Consolidation and Credit Access Risk in Rural Nigeria: Impact Assessment after a Decade of Implementation.

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ABSTRACT: This study examines the effect of consolidation of Deposit Money Banks (DMBs) on credit access risk in rural areas of Nigeria after a decade of the consolidation exercise. Secondary data on total value of credits to rural areas was obtained from the CBN bulletin for the period 1994 to 2014. This period includes 10 years of pre consolidation and 10 years of post-consolidation. Mann Whitney U test was used in analysing the data to test for significant difference in the total credit to rural areas before and after consolidation in Nigeria. The result revealed that there was a significant increase in access to DMBs' credit by rural customers of DMBs in the post consolidation era when compared to the pre-consolidation era. The result may be is explained by the role of technology in banking. It is recommended amongst others that government should provide infrastructures like good access roads to the rural areas, electricity and support investments in Information and Communication Technology (ICT) in the rural areas as this will encourage the penetration of financial services into the hinterlands.

KEYWORDS: Credit risk, Bank consolidation, financial intermediation, Nigeria, Mann-Whitney U test

1. INTRODUCTION

The role of banks in the growth and development of nation's economy is vital as they are the major conduit through which economic goals and objective are attained (Koch and MacDonald, 2003; Schargrodsky and Sturzenegger, 2000; Park, 2012; McKinnon and Shaw, 1973; Rose, 2003). This usually informs reforms in the sector to guard against systemic crisis (Hellmann et al. 2000). In 2005, Nigeria initiated the banking sector reforms andthe policy objective was a more robust banking system, through the creation of larger banking institutions that could be more effectively supervised. The influence of this policy on access to credit and lending pattern is essential and thus provides the motivation for this study.

There are several studies that seek to proffer solutions to the problem of difficulty in access to bank loans as a result of information asymmetry, such as adverse selection and moral hazard. Empirical studies emphasis the type of credit facilities available, the cost of borrowing (spread), borrowers and their characteristics and most importantly, credit risk (Mora, 2013, Norden and Webber, 2010, Jimenez et al, 2009). A rich body of research has explored the important of banking infrastructure at the local market level and how it affects economic outcomes in both developing and developed countries (Black and Strahan, 2002; Gilje, Loutskina and Strahan, 2016; Burgess and Pande, 2005; Cetorelli and Strahan, 2006; Kerr and Nanda, 2009;Jayaratne and Strahan , 1996).

Extant literature shows how the characteristics of borrowers affect the performance of a credit facility (Da Silva and Pirtouscheg, 2015; Norden and Weber, 2010). Nevertheless, some empirical studies examine the correlation between banking relationship and lending (Petersen and Rajan, 1994; Berger and Udell, 1995). A study on the effect of consolidation and bank branches closure in the United States showed that consolidation encourages the closure of many bank branches which invariably leads to changes in banks physical networks **(**Nguyen, 2014). Bank consolidation is concerned with the process of making banks solid, strong, sound and operationally fit to compete favourably within the industry regionally and globally (Di Patti and Gobbi, 2007). It is an agenda to reposition banks to make them more reliable, competent and competitive (Ezeoha, 2007). Nevertheless,

consolidation enhances the availability of cheaper credit which promotes economic growth and development through the mobilisation of capital for investment (Somoye, 2008).

At the wake of the 1986 structural adjustment programme (SAP) in Nigeria, Community Banks were established in rural areas as licensed by the CBN to ensure financial inclusion of the poor rural dwellers, facilitate poverty alleviation and discourage rural-urban drift through the provision of credit and other banking services (Ayadi, Hyman and Williams, 2008) and about a decade after, the community banking sector in Nigeria collapsed due to low take-off capital, unskilled and inept management which led to high credit risk (Acha, 2012). This saw to the return of the Nigerian banking landscape to the traditional commercial banking (DMBs) at the beginning of the year, 2000 and the introduction of microfinance banking by the CBN (Acha, 2012; Inyang, Flannery & Garvey, 2019). The apriori expectation of the researchers is that consolidation leads to closure of bank branches, which widens bank-borrowers distance and results in financial exclusion of rural customer from access to credits. This implies that there is a significant difference in credit access to rural borrowers after consolidation.

