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An Empirical Analysis of the Impact of Agency Banking on Financial Inclusion in Benue State, Nigeria: Implications for Economic Activities

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Abstract

Twelve (12) out of the Twenty-three (23) local government areas (LGAs) in Benue State do not have the presence of banks over a long period of time. This situation has deprived the inhabitants of these LGAs of access to formal financial services until the advent of agency banking. This study therefore, investigates the impact of agency banking on financial inclusion and economic activities in Benue State focusing on the agency banking activities of First Bank Ltd. The study is anchored on the agency theory and it used a survey design. The study has utilized both primary and secondary data that were analyzed using descriptive statistical tools and structural equation models. Findings of the study have revealed that agency banking activities of First Bank Ltd have immensely enhanced financial inclusion and economic activities in Benue State. However, challenges such as shortages of cash, security problems, network failures, and lack of financial literacy are militating against the smooth operations of the agency banking in the State. On the basis of these findings, the study has recommended among others that, other banks operating in the State should be encouraged to venture into agency banking in the state so as to have a wider coverage of agency banking in the State. Also, government should provide security and partner with the private sector to provide national carrier communication network system to overcome the network failure challenge. Finally, banks should intensify efforts to educate the masses about the validity and potency of agency banking.

Keywords: agency banking, agency theory, Benue State, economic activities, financial inclusion, structural equation models

JEL: E5, E58, G2, G21.

1. Introduction

The subject matter of financial inclusion has assumed considerable interest both at the international and national discourses. It is a general acceptable fact that financial inclusion plays a key role in boosting economic activities, reducing extreme poverty, and promoting inclusive sustainable development. Increased financial inclusion brings savings and credits closer to the people (Ogbebor, 2018).

According to Dermirguic-Kunt and Klapper (2012), in Sub-Saharan Africa, over 40% of the population saves money, but only half of this population have a formal financial provider at their disposal. In Nigeria, the Central Bank of Nigeria (CBN) (2012) reported that as of 2011, out of an estimated population of 84.7 million adult Nigerians, 39.2 million representing 46.3% of Nigerian adults are financially excluded in terms of the provision of banking and financial services.

In Benue State, there are twenty-three (23) LGAs, however, banks are only found in eleven (11) LGAs and these banks are mostly located in the headquarters of such LGAs. The remaining twelve (12) LGAs do not completely have access to any banking services. This worrisome situation makes it impossible for rural dwellers in such LGAs to access formal bank services. What is commonly obtainable in these areas is informal financial

institutions and other alternative financial providers like traders or input providers that charge exorbitant interest rates on very short term loans which rather aggravate the poverty situation in these areas.

With the introduction of agency banking by the CBN to achieve 95% financial inclusion rate by 2024; commercial banks in Benue State are now operating the agency banking system. Thus, the question that arises is: has the agency banking system enhanced financial inclusion and economic activities in Benue State given its operation? The objective of this paper is to investigate the impact of agency banking on financial inclusion and economic activities in Benue State of Nigeria, focusing on the agency banking activities of the First Bank Ltd in Benue State.

2. Literature Review

The literature review is divided into three segments, namely; conceptual clarification, theoretical review and the empirical literature.

2.1 Conceptual Clarification

Under this section, the concepts of Agency banking, financial inclusion, and economic activities are conceptualized.

a. Agency Banking: The CBN (2017) defines agency banking as the provision of financial services to customers by a third party (Agent) on behalf of a licensed deposit financial institution (FI) and/or Mobile Money Operators (MMO). Ogah, Okwe, and Adeoye (2015) conceptualized agency banking as the discharge of financial services outside the conventional bank branches using the instrumentality of the non-bank retail agents with the aid of technological approaches such as, card readers, point-of-sale (POS) terminal or mobile phones for real time transaction processing. Furthermore, the Bangladesh Bank (2013) defined agency banking as a system of providing limited scale banking and financial services to the unbanked population via the engagement of the agents under a valid agency agreement, instead of a teller/cashier.

b. Financial Inclusion: Afande and Mbugua (2015) conceptualized financial inclusion as the access to a full range of responsibly delivered formal financial services at an affordable price and at a reasonable convenience of an individual, household, or group at a particular point in time. Furthermore, Ogbebor (2018) defined financial inclusion as the provision of financial services such as savings, loans, insurance, payments, money transfer, financial advisory services amongst others at affordable costs to the low-income and disadvantaged members of the society.

