Maximum	4.730000	3.813755	4.409542	77.62000	33.03000
Minimum	-9.820000	1.888179	2.724582	41.25000	2.810000
Std. Dev.	2.977662	0.675706	0.571261	10.23682	7.385186
Skewness	-3.269174	-0.456258	-0.489853	0.629102	1.138694
Kurtosis	13.73169	2.029182	1.703013	2.274430	4.503101
Jarque-Bera	131.5993	1.479311	2.201665	1.757942	6.204839
Probability	0.000000	0.047278	0.032594	0.015210	0.044940
Sum	39.50000	59.66521	75.07382	1100.820	233.5100
Sum Sq. Dev.	168.4629	8.674999	6.200437	1991.058	1036.278
Observations	21	21	21	21	21

Source: EVIEW, 9.0 Outputs, 2021.

Table 1 dealt with the presentation of the descriptive summary. The mean for the ROA is recorded a mean value of 1.9750 with deviation of 2.9777 over the twenty-year period. Also, ATM recorded a mean of 2.9833 and deviation of 0.6757, CPS recorded a mean of 3.7537 with a standard deviation of 0.5713. Also, LR recorded a mean of 55.0410 with a deviation of 10.25688 while CR recorded a mean of 11.6755 with a deviation of 7.3852. Since the deviations of all variables are smaller than respectively means, it reveals that this data is well dispersed, except for ROA which recorded a higher deviation of 2.9777 greater than it mean of 1.9750.

Multicollinearity Test

Table 2

Variance Inflation Factors Multicollinearity Test

Variance Inflation Factors

Date: 10/25/21 Time: 03:14

Sample: 2000 2019 Included observations: 20

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	17.66819	122.6525	NA
LOGATM	2.166607	140.3825	6.523846
LOGCPS	2.406803	240.5990	5.179848
LR	0.002367	51.41410	1.635767
NPLR	0.003244	4.236304	1.166736

Source: EVIEW, 9.0 Outputs, 2021.

The VIF was gotten as seen above, to confirm the validity of the study's findings. Furthermore, for ATM, CPS, LR and CR, the Centered VIF figures consistently lie within 6.523846, 5.179848, 1.635767, and 1.166736, respectively. This indicates the unavailability of multicollinearity problems in the variables because the cut-off value of VIF is 10.

Data Validity Test

Table 3 Data Validity Test

Breusch-Godfrey Serial Correlation LM Test:							
F-statistic	0.136521	Prob. F(2,13)	0.8736				
Obs*R-squared	0.411425	Prob. Chi-Square(2)	0.8141				
-		Durbin-Watson stat	1.969615				
Heteroskedasticity To	est: Breusch-Pa	agan-Godfrey					
F-statistic	0.895740	Prob. F(4,15)	0.4907				
_ ~		` ' '					
Obs*R-squared	3.856176	Prob. Chi-Square(4)	0.4258				
Scaled explained SS	0.907406	Prob. Chi-Square(4)	0.9235				
		Durbin-Watson stat	1.148752				
Ramsey RESET Test	;						
Equation: UNTITLED)						
Specification: ROA Lo	OGATM LOGO	CPS LR NPLR					

Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	5.088075	14	0.1202
F-statistic	25.88851	(1, 14)	0.1302
Likelihood ratio	20.94062	1	0.1701
Durbin-Watson stat	1.520087		

Source: E-VIEW, 9.0 Outputs, 2021.

The Durbin Watson statistic confirms that our data exhibits no autocorrelation qualities, as revealed on table 3. The probability for three parameters exceeded 0.05 level of significance, interpreting the Homoskedastic nature of the model. Our model is correctly described and stable, according to the Ramsey test results.

Augmented Dickey-Fuller (ADF) Unit Root Test

Table 4
Augmented Dickey-Fuller Unit Root Test

Test Variables	ADF Test	Mackinnon	Order of	P-	Durbin-	Decision
	Statistic	Critical Value @	Integratio	Value	Watson	
	Value	5%	n		Statistics	
ROA	-5.288999	-3.052169	1(1)	0.0006	1.234026	Stationary
LOGATM	-4.672971	-3.040391	1(1)	0.0019	2.011478	Stationary
LOGCPS	-2.788825	-2.040391	1(1)	0.0396	1.857964	Stationary
LR	-7.299708	-3.040391	1(1)	0.0000	2.171371	Stationary
NPLR	-4.844974	-3.040391	1(1)	0.0013	2.052786	Stationary

Source: E-VIEW, 9.0 Outputs, 2021

According to the summary of the ADF test, all variables under consideration have unit root tests at their initial difference 1. (1). Their respective ADF statistics, which is seen to exceed the threshold of 5%, is evidence of this. Furthermore, the p-value for all variables, which is lower than 5% significance level or more than 95 percent confidence level, provides additional proof of stationary series. At the first difference, i.e. at order one, they all achieved stationarity. The DW statistic means the absence of autocorrelation problem in the data. We can use the Johansen cointegration test because all of the variables are integrated at order one.