Thus, the aim of this study is to examine the influence of the 2005 consolidation exercise on access to credit in Nigeria. Particularly, we shall focus on access to credit by the rural clients of Deposit Money Banks (DMBs) as the trend of the influence will be better captured by the data from this segment of DMBs clients due to mass closure of rural branches of DMBs after the consolidation exercise which invariably affects bank-customer proximity. In this regards this study specifically examines the difference in the volume of credit access pre versus post the 2005 consolidation exercise. The findings of our study shall inform policy in developing economies viz-a-viz aiding economic growth by promoting financial inclusion. Our choice of Nigeria is quite instructive for two reasons. Firstly, it is an emerging economy where relationship lending thrives (Geršl and Jakubík, 2011; Elsas, 2005). Secondly, the consolidation exercise saw to a great reduction in the number of banks in operation in Nigeria (from 89 to 25 in 2005) and this study is a situation analysis of the pre and post consolidation behaviours. The study will also add up to the body of knowledge in the area of research.

The rest of the study is organised as follows: section 2 provides the review of relevance literature, section 3 is the research methodology, while section 4 presents the result of the data analysis and discussion of the main findings. Section 5 concludes and also states the recommendations.

2. REVIEW OF RELATED LITERATURE

2.1 Banking Sector in Nigeria

Banks facilitate growth and development of any economy by carrying out the financial intermediation role through the provision of credit to customers which in turn stimulates economic activities and Capital adequacy is critical to the actualisation of this responsibility as it is a major determinant of bank stability (Lee and Hsieh, 2013; Okafor, Ikechukwu and Adebimpe, 2010). In 2004, the Central Bank of Nigeria (CBN) evaluated the state of 89 licensed banks in the country using the CAMEL rating and in addition to their finding that 10 banks were sound, 51 satisfactory, 16 marginal and 12 unsound, it was also discovered that Nigerian banks had an average capital position of $10 million (CBN Bullion, 2005). The CAMEL rating system is based upon an evaluation of five critical elements of a financial institution's operations: Capital adequacy, Asset quality, Management soundness, Earnings, and Liquidity (Dash and Das, 2009). The thresh-hole of some of the critical elements considered in bank soundness assessment by CBN are; a liquidity ratio not less than 30%, capital adequacy ratio not less than 15% in accordance with Basel accord, impressive asset quality and experienced management team (CBN Bullion, 2005)

The publication of the state of Nigerian banks report initiated the 2005 banking reforms exercise which sought to develop larger and more robust banking institutions through consolidation (CBN Bulletin, 2005; Kenn-Ndubuisi and Akani, 2015).The Central Bank of Nigeria, in keeping with its supervisory and regulatory role, introduced what it called the 13-point reform agenda for the Nigerian banking and financial system (Iganiga, 2010) and this programme was announced by the Governor of the apex bank on 6July 2004. As part of the reform, Deposit Money Banks (DMBs) were to raise their minimum paid up capital from 2 billion Naira to $25 billion Naira and banks consolidated to meet the new minimum paid up capital (Imeokparia, 2015; Inyang, & Acha, 2019). The reforms were intended to facilitate more effective risk-based supervision of the banking industry by the regulators in order to curtail massive distress of banks in the country as it saw to the shrinking of the total number of banks in Nigeria to 25 in 2005 from 89 in 2004(Microsystems Report, 2016). Presently, there are 21 DMBs in operation in Nigeria (Cenbank.org, 2016).

In the period since 2008, Banking operations in Nigeria have been affected by the global financial crisis (Inklaar and Yang, 2012; Fadare, 2011; Felix et al, 2015; Ashamu and Abiola, 2012). The Nigerian economy has been severely affected by falling oil prices, pressure on FX rate and political turbulence in recent time (Worldbank.org, 2016) making investment highly risky and this have exerted pressure on the balance sheet of banks. The situation has equally given rise to macroeconomic challenges in the country trending a persistence rise in inflation rate. Against this backdrop, the CBN has undertaken a number of measures to maintain access to creditand support banking stability (cenbank.org, 2015; cenbank.org, 2016).