Furthermore, the Reserved Bank of India (RBI) (2015) explained financial inclusion as the process of making access to appropriate financial products and services needed by the vulnerable groups and low-income groups at an affordable cost in a fair and transparent manner by the principal financial institutions.

In this study, financial inclusion is access to financial services by the people at an affordable cost and efficient manner using the medium of agency banking especially the rural people that hitherto do not have access to such financial services.

c. Economic Activities: Economic activities are actions that involve the production, distribution and consumption of goods and services at all levels within a society. Any action that involves producing, distributing, or consuming products or services in a society is an economic activity. The primary aim of the economic activity is the production of goods and services with a view to making such goods and services available to the consumers. Additionally, any activities involving money or the exchange of products or services for money are considered as economic activities. For instance, running a small scale business is a great example of economic activity (Jhingan, 2008).

2.2 Theoretical Review

This study is anchored on the agency theory that was developed by Fama and Jensen in 1983. The agency theory focuses on analyzing the Principal-Agent relationship. An agency relationship emphasizes a situation where the principal engages another person as an agent to discharge certain services on his/her behalf. In the principal-agent relationship, it is expected that each of the partner involved in the relationship derives some net benefits. Under this arrangement, the principal delegates some responsibilities to the agent to discharge. This delegation of responsibility by the principal and the resulting division of labour are helpful in promoting an efficient and productive economy. However, such delegation also means that the principal needs to place trust in an agent to act in the principal's best interest (Walker, 2003).

Thus, the relationship between the principal and the agent is referred to as "agency", and the relationship is governed by the law of contract of agency which stipulates clear guidelines for the relationship. The contract

establishing principal-agent relationship states that the agent will act for and on behalf of the principal and the agent is under the obligation of loyalty to the principal and strictly follows the principal's instructions in the discharge of the authorized functions. The agent is not expected to take personal advantage of the business opportunities the agency position uncovers to defraud the principal and other parties involved. Under the law of contract of agency, the principal reposes trust and confidence in the agent and sees that the agent is trustworthy and competent enough to perform the saddled responsibilities. These obligations bring forth a fiduciary relationship of trust and confidence between the principal and the agent (Green, 2012).

This theory is suitable for this study because it has attempted to analyze the dynamics of the agency banking system whereby the commercial banks as the Principals delegate some banking services to licensed agents to discharge on their behalf. These delegated financial services include, cash deposits, cash withdrawals, transfer of funds, payments of bills, opening of bank accounts, enrollment of BVN, and purchase of airtime. The agents operate under the regulation of the bank and the agents try to keep the relationship as postulated by the agency theory.

2.3 Empirical Literature

The previous empirical literature has made attempts to analyze the relationship between agency banking and financial inclusion across countries. In this regard, Afande and Mbugua (2015) investigated the role of agent banking services in the promotion of financial inclusion in Nyeri town of Kenya. The study used descriptive and inferential statistics and found that customers patronized agency banking services irrespective of the extra charges of agency banking. Furthermore, the study found that financial inclusion under the agent banking is determined by the availability of liquidity, geographical coverage, costs and the security of agent banking services. Similarly, a study by Cheston (2016) found that in India, agent banking is providing locational convenience banking services which have increased the usage and has reduced the cost of accessing and managing new clients by banks. Agents have immensely helped in accounts opening, offering of cash-in/cash-out services, acceptance of loan repayments, making payments and transfers, recharging of phones, helping in e-money usage; and are now beginning to facilitate financial capability interventions.

Another study by Musaya and Kerongo (2015) which investigated the role of agency banking in enhancing financial services in Kilindini District, Mombala in Kenya found that the costs of agency banking, payments of bills by the agents and the creation of financial services awareness among the rural populace have positive relationship with access to financial services. Thus, the study concluded that the advent of agency banking has increased financial awareness among the unbanked people.

Lotto (2016) also investigated the role of agency banking in promoting financial inclusion in Tanzania. The study used descriptive and inferential statistical tools and found that agency banking has enhanced financial inclusion through the geographical coverage of agent banking, and the low cost associated with the delivery of financial services by the agents. Again, the study by the Bangladesh Institute of Bank Management (2017) on the effectiveness of agent banking in financial inclusion in Bangladesh found that agents are offering financial services such as ; accepting deposits, foreign remittances, and payment of utility bills which have promoted financial inclusion in the economy.

