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Empirical assessment of the effects of cashless policy on financial inclusion in the Nigerian emerging economy

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ABSTRACT

The present study examined the effects of cashless policy on financial inclusion in the Nigerian emerging economy. The necessary data were collected from the Central Bank of Nigeria Economic Reports as well as Statistical Bulletin and the ordinary least squares method was applied to analyze the data. The findings reveal that the cashless policy maintained a non-significant relationship with financial inclusion both in urban and rural areas of Nigeria. The findings show that the cashless policy had a significant effect on increasing customers' deposits in commercial banks of Nigeria. Volume of Automated Teller Machine (ATMVL) maintains a positive and significant effect on financial inclusion indicators in urban center compared with the rural areas. Volume of Point of Sales (POSVL) shows more significant and positive influence on financial inclusion in urban area than the rural area. However, Web Based Technique (WBTVL) reveals a non-significant effect on financial inclusion both in urban and rural centers. The study therefore recommends that more branches of commercial banks and ATM centers/outlets should be opened in rural urban centers with efficient network systems and security in order to enhance banking penetration and by extension effectiveness of the financial inclusion and poverty reductions.

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1. Introduction

Cashless policy reduces the bulk of physical cash individual/corporate bodies carry for business transactions. The reduction of the physical cash in the economy invariably increases the level banks' deposits. Increase in demand deposits endears a bank customer to access financial services or products such as Automated Teller Machines (ATMs), point of sales (POSs) and loans (Bayero, 2015). Loan facilities are employed by the bank customers to undertake viable investments for income generation, thus contributing towards attainment of full employment and the growth of the economy. The cashless policy is a paradigm shift from traditional banking transaction of making payments and/ or carrying cash to more recent developed electronic cash transaction (Adu, 2016). The Central Bank of Nigeria (CBN) cashless policy appears very effective everywhere the internet facilities can be found. Cashless policy does not favor the financially excluded in an economy; and it connotes that banking penetration occasioned by financial inclusion policy that could not be influenced without the cashless policy in urban areas and particularly in the rural areas in Nigeria (Ovat, 2012; Odior & Banuso, 2012). This is

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because banking penetration in Nigeria is a function of some factors such as security, capital/cost involvement, patronage, infrastructural development, efficient network systems, etc. These further exacerbate the capacity of the unbanked populace to access financial services if at all banking, services are available in both urban and rural centers. Financial inclusion is inactive for the unbanked populace within the Nigerian financial systems (Ukama & Adigun 2013; Siyanbola, 2013; Omoare, 2015). Financial inclusion links people to banks thus enabling them benefit from the process.

One of the bases upon which financial inclusion is promoted is proximity to financial services. Proximity to financial services portends people have branches of commercial banks or microfinance banks nearer to them. This tends to increase bank deposits, savings, easy access to loan facility and fast track online banking transactions (Nwankwo & Eze, 2012; Olanipekun et al., 2013). The efficiency of the cash less policy determines the extent that the financial inclusion objectives may be achieved. The foregoing implies that there may be a correlation between cash less policy and financial inclusion. The correlation/causality between cash less policy and financial inclusion is what this present study seeks to establish on the empirical fronts. A rigorous pursuit of financial inclusion goal no doubt is a fundamental factor for economic acceleration and poverty mitigation given that the cashless policy is effective. The thrust of the cash less policy is based on the observation that it has not significantly influenced financial inclusion goal of the Central Bank of Nigeria.