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In order to access credit from any commercial bank in Nigeria, the borrower must run a functioning deposit account with the bank, have tangible or intangible collateral as security and fulfil other strict requirements which are sometimes bank specific (Ukoha, 2013; Owenvbiugie and Igbinedion, 2015). Nevertheless, the main sources to credit risk in Nigeria can be identified as limited professional, technical and technological institutional capacity; volatile interest rate; litigation issues; political interference; weak quality of infrastructure; inadequate supervision by CBN and the current slowdown in economic activity (Fund and Bank, 2013; Kolapo, Ayeni and Oke, 2012; Jain, 1999).

Research by EFInA, 2014, shows that 63.9% of Nigerian adults live in the rural areas of the country which is indicative that the country has a large rural population. The report also shows that 25% of the rural adult population of the country have access to bank services, 27.2% have access to financial services from non-bank sources while 47.8% are financially excluded. The non-bank sources include savings clubs, savings pools (locally known as esusu or ajo), money lenders; as well as remittances (through informal channels such as via a transport service or recharge card). These drawbacks notwithstanding, there is a high prospect of growth in the economy of Nigeria if access to credit for investment purposes is made less herculean (Aku, 1986) as the country has been achieving 7% growth each year since 2009 (Fund, 2013; World Bank, 2016;). There are empirical evidences that the growth and development of the Nigeria economy can be accelerated if the rural inhabitants have access to credit to grow the value chain of their agricultural businesses as agriculture is a veritable diversification for the country's economy from crude oil (see; Uzonwanne, 2015; S. Akpan, 2015; Eko et al., 2013). The DMBs in the country have integrated modern banking technology in their service delivery to reduce the stress associated with access to banking services in the country (Oluwatolani, Joshua and Phillip, 2011), but of concern is the achievement of a reasonable level of financial inclusion, which is a panacea for access to credit, and this is what we investigate in this work.

2.2. Consolidation and Geographical Distribution of Bank Branches.

The first strand examines if consolidation affects the location and distribution of bank branches. Consolidation of banks around the globe in recent years is intensifying the public policy debates on the influences of concentration and competition in the banking industry (Berger et al, 2004; Nguyen, 2014; Wheelock, 2011). Bank consolidation implemented through mergers and acquisitions have impacted different clients in varying ways. While some - those without problems of bad credit histories - have benefited from the largeness of the consolidated unit, in terms of increase in product lines and the synergy and spread of evolving technology-based services, a significant number of other individuals are detrimentally affected by this trend as they lack access to the services of the newly consolidated firms since the exercise accelerates closure of some branches (Nguyen, 2014). Wheelock (2011) examining the impact of unassisted merger on banking concentration in America during the period 2007-2010 showed that in general, local banking markets did not become significantly more concentrated during the period considered but that concentration increased remarkably at the level of U.S census region - the metropolitan statistical areas - and the study supported Dick (2006) result on a study of the same region.

Data on the total number of banks and their branches in Nigeria extracted from the CBN statistical bulletin, 2014 presented graphically in Figure 1 above shows that the total number of banks in operation in Nigeria was as high as 90 in 2002 and 2003 and as low as 21 in 2014. The year with the highest number of bank branches in operation in Nigeria was 2010 with 5809 and the lowest in 1998 and 1999 with 2180. It also indicates that the conclusion of the consolidation exercise in 2005, introduced a stop in the classification of bank branches into rural and urban from 2006 as banks had scaled down their branches in the rural areas which equally resulted in over 7.3% decrease in the total number of bank branches in Nigeria in 2006 using 2004 as the base year. Figure 1 also shows a 23% and 41% increase in the total number of bank branches in the country in 2007 and 2014 respectively from 2006 and this reflects an increase in number of urban branches. These increases are made possible by the opening of more branches in the urban areas by DMBs. This is indicative that consolidation affects the geographical distribution of banks in Nigeria as rural branches were non-existence after consolidation but the number of bank branches in the urban area rather increased. This supports the findings of Wheelock (2011) who discovered that consolidation brought about the redistribution of bank branches in America.
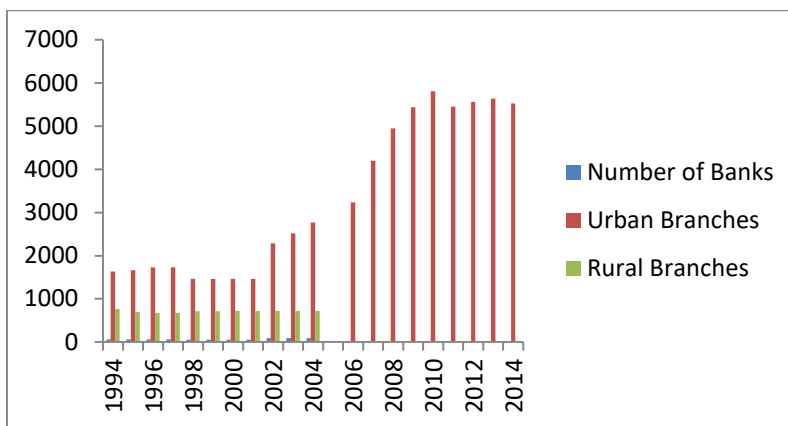
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Figure 1. Graphical Representation of Number of Deposit Money Banks (DMBs) and branches in Nigeria from 1994-2014. SOURCE: 2014 CBN Bulletin.