Also, Achugamonu, Uzoma, Ikpefan, Ochei, Ourinola, and Okorie (2016) examined the contribution of agent banking to financial inclusion in Nigeria. Using a multivariate regression model, the study found that the agent banking geographical spread, agent banking services, and the promotion of financial awareness by the agents are positively related with financial inclusion; while the agent banking barriers are negatively related with financial inclusion growth in Nigeria.

Regarding the nexus between agency banking and poverty reduction, Akighir, Tyagher, and Ateata (2020) conducted a study on agent banking and poverty reduction in Benue State of Nigeria. The study focused on agent banking activities of the first bank Nigeria Ltd. Using the descriptive statistics and paired-t test as well as the Foster, Greer and Thornbecke (FGT) index and the logit regression model, the study concluded that agent banking has the likelihood of poverty of reduction in Benue State.

3. Methodology

3.1 Study Area

The study area of this study is Benue State which is one of the States of the Federation. The State has a population of about 5,789,952 based on the 2016 census projections figures; its administrative capital is Makurdi (Tser, 2013). The State is predominantly made up the Tiv, Idoma and Igede peoples, respectively.

The State is made up of twenty-three (23) local government areas. For administrative convenience, Benue State

is divided into three geographical areas, namely; zone A (Katsina-Ala, Konshisha, Kwande, Logo, Ukum, Ushongo and Vandeikya local governments); Zone B (Gboko, Buruku, Tarka, Guma, Gwer East, Gwer West, and Makurdi local governments); and Zone C (Ado, Agatu, Apa, Obi, Ogbadibo, Ohimini, Oju, Okpokwu, and Otukpo local governments). Each local government area of the state has markets where economic activities take place.

3.2 Population of the Study

The population of this study comprises the banking agents of First Bank Ltd in Benue State and the customers of the agents in Benue State. The total number of agents of First Bank Ltd in Benue State as at June 31, 2020 is 1,053 agents.

3.3 Sample Size Determination

The study used the Taro Yammene's formula to determine the optimum sample size for the study. The formula is expressed as:

$$n = \frac{N}{1+N(e^2)} \quad (1)$$

Where n is the sample size, e is the level of significance, N is the population which is 1,053 agents of First Bank Ltd in Benue State.

Using the formula, that is , $n = \frac{1053}{1+1053(0.05^2)}$ = 400

Therefore, the optimal sample size for agents of First Bank Ltd in Benue State is 400 agents.

For the customers, 20 customers who use the banking platforms of the agents were selected in each of the 23 LGAs of the State; this gave a total of 460 customers. Thus, the total sample size for this study comprises 400 agents and 460 customers, summing up to 860 respondents.

3.4 Sampling Technique

The study combined simple the random sampling technique with the proportionate sampling technique which is a non-probability sampling technique. The 400 agents were randomly selected, this sampling technique offers every member of the population the equal opportunity of been included in the sample. On the other hand, the 460 customers were proportionately selected with the assistance of the agents who have access to the customers.

3.5 Sources and Methods of Data Collection

The data for this study were obtained basically from two sources, namely; the primary and secondary sources. The primary sources were concerned with the information that were sourced from the questionnaire; while the secondary data were obtained from the records of First Bank Ltd on agency banking and the records of the agents regarding their transactions with the customers, specifically, on the volume and the value of financial transactions and the type of transactions.

3.6 Methods of Data Analysis

The study has employed both descriptive and inferential statistics to analyze the data collected with a view to ascertaining the impact of agent banking on financial inclusion and economic activities in Benue State. In order to measure the impact of agent banking on financial inclusion, three indices of financial inclusion, namely; the penetration index, services and usage were constructed.

i. Penetration: Penetration measures the extent to which agent banking activities are found in the 23 local government areas of Benue State. It specifically measures the geographical coverage of agency banking activities of First Bank Ltd in Benue State.

ii. Services: Services as a measure of financial inclusion has to do with the type of financial services offered by the agency banking. This is measured in terms of the type of financial services, the volume of the financial services, and the value of the financial services. The financial services considered in this study include, accounts opening, BVN enrollments, cash deposits, money transfers, utility bills payment, cash withdrawals and others.

iii. Usage: This has to do with the willingness of the customers to use the financial services offered by the agents in the various LGAs.

3.7 Model Specification

Based on the theoretical postulations of the Agency theory, Figure 1 depicts how the agents implement the delegated functions under the Agency banking contract to achieve financial inclusion under the supervision of the banks.