Johansen Cointegration

After determining the variables' time series features, this study examines further utilizing the (Trace Statistics) and (Maximum Eigenvalue) methodologies proposed by Johansen and Juselius (1990) to see if the variables have a long-run relationship. As a result, Table 5 below summarizes the cointegration test:

Table 5

Summary of Johansen Cointegration Test Output

Date: 09/02/21 Time: 22:52 Sample (adjusted): 2002 2020

Included observations: 19 after adjustments Trend assumption: Linear deterministic trend Series: HDI INTR EXCHR MS MPR

Hypothesized	_		0.05			0.05	
	_	Trace			Max-Eigen	Critical	
No. of CE(s)	Eigenvalue	Statistic	Critical Val	ue Prob.**	Statistic	Value	Prob.**
None *	0.998953	195.3541	69.81889	0.0000	123.5097	33.87687	0.0000
At most 1 *	0.885978	71.84435	47.85613	0.0001	39.08450	27.58434	0.0011
At most 2 *	0.654898	32.75985	29.79707	0.0221	29.15049	21.13162	0.0026
At most 3	0.408715	17.60936	15.49471	0.0443	19.45821	14.26460	0.0205
At most 4	0.205958	4.151147	3.841466	0.0416	4.151147	3.841466	0.0416

Researcher's Computation Based E-views 9.0 Output, 2021.

Source: E-VIEW, 9.0 Outputs, 2021

The outcome of the multivariate cointegration by Johansen technique showed that both the trace value and the Maximum Eigenvalue statistic show evidence of two cointegration relationships (at None and at most 1), where the values of the trace statistic and the Eigenvalue statistic are greater than their respective critical values at the 5% level of significance. This finding follows the presence of a long-run consistent association among the performance proxies- i.e. ROA and other variables- i.e. ATM, CPS, LR, and CR.

Trace test indicates 4 cointegratingeqn(s) at the 0.05 level

^{*} denotes rejection of the hypothesis at the 0.05 level

^{**}MacKinnon-Haug-Michelis (1999) p-values

Table 6
Multiple Regression Analysis

Dependent Variable: ROA Method: Least Squares Date: 10/25/21 Time: 03:13

Sample: 2000 2019 Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.74804	4.203355	5.887689	0.0000
LOGATM	-2.153872	1.471940	-1.463288	0.1640
LOGCPS	-1.034769	1.551387	-0.666996	0.5149
LR	-0.168711	0.048651	-3.467791	0.0034
CR	-0.272128	0.056954	-4.778066	0.0002
R-squared	0.743473	Mean dependent var		1.975000
Adjusted R-squared	0.675066	S.D. dependent var		2.977662
S.E. of regression	1.697356	Akaike info criterion		4.108338
Sum squared resid	43.21525	Schwarz criterion		4.357271
Log likelihood	-36.08338	Hannan-Quinn criter.		4.156933
F-statistic	10.86835	Durbin-Watson stat		1.269254
Prob(F-statistic)	0.000243			

Source: EVIEW, 9.0 Outputs, 2021.

The result above shows that ATM's coefficient is -2.1539 with a t-value of -1.4633 and an associated p-value (sig. value) is 0.1640. This means ATM asserts negative but insignificant influence on ROA. This confirms the position taken in Obiekwe, et al (2020).

CPS also had a coefficient of -1.0348 with an associated p-value 0.5149, a result that can be interpreted to mean that the influence that CPS has on ROA is both negative and insignificant at the same time.

However, LR and CR showed a strictly different result, such that LR posted a coefficient of -0.16871 but with a p-value of 0.0034, while CR posted a coefficient of -0.272128 with a p-value of 0.002; the implication is that both variables assert negative but influence on ROA, but their influence is rather significant compared to others.

CONCLUSION AND RECOMMENDATIONS

This piece looked at the concepts of SBPs and the performance of Nigerian DMBs over the period of 2000 to 2019. The findings simply explain that ATM and CPS are negative influencers of DMBs' performance as proxy by ROA, and their influence is insignificant as well. However, unlike the aforementioned, LR and CR took a different path, as both factors were significant influencers of DMBs' performance, even though their influence was also on the negative note. This Study therefore concludes that SBPs that are especially credit-driven will significantly influence performance negatively if DMBs do not implement the policy correctly and in due diligence.

It is therefore, by these findings recommended that DMBs in Nigeria should embrace the SBPs and incorporates the resulting principles correctly if they are interested in achieving meeting societal needs while pursuing the banks' objective of making profit.

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