More so, Research shows that closure of rural branches and the opening of more branches in the city centres by banks is a move towards leveraging on competitive advantage (Berger et al., 2004) and it is opined that this increases the level of financial, social, and economic exclusion of those affected (Nguyen,2014; Wheelock, 2011). Many consumers continue to rely exclusively on local banks for financial services and evidence suggests that the pricing of banking services, like loan and advances, continues to reflect, at least in part, the structure of local banking markets (Wheelock, 2011). This naturally leads the discussion into the second strand, bank-borrower distance, as the client in the rural area is faced with the challenge of distance to the nearest local branch.

2.3. Bank-Borrower Distance and Access to Credit

Analyses on distance, such as those by Jimenez et al, 2009; Degryse and Ongena, 2003; Berger and DeYoung, 2001; Agarwal and Hauswald, 2007 are in two perspectives namely; the physical distance and the organisational distance. The physical distance, considered from the point of view of the borrower, is the proximity between a bank branch and a customer's location (Degryse and Ongena, 2003; Agarwal and Hauswald, 2007). The organisational distance, from the lender's point of view, is the distance between the bank headquarter and the operating branches serving customers in the local market. Considering the fact that decision on loan is a function of information accessibility about the borrower, extant literature show that distance has direct effect on credit approvals (Agarwal and Hauswald, 2007).

Furthermore, the lender-based theories (Inderst and Mueller, 2007) assumes that there are two different banks which are, the local – the one close to the borrower, and the other, the distant – the one far from the borrower. The relevance of this according to the theory is that the local bank has information advantage over the distance bank and Guiso et al. (2004) supports this by showing that there is evidence of information disadvantage in the case of distant lending in a study of Italian banking industry. Boot and Thakor (2000), who consider competition between transaction lenders and relationship lenders, Hauswald and Marquez (2003, 2006), who examine how information technology affects competition between differentially informed lenders, and Almazan (2002) who study the competition in the banking industry based upon the interplay of the level of capitalization of banks and their ability to monitor different types of projects (i.e., their expertise), all conclude that lenders who are located closer to a borrower have better information about the borrower.

Jimenez et al (2009) using credit register database of the Banco de Espana to model the use of collateral as a function of the firm-bank organisational distance, accounting variables, relational lending variables, characteristics of the loan and province bank and time control variables find that organisational distance is a relevant variable in explaining the use of collateral for business loan in two ways. First, the likelihood of the use of collateral decreases with organisational distance and the effects of distance variable on such likelihood are independent of the experience of the bank in the province. Second, the effect of organisational distance on the likelihood of collateral decreases when the accounting variables are included as explanatory variables of the use of collateral. The implication of this empirical evidence is that organisational diseconomies which affects bank as a complex business entity (Berger et al, 2005) plays a major role in banks' lending decision and since organisational distance is a key supply-side factor affecting terms of loan independently of banks having branches in the local market or not, accounting variables can be substituted for organisational distance in collateral decision. This finding is in line with that of Agarwal and Huasewald (2007) that interest rate on loan cannot be empirically explained any longer by bank physical location after soft proprietary information on the credit quality of the borrower is controlled.