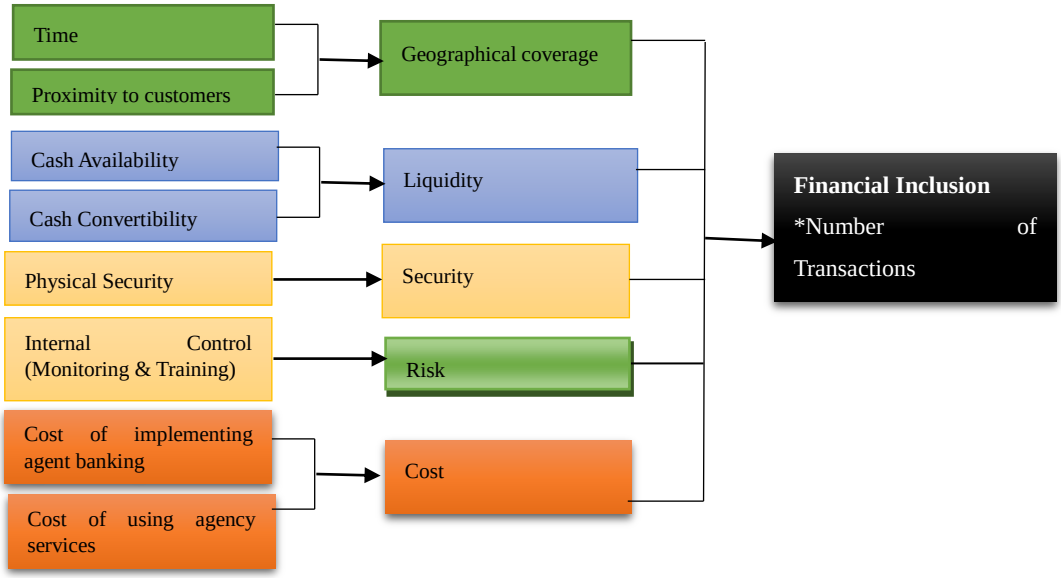

Figure 1. A Schema model of the structural equation model

On the basis of Figure 1, two equations are specified to analyze the nexus between agent banking and financial inclusion.

$$Trans = f(tim, prxmt, ca, cc\ ps, ic, ci\ cu) \quad (2)$$

Where $Trans$ is the number of transactions performed by an agent;

tim is the time it takes a customer to access financial services at the agent's location;

$prxmt$ is the proximity of customers to an agent's location;

ca is cash availability with the agent;

cc is cash convertibility (cash conversion circle, i.e. the time it takes a client to convert the cash in his/her account using ATM at the location of an agent. It also has to do with the time it takes an agent to convert the money in his/her account to meet a customer's demand);

ps is the presence of security;

ic is internal control mechanism employed by the bank;

ci is cost of implementing agent banking by the bank; and

cu is the cost of using the financial services at an agent's location.

The stochastic form of the model is expressed as:

$$Trans = \alpha_0 + \alpha_1 tim + \alpha_2 prxmt + \alpha_3 ca + \alpha_4 cc + \alpha_5 ps + \alpha_6 ic + \alpha_7 ci + \alpha_8 cu + \mu_1 \quad (3)$$

Where α_0 is the constant, $\alpha_1 - \alpha_8$ are the parameters estimated and μ_1 is the error term.

The second model is stated as:

$$aop = f(tim, prxmt, ca, cc\ ps, ic, ci\ cu) \quad (4)$$

Where aop is the number of accounts opened by the agents. Other variables are as earlier defined. The stochastic form of model 4 is expressed as follows:

$$aop = \beta_0 + \beta_1 tim + \beta_2 prxmt + \beta_3 ca + \beta_4 cc + \beta_5 ps + \beta_6 ic + \beta_7 ci + \beta_8 cu + \mu_2 \quad (5)$$

Where β_0 is the constant term for model 4, $\beta_1 - \beta_8$ are the parameters estimated and μ_2 is the error term for model 5.

Models 3 and 5 are further transformed into Structural Equation Modelling (SEM). SEM is a multivariate statistical framework that analyses complex relationship between directly or indirectly observed variables. This technique combines regression analysis, pathway analysis, factor analysis, and simultaneous econometric equations to estimate a system of linear equations to analyze a hypothesized causal relationship (Stein, Morris, & Nock, 2012).