The introduction of the cashless policy in Nigeria by the Central Bank of Nigeria was gear towards ensuring that banking services get to the reach of everybody and create a platform for everyone for the purpose of empowerment with a view to influence the way and manner businesses are transacted in a general broad form. However, this is not the reality in the Nigerian system. The informal subsectors hardly have access to financial services from the commercial banks. The case is even very worst to mention concerning the rural dwellers. We may hardly find commercial banks in every rural area in Nigeria perhaps due to insecurity, low patronage, amongst other factors. Grass root banking services are not extended to the informal units in the rural areas. One tends to wonder how the cashless policy is favorable to them by way of financially including these sets of issues. This obviously serves as a gap in literature on the empirical front for investigation. Similarly, attempts in Nigeria to promote the cashless policy have remained unsuccessful due to functionality problem. For example, many Automated Teller Machines are not working properly and expectedly always perhaps due to network problems, epileptic power supply and inadequate fund in the machine, thus short circuiting customers' intention to benefit from the cashless policy in Nigeria. Moreover, the numbers of ATMs centers in Nigeria has not increased to serve the rural dwellers perhaps because the numbers of rural branches of commercial banks are fewer. These pockets of challenges have the propensity to affect people to access financial services, thereby adversely affecting financial inclusion drive. Similarly, in the first quarter of 2017 the Central Bank of Nigeria mandating banks to charge 1.5% on cash withdrawals and deposits above five hundred thousand naira (N500, 000). A lot of people have begun to nurse uncertainty as regard the workability of the cashless policy and its effect on financial inclusion occasioned by this harsh policy development by the apex bank in Nigeria. Against the back drop of the above existing gaps and particularly the dearth of empirical researches in Nigeria, this research is undertaken with a view to contribute to the existing knowledge.

2. Literature review

2.1. Empirical review

The empirical research conducted by Ardic et al. (2011) shows that greater proportions of adults do not have the access to financial inclusion in less developed countries compared with the developed ones. A study by Adeniyi and Olutayo (2015) over the nexus between cash less policy and financial inclusion reveals that the respondents in the study were more satisfied in the use of cash less policy; and that it enables them access financial services easily. Akhalumeh and Ohiokha (2012) through empirical

research observed some challenges with the introduction of cashless policy. Some of the findings from the empirical analysis reveal that 34% of the respondents cited problems of internet fraud, 15.5% cited problem of limited point of sales (POS) and automated teller machine (ATM), 18.69% of the respondents cited problem of illiteracy and 30.99%, stayed neutral; i.e. the respondent not being sure of problem expected or experienced under the cashless policy. Most especially they submit that the effect of the cashless policy is not well felt in rural centers in Nigeria due to pockets of challenges like network, frauds and armed robbery attacks. Intuitively this necessarily engenders the ability of people to continually prefer cash less policy and thus promote financial inclusion directly or indirectly. Acha Ikechukwu (2012) discussed by applying appropriate regulatory interventions and commitment of other interest parties to the core mission of microfinance banking, the existing challenges with cashless banking can be resolved. Yaqub et al. (2013) provided an insight on the challenges in existing regularities for the development of cashless banking operations. Alao and Sorinola (2015) presented an empirical investigation for the relationship between the cashless policy and customers' satisfaction on commercial banks in Ogun State, Nigeria. The findings of the study disclosed that cashless policy could contribute to customers' satisfaction and its policy could add significantly to customers' satisfaction through electronic channels. Ajayi (2014) investigated the effect of cashless monetary policy on Nigerian banking industry including the issues, prospects and challenges. Odumeru (2013) recommended that relevant stakeholders in Nigeria have to pay more attention to the relative advantage, complexity, compatibility, trialability and observability of the adoption of mobile banking to increase its usage. Achor and Robert (2013) discussed the shifting policy paradigm from cash-based economy to cashless economy in Nigeria. Okoye and Ezejiolor (2013) investigated the significant benefits and essential elements of cashless policy in Nigeria, and also examined the extent to which it could enhance the growth of financial stability in the country. They recommended that the government should adopt different plans to educate the non-literate Nigerians about the cashless economy. Mieseigha and Ogbodo (2013) performed an empirical analysis of the benefits of cashless economy on Nigeria's economic development.

There are few studies that have examined the impact of the cashless policy on financial inclusion both in developed and developing countries, which necessitates the gaps for investigation in this study.

3. Methodology

This research used the correlation design in the period 2007-2016. The data were collected from the Central bank of Nigeria statistical bulletin and economic reports. The study employs the ordinary least squares and correlation matrix as estimation methods.