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Another significant channel which distant can affect loan transaction is through transportation cost and there are models on uniform loan pricing that focuses on this (see; Chiappori etal., 1995; Freixas and Rochet, 1997).Transportation cost reduces the market for banking services to a relatively small radius around a particular bank branch (Jimenez et al, 2009). This cost can be incurred by the potential borrower as well as the bank. On the part of the borrower, in addition to the cost of travelling to the local branch, such costs is also captured in the time and effort spent by a loan applicant to interact with the bank personnel involved in the loan processing and the time spent in looking for a suitable credit facility (Agarwal and Huasewald, 2007). Banks, on their part, can incur transportation cost in the process of assessing the potential borrower and in loan monitoring and all these have an effect on credit terms and access (Sussman and Zeira, 1995).

The information advantage on the address of a potential borrower that a bank enjoys enable them to engage in spatial price discrimination (Lederer and Hurter,1986) and this setting shows that interest rate is a decreasing function of bank distance (Hauswald and Marquez, 2006). Owing to this, empirical works have shown that any borrower deemed credit worthy always obtains credit from the closest bank branch and that distance reduces access to credit (Agarwal and Huasewald, 2007; Petersen and Rajan,1994, 2002; Berger et al., 2005).

3. MATERIALS AND METHODS

3.1. Data

Secondary data was extracted from the CBN annual bulletin of 2014. Specifically, time series data on annual total credit of DMBs to rural customers in Nigeria from 1994 to 2014 was collated. The period covered was carefully chosen to capture the pre and the post-consolidation eras ten years at par with the year of consolidation captured as part of post consolidation period. Also, the choice of the period, 1994-2014 was informed by the availability of data. The components of the credit are consumer and commercial loans. The data does not include donor agency funding placed with the banks for supervised disbursement for various rural based economic programmes aimed at poverty reduction through productive engagements. Reasons for this are that the terms for accessing such funds are set by the fund owners and they are not part of the credit facilities offered by the channelled DMBs.

3.2. Method of Data Analysis

Two methods were used to investigate credit access and lending pattern of DMBs to the rural clients considering the pre and post-consolidation eras. First, the percentage variation in credit access in each of the years was estimated. The advantage of this approach is it makes visualization of the result and determines the lending pattern easy. Second a test of difference between the pre and post consolidation periods, using Mann-Whitney U test, a non- parametric statistical test to determine credit access variation and any significant difference between the two periods to enable was equally conducted. Our choice of Mann-Whitney U test is informed by the fact that it is a test of stochastic equality which generates a test of difference outcomes similar to t-test and it is most appropriate when the database does not fulfil the strong assumption of normal distribution (Inyang, Bassey & Umunnakwe, 2022). All the observation from both groups of our disaggregated data (pre-consolidation and post-consolidation) are independent of each other and the level of measurement of the data is higher than the ordinal response which equally makes our choice of Mann Whitney U test more appropriate (Nachar, 2008). Also, Mann-Whitney U test is ideal when the sample size per group is small (5 < 20 observations) and the measurement is interval based (yearly) (Inyang, Bassey & Umunnakwe, 2022) and these truly describe our data set. One major concern over the use of the Mann-Whitney U test is that the type I error is amplified in a situation of heteroscedasticity but since we are carrying out a test of difference in the mean rank as the data is not normally distributed, this error has been reduced. Kanapickienė and Grundienė (2015), Milenovic (2011), and Deran et al.(2014) are some studies that have used Mann-Whitney U test.

4. PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

4.1. Credit Access Pattern in the Pre- and Post- Consolidation Periods.

The data on credit to rural borrowers in the period under consideration is presented in table 1. This data distribution represents three phases associated with bank consolidation in Nigeria; pre-consolidation, consolidation and the post-consolidation years. Within 1994-2014 periods of credit review in Nigeria, 2005 is the year that separates pre and post consolidation DMBs' credit administration. This is the year of consolidation.