The generic specification of the SEM is given as:

$$Y = \Gamma X + \beta Y + \xi \quad (6)$$

Where Y is the vector of endogenous response variables; X is the vector of exogenous predictors, Γ and β are matrices of coefficients and ξ is a vector of errors for the equations.

The classical form of structural equation model is described by the three fundamental equations as:

$$X = \Lambda_X \zeta + \delta \quad (7)$$

$$Y = \Lambda_Y \eta + \varepsilon \quad (8)$$

$$\eta = \beta\eta + \Gamma\zeta + \xi \quad (9)$$

X and Y denote the vectors of observed indicators of exogenous variables and endogenous latent variables. ζ and η are the vectors containing the individual exogenous and latent variables; Λ_X and Λ_Y are vectors of coefficients relating indicators to latent variables; β and Γ are coefficient matrices; δ and ε are the vectors of measurement errors for X and Y; and ξ is a vector of errors for η variables.

4. Results and Discussion

Though 400 copies of questionnaire were distributed to the agents and 460 copies of questionnaire were distributed to the customers, but only 386 copies and 451 copies were retrieved from the agents and customers, respectively. Thus, this section begins with the analyses of the socio-economic characteristics of the agents and the customers of the agents. The socio-economic characteristics of the agents and the customers are presented in Table 1.

Table 1. Socio-economic characteristics of the agents and customers

Variables	**Agents**		**Customers**	
	Frequency	Per cent	Frequency	Per cent
		Sex		
Male	284	73.58	223	49.45
Female	102	26.42	228	50.55
Total	386	100.00	451	100.00
		Age (Years)		
18-30	38	9.84	126	27.94
31-45	249	64.51	115	25.50
46 and Above	99	25.65	210	46.56
Total	386	100.00	451	100.00
		Educational Level		
No Formal Education	0	0.00	15	3.33
Primary Education	11	2.85	102	22.62
Secondary Education	304	78.76	183	40.58
Tertiary Education	71	18.39	151	33.48
Total	386	100.00	451	100.00

Source: Field Survey, 2021.

The table reveals that for the agents, 73. 58% are male and 26.42 % are female. This suggests that males are more involved in agent banking than female. The finding is in line with the findings of Afande and Mbugua (2015) who found that majority (64%) of the agents were males. For the customers, 49.45% are male and 50.55% are female. This suggests that both male and female gender use agency banking services in the study area. This finding is at variance with that of the Bangladesh Institute of Bank Management (BIBM) (2017) that found the ratio of male and female customers in agent banking to be approximately 70:30. The difference in these findings may be attributed to the differences in the study areas of these studies.

Furthermore, Table 2 shows that for the agents, majority of the agents are between the ages of 31 years and 45 years. The finding is consistent with that of Afande and Mbugua (2015) who found that majority of the operators of agency banking outlets are between the ages of 26 and 35 years. This implies that the youth are dominantly involved in agent banking. In Benue State, this may be attributed to the high levels of unemployment and poverty which have propelled younger people to start looking for means of livelihood. For the customers, majority are between the ages of 46 years and above.

Again, the table has shown that majority (78.76%) of the operators of agent banking outlet have secondary school certificates as their highest level of educational qualification. The finding is in contrast to the findings of

Afande and Mbugua (2015) who found that majority of the agents have diploma as their highest educational qualification. The differences may be attributed to their relative small sample size and differences in the locations of these studies. For the customers, the majority (40.58%) are secondary school holders, followed by those with tertiary educational qualifications (33.48%). The finding is at variance with the findings of the Bangladesh Institute of Bank Management (BIBM) (2017) who found that majority of agent bank customers are primary school holders. The difference may be ascribed to the high level of financial literacy which has made agency banking popular among the uneducated populace in Bangladesh than Nigeria.

4.1 Impact of Agency Banking on Financial Inclusion and Economic Activities in Benue State

In assessing the impact of agency banking on financial inclusion in Benue State, two approaches were used. First, the indices of financial inclusion, namely; penetration, services and usage of services of agency banking were utilized. Second, the structural equations models were estimated.

4.1.1 Penetration of Agency Bank in Benue State

This measures the geographical coverage of agency banking activities of First Bank Ltd in Benue State in terms of the distributional activities of the agents in the various LGAs. The information about the geographical coverage of Agents of First Bank Ltd is presented in the following table.