3.1 Model Specification

Four econometric models were used in this research. The mathematical and stochastic models of this research are indicated below:

$$\text{Financial inclusion} = F(\text{cashless policy}) \quad (1)$$

$$NCBNKBR = \beta_0 + \beta_1 ATMVL_t + \beta_2 POSVL_t + \beta_3 WBTVL_t + \mu_t \quad (2)$$

$$NCBNKBU = \beta_0 + \beta_1 ATMVL_t + \beta_2 POSVL_t + \beta_3 WBTVL_t + \mu_t \quad (3)$$

$$DLRCBNKB = \beta_0 + \beta_1 ATMVL_t + \beta_2 POSVL_t + \beta_3 WBTVL_t + \mu_t \quad (4)$$

$$ACBNKUR = \beta_0 + \beta_1 ATM_sVL_t + \beta_2 POS_tVL_t + \beta_3 WBTVL_t + \mu_t \quad (5)$$

where;

Financial inclusion was proxy using the following variables:

NCBNKBR represents the number of commercial bank branches in rural area,
 NCBNKBU represents the number of commercial bank branches in urban area,
 DLRCBNKB represents the deposits and the loans in rural area of commercial bank branches in Nigeria,
 ACBNKUR represents aggregate number of commercial bank branches in urban and rural areas of Nigeria.

β_1 to β_3 represent coefficients of the parameters of estimation and t is the period in question.

While cash less policy was measured using

ATMVL = Volume of Automated Teller Machines in the banks in the period under investigation.

POSVL= Volume of point of sales.

WBTVL= Volume of Web Based Techniques in the banking industry.

β_0 is the intercept while μ_t is stochastic disturbance term acting as a surrogate.

4. Empirical analysis

Table 1

Unit root test

Variables	ADF statistic value	Test critical value at 5%	Meaning
ATMVL	-5.283454	-3.081002	Stationary at first difference
POSVL	-2.723114	-1.968430	Stationary at first difference
WBTVL	-2.504079	-1.966270	Stationary at first difference
NCBNKBR	-3.644276	-1.966270	Stationary at first difference
NCBNKU	-3.741657	-1.966270	Stationary at first difference
DLRCBNKB	-8.543936	-1.966270	Stationery at first difference
ACBNKUR	-2.377539	-1.968430	Stationery at second difference

Source: Computed from E-view 8.0 (2017)

The Augmented Dickey Fuller test result shows that the variables were stationary at first difference. This connotes that there is the tendency for the absence of spurious regression result.

4.1 Ordinary Least Square Multiple Regression Results

The regression results in Table 2 to Table 5 show that cashless policy largely determine financial inclusion in Nigeria in the long run as the adjusted R-square of the four models were very strong. For example, the cashless policy is seen to determine the number of commercial bank branches in rural area, number of commercial bank branches in urban areas, deposits and loans of rural commercial bank branches and aggregate number of commercial bank branches both in the urban and rural areas of Nigeria with about 61%, 75%, 82% and 53%, respectively, leaving the remaining percentages unaccounted for due to the presence of stochastic error term acting as a surrogate in the models. The significance of these findings is that the CBN cashless policy is one of the significant drivers of financial inclusion in the Nigerian Economy. However, models 1, 2 and 3 reveal that components of the cashless policy such as volume of Automated Teller Machines (ATMVL), volumes of point of sales (POSVL) and volume of web based technique (WBTVL) put together significantly engender financial inclusion in Nigeria; while model 3 reveals contrary results. The individual coefficients of the variables in each model show that volume of automated teller machines (ATMVL) and volume of point of sales (POSVL) contribute positively to increase in the number of commercial bank branches in urban and rural centers and as well as the aggregate number of commercial bank branches both in the urban and rural areas of Nigeria and were not statistically significant except for model 3 where the volume of

automated teller machines (ATMVL) and volume of point of sales (POSVL) were positive and significantly contribute to deposits and accessibility of loans in rural bank branches of commercial, a proxy for financial inclusion. This startling empirical result may not be unconnected to some of the challenges replete with the cashless policy and low level of Education / sensitization by stakeholders. While volume of web based technique (WBTVL) is negative on financial inclusion in urban areas of Nigeria, it is however positive at influencing deposit and loans accessibility in the rural area of Nigeria and was not statistically significant. The Durbin Watson statistics of 1.65, 2.03, 2.40 and 1.49 respectively from the four empirical models can be approximated to two (2) and reveal absence of serial autocorrelation, thus making the results more useful for policy prescription to regulatory body.