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Table 1. Variation in Credit Lending Pattern of Annual Total Credit of DMBs in Nigeria to the Rural Clients

Phases	Year	Amount (N'million) N	Credit access differentials $M = n_{1+I} - n_I$ where; $1 \le I \le 20$	Percentage variation in credit lending pattern $P = (M_I / n_I) \times 100$ where; $1 \le I \le 20$
Pre-Consolidation	1994	1,602.2	-	-
	1995	8,695.3	7093.1	+81.57
	1996	4,411.2	-4284.1	-49.27
	1997	11,158.6	6747.4	+60.47
	1998	11,852.7	694.1	+5.86
	1999	7,498.1	-4354	-36.73
	2000	11,150.3	3652.2	+32.75
	2001	12,341.0	1190.7	+9.65
	2002	8,942.2	-3398.8	-27.54
	2003	11,251.9	2309.7	+20.53
	2004	34,118.5	22866.6	+67.02
Consolidation	2005	16,105.5	-18013.0	-52.80
Post Consolidation	2006	24,274.6	8169.1	+33.65
	2007	27,263.5	2988.9	+10.96
	2008	46,521.5	19258.0	+41.40
	2009	15,590.5	-30931.0	-66.49
	2010	16,556.0	965.5	+5.19
	2011	19,980.3	3424.3	+17.14
	2012	90,782.0	70,801.7	+77.99
	2013	1495687.5	1495678.5	+99.99
	2014	3475791.14	198013.64	+56.97

Source: Researcher's computation

The data shows yearly total credit of DMBs in Nigeria particularly to the rural clients. There is a deepening in the fluctuation of amounts of credit accessed as depicted by the yearly access differentials and percentage variation in credit lending pattern. Table 1 reveals that credit lending pattern is quite unstable during the pre-consolidation period resulting in three major declines preceding bank consolidation policy implementation. The reductions and their corresponding years are; 49.27% in 1996, 36.73% in 1998 and 27% in 2001. The year with the highest reduction in credit disbursement is the consolidation year, 2005, with 53.8% and this result is quite rational as banks needed funds to meet up the new minimum paid up capital.

The post-consolidation phase of credit administration shows consistency in growth although not proportional. The exception was in 2009 with a 66.49% reduction in credit accessed with 9 successive increments in the amount of loan disbursed to rural clients by DMBs in Nigeria. The 66.49% reduction in 2009 can be attributed to the effect of the global financial crisis, which kicked in the previous year (2008), in the Nigerian financial sector as DMBs ran short of funds as a result of the global financial turmoil to grant loans and were equally careful in loan approvals due to uncertainty that the financial crisis brought.

The pattern of the result in Table 1 suggest that credit lending pattern is seriously affected by covariate risk and economic threat due to socio-political tension in the Nigerian economy. The behavioural pattern appears quite rational as credit administrations are quite alert to instability in the polity of the Nigerian state and global events that could have an effect on the capital base and portends risk for future investments. Furthermore, the essence of the 2005 banking sector reforms to protect the banking industry against financial crisis seems to pay off as credit lending shocks incidences were highly reduced in the post-consolidation era compared to the pre-consolidation era. Though the effect of the consolidation policy thrust is observed to be low during the first 6 years after consolidation, the credit access practice has increasingly become stable and bloated in the last three years, that is 77.99% increase in 2012, 99.99% in 2013 and 56.97% in 2014).

4.2. Results of the Test of Difference

The test of significant difference was done using Mann Whitney U test with SPSS version 23. The aim is to statistically ascertain the difference and it significance, if any. The test result is as presented in Table 2 and Table 3.

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Table 2 provides information regarding the output of the actual Mann-Whitney U test. It shows mean rank and sum of ranks for the two groups tested (pre-consolidation and post-consolidation). The rank table is very useful because it indicates the amount of credit given by the DMBs in the pre-consolidation era and the post consolidation era. This indicates that the post consolidation era has the highest mean rank. This implies that the total volume of credit disbursed during the post consolidation period till 2014 grossly outweighed the amount of credit access that pre-dates 2005. Actually, the upsurge in credit disbursement could be primarily attributed to the influence of the consolidation policy of 2005.