Table 2. Geographical distribution of the Agents of First Bank Ltd as at June, 2020

Local Government Areas	Number of Agents	Local Government Areas	Number of Agents
Ado	16	Logo*	14
Agatu*	15	Makurdi	243
Apa*	19	Obi*	13
Buruku*	25	Ogbadibo	49
Gboko	94	Ohimini*	10
Guma*	20	Okpokwu	43
Gwer-East*	19	Oju	7
Gwer-West	11	Otukpo	142
Katsina-Ala	41	Tarka*	12
Konshisha*	36	Ushongo*	33
Kwande*	98	Ukum	18
		Vandeikya	75

Note. *Local Government Areas without a Bank.

Source: Records from the First Bank's Financial Inclusion Team, 2021.

Information in Table 2 reveals that out of twenty-three (23) local government areas in Benue State, banks are only operational in eleven (11) LGAs representing 47.83 per cent and the remaining twelve (12) LGAs do not have banks; that is, 52.17 per cent. Again, it is evident in the table that, with the activities of agent bank, First Bank Ltd has agents' outlets in all the twenty-three LGAs. The implication is that; First Bank has penetrated all the LGAs of the State with agency banking activities.

4.1.2 Services and Usage of Agency Banking Services

In order to examine the various services provided by the agents and the usage of these services by the customers, data were collected from the First Bank Ltd Financial Inclusion Team. Table 3 depicts the various services and the extent of usage of these services by the customers in Benue State.

Table 3. Services and usage of Agency Banking Services of First Bank Ltd

Services	2018		2019		H1 2020	
	Volume	Value (N)	Volume	Value (N)	Volume	Value (N)
Cash Deposit	110,581	3,668,508,762	233,210	9,179,407,942	284,930	13,662,469,569
Transfers	93,656	2,509,329,391	108,838	3,825,530,200	376,814	12,210,916,137
Utility Bills	1,088	2,884,627.00	8,720	20,306,930.00	3,264	7,612,735.00
Cash Withdrawals	262,060	4,012,035,868	1,353,834	18,224,203,045	1,130,071	17,479,019,712
Accounts Opened	928	NIL	1,881	NIL	4,314	NIL
BVN Enrollments	1,842	NIL	2,489	NIL	2,519	NIL
Others	20,746	5,472,409	77,316	91,949,844	161,734	259,459,797
Total	490,901	10,198,231,057	1,786,288	31,341,397,961	1,963,646	43,619,477,950

Source: First Bank Plc Financial Inclusion Team, 2020.

Table 3 reveals the services provided by the agents of First Bank Ltd in Benue State. The services commonly offered by the agents are cash deposits, money transfers, payment of utility bills, cash withdrawals, accounts opening, BVN enrollments among others. The table shows the volume and the value of these services from 2018 to the first half of 2020.

In 2018, the total volume of the services provided by the First Bank agents was 490,901. Out of this, 22.53 per cent was for cash deposit, 19.08 per cent was for money transfers, 0.22 per cent was for payments of utility bills, 53.38 per cent was for cash withdrawals, 0.19 per cent was for accounts opened, 0.36 per cent was BVN enrollments, and 4.23 per cent was for other services such as the purchase of airtime. The total value of these transactions in 2018 was N10,198,231,057.00. Out of this, 35.97 per cent was for cash deposits, 24.61 per cent for money transfers, 0.03 per cent for payments of utility bills, 39.34 per cents for cash withdrawals and 0.05 per cent for other services such as the purchase of airtime.

In 2019, the total volume of services provided by the agents was 1,786,288 which represents 75.52 per cent increase over the 2018 figure. Out of this, 13.06 per cent was for cash deposits, 6.09 per cent for transfers, 0.49 per cent for payment of utility, 75.79 per cent for cash withdrawal, 0.11 per cent account openings,0.14 per cent for BVN enrollment and 4.33 per cent for other services. The value of these transactions was N31,341,397,961.00 which represents 67.46 per cent increase over the total value of transactions in 2018. For the value of transactions in 2019, 29.29 per cent was for cash deposits, 12.21 per cent was for transfers, 0.06 per cent was for payment of utility bills, 58.15 per cent was for cash withdrawals and 0.29 per cent was for other transactions.