Table 2

Model 1 Result: Dependent variable: NCBNKBR

Variables	Coefficient	Prob. Value
C	2605.62 ***** [5.75]**	0.00
ATMVL	3.05 ***** [0.16]	0.87
POSVL	1.29***** [0.57]**	0.57
WBTVL	- 152.38***** [-2.44]**	0.03

R-Squared= 0.614
Adjusted R-square= 0.473
F-Statistic= 4.376
Prob(F-statistic)= 0.023
Durbin-Watson= 1.653

Source: Researchers' computation from E-views 8.0 (2017)
*****Coefficient values
[]** T- statistic value in parenthesis

Table 3

Model 2 Result: Dependent variable: NCBNKU

Variables	Coefficient	Prob. Value
C	-8.99 ***** [-1.10]**	0.00
ATMVL	1.12 ***** [2.39]	0.00
POSVL	1.05***** [0.8.24]**	0.00
WBTVL	2.70***** [8.31]**	0.00

R-Squared- 0.757
Adjusted R- Squared= 0.669
F-Statistic= 8.593
Prob (F-Statistic)= 0.002
Durbin- Watson= 2.033

Source: Researchers' computation from E-views 8.0 (2017)
*****Coefficient values
[]** T- statistic value in parenthesis

Table 4

Model 3 Result: Dependent variable: DLRCBNKB

Variables	Coefficient	Prob. Value
C	19720.9 ***** [0.18]**	0.85
ATMVL	-1197.81 ***** [-0.15]	0.88
POSVL	-63.01***** [-0.09]**	0.92
WBTVL	85356.72***** [5.35]**	0.00

R-Squared= 0.822
Adjusted R-Square= 0.751
F-Statistic= 11.558
Prob(F-Statistic) = 0.000
Durbin-Watson = 2.401

Source: Researchers' computation from E-views 8.0 (2017)
*****Coefficient values
[]** T- statistic value in parenthesis

Table 5

Model 4 Result: Dependent variable: ACBNKUR

Variables	Coefficient	Prob. Value
C	2877.01 ***** [20.34]**	0.00
ATMVL	6.73 ***** [0.40]	0.69
POSVL	0.55***** [0.34]**	0.73
WBTVL	-110.76***** [-2.39]**	0.04

R-Squared= 0.535
Adjusted R-Squared= 0.328
F-Statistic = 2.591
Prob(F-Statistic) = 0.108
Durbin- Watson= 1.491

Source: Researchers' computation from E-views 8.0 (2017)
*****Coefficient values
[] ** T- statistic value in parenthesis

The findings made from the empirical estimation as regard the impact of the CBN cashless policy on financial inclusion in Nigeria is intriguing. The cashless policy is seen to determine financial inclusion in Nigeria in the long – run. Prior to this time, the cash based system was fraught with a lot of challenges which makes the cashless policy generally embraced and preferred. The stress and series of attacks associated with the cash based policy may have caused the preference by people for the cashless policy. The policy allows myriad customers access financial products in the banks which was previously impossible. It has increased the habit of savings among bank clients and thus engenders accessibility to financial services; consequently, influencing banks financial performance. The findings are in tandem with the study of Ogbeide and Fapohunda (2017) and Osazevbaru and Yomare (2015). There are very scanty studies in Nigeria that have examined how the cashless policy correlates with financial inclusion. This makes the comparison of this study's findings with prior researches prettily difficult to achieve. Therefore, the implication of the cashless policy influencing financial inclusion would necessary lead to accessibility of financial products by banks' customers than before and consequently assist to mitigate adverse effects of poverty in Nigeria. It further alleviates the pains of the unbanked populace in that the cashless policy tends to close the vacuum of not being able to easily obtain certain financial services.

5. Conclusion

The importance of the cashless policy in an emerging economy of Nigeria cannot be ignored. The policy is a necessity for speedy economic development; decreasing of frictions that affect the smooth operations of business transactions in both the money and capital markets. This study has shown that cashless policy is a significant driver of financial inclusion and the very platform upon which government programs to mitigate the adverse effect of poverty can be robustly addressed faster than expected. It is therefore suggested that branches of commercial banks and ATM centers/ outlets should be opened in rural urban centers with efficient network systems and security to enhance banking penetration and by extension effectiveness of the financial inclusion and poverty reduction in Nigeria at large.

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