Table 3 shows the actual significance value of the test. Specifically, the test statistics table provides the U statistics, as well as the asymptotic significance (2-tailed) p-value. From the table, it can be concluded that rural credit access in the post consolidation era was statistically significant and higher than the rural credit access in the pre-consolidation era (u= 6.000, p = .001). Since the p value of the Mann-Whitney U statistics test is below the 5% level of significance, the Null hypothesis which states thus; there is no significant difference in the total credit to rural areas before and after consolidation in Nigeria, is rejected and the Alternative hypothesis namely; there is a significant difference in the total credit to the rural areas before and after consolidation in Nigeria, is accepted.

Furthermore, the test of significant difference between the mean of credits access of the pre and post eras is statistically significant even at 95% confidence level (i.e. 5% level of significant) based on Mann-Whitney U test analysis (see table 3). Thus the Null hypothesis is rejected which is in line with the apriori expectation of the researcher. This implies that the post-consolidation era witnessed a significant increase in total credit to the rural areas by DMBs in Nigeria. This difference is achieved notwithstanding the closure of rural branches.

Table 2. Mean Ranks and Sum of Ranks

ERA		N	Mean Rank	Sum of Ranks
RURALCREDIT	Pre	10	6.55	72.00
	Post	10	15.90	159.00
	TOTAL	20		

Table 3. Mann-Whitney U Test Statistics[a]

	RURAL CREDIT
Mann-Whitney U	6.000
Wilcoxon W	72.000
Z	-3.450
Asymp. Sig. (2-tailed)	.001
Exact Sig. [2*(1-tailed Sig.)]	.000[b]

a. Grouping Variable: ERA

b. Not corrected for ties.

4.3. Discussion of Findings

The key finding of the study is that consolidation leads to increase in access to DMBs' credit by rural Nigerian. This is indicative that consolidation affects access to credit in Nigeria. This result is obtained despite the fact that consolidation has increased the bank-borrower's distance due to the redistribution of bank branches in the country vis-a-vis, the closure of rural branches and the opening of branches in the urban area by DMBs. The implication of this is the non-existence of DMBs' branches in the rural area and the clustering of their branches in the urban centres. This result does not agree with earlier studies (Agarwal and Huasewald, 2007; Petersen and Rajan,1994, 2002; Berger et al., 2005) that distance decreases access to credit.

The finding in this study is likely influenced by the use of technology in banking in the country and this agrees with the work of Salawu and Salawu, 2007 who concluded in their study that the integration of technology into the banking services provision in Nigeria has increased banks reach in the country and facilitate better bank-customer relation. This position is supported by EFInA 2008 access to financial services survey which however revealed that Nigeria clearly demonstrates the potential for using mobile phones as a distribution channel for providing financial services to the unbanked. The EFInA, 2014, study showed that 62.8% of the country's financially excluded population own mobile phones.

DMBs have taken advantage of the acceptability and spread of the mobile phone services and synergize this with banking technologies in a bid to extend their geographical coverage and this seems to pay off well as it has resulted to significant increase in credit access by the rural DMBs' customers in the post-consolidation era.Agwu and Carter (2014) in their study on mobile phone

banking in Nigeria concluded that mobile phone banking has significantly reduced banks customer's dependence on physical bank branch infrastructure. However, the DMBs use this communication and information gathering channel (mobile phone services) to gather information about a potential borrower. Specifically, bank employees who decide loans uses mobile phone services to cross check the authenticity of information supplied by a prospective borrower. Since loans decisions are carried out at the head office of the banks, this helps in bridging the organisational distance gap and equally reduces the transportation cost for both the borrower and the lender (the bank). This makes the mobile phone service a key component of the lending technologies employed by banks in Nigeria to facilitate a better service delivery and ensure a wider coverage.

The study (EFInA, 2008, 2014) however, reveals that there is a significant decline in the number of adult population that are excluded from access to banking services and credit in the study period.In 2008, 79% of the Nigerian adult population had no access to banking services and credit, whereas in 2014 only 63.7% had no access to banking services, which shows a 15.3% bank capturing of the Nigeria non-banking population within the period. This suggests that, distances created by branches closure notwithstanding, DMBs had a way of connecting with their clients. This explains the increase in the amount of credit accessed by rural clients in the midst of branch closure. It is pertinent to note that the number of rural clients that had access to credit facilities of DMBs have increased significantly. This further buttress the position of this study that consolidation has impacted positively on credit access by rural dwellers.