In the first half of 2020, the total volume of services provided was 1,963,646 which represents 9.03 per cent increase over the entire volume of transactions in 2019. Out of this, 14.51 per cent is for cash deposit, 19.19 per cent is for transfers of money, 0.17 per cent is for the payment of utility bills, 57.55 per cent is cash withdrawals, 0.22 per cent is for account opening, 0.13 is for BVN enrollment and 8.24 per cent is for other transactions. The value of these transactions is N43,619,477,950.00 which represents 28.15 per cent increase over the value of total transactions in 2019. Out of this, 31.32 per cent is for cash deposits, 28.00 per cent is for money transfers, 0.02 per cent is for the payment of utility bills, 40.07 per cent is for cash withdrawals and 0.59 per cent is for other transactions.

To further ascertain the impact of agency banking on financial inclusion in Benue State, the Structural Equation models were estimated and the results are presented in Table 4.

Table 4. Estimates of the structural equation models

Variables	**Model 1** **Dependent Variable: Trans**	**Model 2** **Dependent Variable: AOP**
Tim	0.103*	0.084
	(2.17)	(1.71)
Prxmt	-0.187*	-0.174
	(3.38)	(-3.04) *
CA	-0.141*	0.110
	(2.93)	(2.20) *
CC	-0.300*	-0.134
	(5.74)	(2.40)
PS	-0.117	-0.021
	(-2.17) *	(0.34)
IC	0.0167	0.017
	(0.35)	(0.34)
CI	0.081	0.046
	(1.54)	(0.83)
CU	-0.038	-0.025
	(-0.67)	(-0.43)
Constant	4.924*	4.320*
	(8.99)	(7.57)

LR Test Model vs. saturated:	LR Test of model vs. saturated:
Chi2(42) = 0.000, Prob > Chi2 = 1.0000	Chi2(50) = 0.000, Prob > Chi2 = 1.0000
Fit Statistic	Fit Statistic
Likelihood Ratio	Likelihood Ratio
Chi2_ms (42) | 0.000 model vs. Saturated	Chi2_ms (50) | 0.000 model vs. Saturated
P > Chi2 | 1.000	P > Chi2 | 1.000
Chi2_bs (9) | 48.503 baseline vs. saturated	Chi2_bs (9) | 18.878 baseline vs. saturated
P > Chi2 | 0.000	P > Chi2 / 0.026
Population error	Population error
RMSEA | 0.000	RMSEA | 0.000 Root Mean Squared error of approximation
Pclose | 1.000 probability RMSEA < = 0.05	Pclose | 1.000 probability RMSEA < = 0.05
Baseline Comparison	Baseline Comparison
CFI | 1.000 Comparative fit index	CFI | 1.000 Comparative fit index
TLI | 1.228 Tucker-Lewis index	TLI | 1.911 Tucker-Lewis index
Size of Residuals	Size of Residuals
SRMR | 0.000 Standardized root mean squared residual	SRMR | 0.000 Standardized root mean squared residual
CD | 0.414 Coefficient of determination	CD | 0.461 Coefficient of determination

*Denotes 5% level of Significance.

Source: Authors' Computations using STATA 13.

The result of model 1 showed that there is a positive and statistical significant relationship between time taken to access financial services at an agent's location and the level of financial transactions under the agency banking. This outcome is contrary to *a priori* expectation but the result is not surprising because it may take a customer a shorter time to reach an agent's location, but factors such as cash shortages and network failures due to remote locations of most of the agents may delay the transaction. Oral interviews and focused group discussions revealed that First Bank agents use NTM network, which is not always available in many locations in Benue State.

The result of model 1 also revealed that proximity of customers to agents' locations is negatively related with the volume of financial transactions of the agents. This suggests that, 1 per cent reduction in the distance to the access of agents' locations will lead to 18.7 per cent increase in the volume of financial transactions of the agents. Cash availability at the disposal of the agents is found to have positive and statistically significant relationship with the volume of financial transactions of the agents. This implies that 1 per cent increase in the level of cash availability at the disposal of the agents will lead to 14.1 per cent increase in the volume of financial transaction of the agents.

Also, from model 1, cash convertibility which is the cash conversion circle is found to have a negative and statistically significant relationship with the volume of financial transactions of the agents. 1 per cent reduction in the time it takes a customer to convert the balance in his/her account to cash using ATM card on the POS of the agent and the time it takes an agent to convert the balance in his/her account to meet the customers' financial demands will lead to 3.00 per cent increase in the volume of financial transactions of the agents.