Banks in Nigeria consolidated through merger and acquisition and the benefits that come with the exercise can also be responsible for the result obtained in this study. Such benefits include, but not limited to; technological synergy, wider use of the consolidated firm's strength and better economies of scale (Ugwuanyi, 2015). These benefits promote marketing of firms' products and are equally important in the risk management strategy of any firm. It is obvious that banks in Nigeria took advantage of the benefits of consolidation to improve their service delivery and the result of this study is a reflection of it.

A number of policy initiatives to support local industrialization and Agricultural reforms which are aimed at enhancing economic growth and development by the government can also be advanced as reasons for the increase in access to credit by the rural dwellers within the period. During the period beginning from 2007, government policies on agricultural sector development toensure price stability, provision of free storage facilities for farmers, tax exemption on agricultural business and duty free importation of agricultural machinery have encouraged credit-channelling to the agricultural business (Eze, 2010). Agriculture is the business of the rural dwellers in Nigeria and obviously the farmers residing in the rural areas have taken advantage of the government policy which significantly contributes to the upsurge in the DMBs credit to the rural clients.

5. RECOMMENDATIONS

It is thus recommended that the regulatory authority, the apex bank in Nigeria, Central Bank of Nigeria, should seek sustainable and result-oriented innovative avenues to engage the banks collaboratively and come up with possible ways to actualise the financial inclusion policy to increase bank-customer proximity in the rural areas. It is also recommended that Government should provide infrastructures like good access roads to the rural areas, electricity and support investments in Information and Communication Technology (ICT) in the rural areas as this will encourage the spread of banks branches to the hinterlands. Another recommendation is that banks should design specific products that fit the rural credit market and collaborate with Community Based Organisations (CBOs) to enlighten the target market. The implementation of these recommendations will increase the volume of credit access in the rural areas even more, ensures better trade-off for the banks, which will subsequently lead to economic growth.

6. CONCLUSION AND SUMMARY

The aim of the study was to ascertain the effect of consolidation on rural access to credit in Nigeria. Consolidation leads to the closure of bank branches in the rural areas and encourages the clustering of bank branches in the urban areas as new branches are opened by banks to advance competitive advantage and sectoral economies of scale. As a consequence, this increases the bank-customer physical distance for rural customers and making case for financial exclusion of residents in the rural areas.

Secondary data for the period 1994 to 2014 obtained from the CBN annual bulletin on the annual total credit of DMBs to the rural customers was used for the study. Total number of bank branches was also obtained from the same source of data collection and the descriptive statistics shows that consolidation affects the geographical distribution of banks in Nigeria as the rural branches were scaled down immediately after the consolidation exercise in 2005. However, the number of urban branches increased almost on a yearly basis after consolidation, leading to overall increase in the number of bank branches in operation in the country. This is indicative of the fact that the Nigerian banking landscape after consolidation, which comes with change of ownership, change in management board and change of business strategy, witnessed the redistribution of bank branches in the country in keeping with the decision of the new proprietors.

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The test difference conducted with Mann-Whitney U-test shows that rural borrowers, accessed more credit in the post-consolidation period when compared to the pre-consolidation period. This implies that consolidation did not affect access to credit by rural borrowers negatively and it is indicative of the use of lending technologies by banks which reduces the effect that distance would have created on their service delivery. The result can also be influenced by the determination of the rural borrowers to access credit which they demonstrate in travelling to the nearest bank branch for transactions, the distance notwithstanding. Based on this finding, it can be concluded that in today's banking environment, distance is less a barrier as modern banking technology has increase banks' reach and supports better customer-bank relationship. Nevertheless, evidence from the study suggest that if bank branches are opened in the rural areas and synergise with the available technology, it will aid even better access to credit by rural dwellers as banking services will be brought closer to them.

Future studies can focus on the effect of specified distance to a regulated bank branch on access to credit by rural residents in the pre and post consolidation periods using a more current data.

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