Furthermore, the results of model 1 reveals that security is negatively and statistically related with the volume of transactions of the agents. This suggests 1 per cent reduction in the threats of armed robbers/kidnappers' in the operating environment of the agents will lead to 11.7 per cent increase in the volume of financial transactions of the agents. Again, internal control and monitoring of the agents is found to have a positive relationship with the volume of financial transactions of the agents. Though, the coefficient is not statistically significant, it is indicative of the fact that if the banks regulate the operation of the agents by ensuring that the agents do the right things as specified in the agency contract and guidelines, it will boost the confidence of the users and this will increase their financial transactions with the agents.

The cost of implementing agent banking by the banks is found to have positive relationship with the volume of finance transactions by the agents. 1 per cent increase in the cost of implementing agent banking will lead to 8 per cent increase in the volume of financial transactions by the agents. This implies that increase in the awareness creation about agency banking by the banks, and the procurement of more POS by the banks will increase the number of agents leading to increase in the volume of financial transactions by the agents.

The cost of using agents' financial services is found to be negatively related with the volume of financial transactions by the agents. Though it is statistically significant. However, it suggests that increase in the charges

on financial services by the agents will reduce the volume of financial transactions; while a reduction in the charges will increase the volume of financial transactions.

In order to examine the validity of model 1, the Chi-square test was estimated for testing the goodness-of-fit of the structural equation model. The Chi-Square determines the likelihood that the difference between the population covariance matrix and model implied covariance are zero. Thus, a SEM model is considered a good fit if the value of the Chi-square test is significant (Niels, 2008). In the estimated SEM model, Chi2 (42) = 0 and Prob = 1.000. Therefore, P > Chi2. This implies an insignificant Chi-square statistic, hence, the model is adjudged to have goodness of fit.

Secondly, the population error and Baseline comparism were conducted. The decision rule is that when evaluating the fit statistic, the CFI values and TLI values of ≥ 0.90 and the RMSEA value of < 0.05 are considered adequate. In this estimated SEM, the RMSEA has a value of 0.000 which is less than 0.05 and CFI and TLI values of 1.000 and 1.228, respectively, which are greater than 0.90. This suggests that the residual values are low; implying that the amount of variance not accounted by the model. These statistics have again validated the fitness of the estimated SEM model.

The coefficient of determination of the model has a value of 0.414 which suggests that variation in the volume of financial transactions by the agents as a proxy for financial inclusion is 41.4 per cent accounted for by the explanatory variables included in the model.

Similarly, in model 2 which has the number of the accounts opened by the agents as the dependent variable. In model 2, the time taken to access an agent's location is positively related with the number of accounts opened by the agents. This positive relationship has negated *a priori* expectations; however, this positive sign may be attributed to the fact that it may actually take a client shorter time to arrive at an agent's location but network failures may increase the turn-around time of service delivery in terms of account opening.

Furthermore, the results of model 2 revealed that proximity to an agent's location is inversely related with the number of accounts opened by the agents. 1 per cent increase in the proximity to an agent's location will increase the number of accounts opened by 17.4 per cent. Again, the results of the model showed that cash availability at the disposal of the agents is positively related with the number of accounts opened by the agents. This means that 1 per cent increase in cash availability at the disposal of the agents will increase the bank accounts opened by the agents by 11.0 per cent. This may be because the clients will have the confidence that their deposits and savings will always be intact for withdrawal when the need arises.

Again, the results of the model showed that, the cash convertibility which is the cash conversion circle that deals with the time it takes a client to convert the cash in his/her account to physical cash using ATM card at the agent's location is negatively related with the number of the accounts opened by the agents. 1 per cent reduction in the time taken to convert the cash in a client's account into physical cash using the ATM card on the POS of an agent will increase the confidence of others to open bank accounts with the agents by 13.4 per cent.

Furthermore, the absence of security threats around the operating environment of the agents is found to have a negative relationship with the number of accounts opened by the agents. 1 per cent reduction in the feeling of security threat at the agent's location will increase the number of accounts opened by the agents by 2.1 per cent. This means that the less the feeling of security threat around the operating environment of the agents, the more customers will be inclined to open bank accounts with the agents.

The results of model 2 also showed that the internal control measures put in place by the banks to monitor the operations of the agents is positively related with the number of accounts opened by the agents. That is, by ensuring that the agents operate strictly in line with the guidelines establishing agency banking such as charging the stipulated charges for financial services, collecting the stipulated amounts for deposits and by remitting the collected deposits to the bank will make customers have confidence in the agency banking and be more inclined to open bank accounts with the agents. 1 per cent increase in the internal control mechanisms will lead to 4.6 per cent increase in the number of accounts opened by the agents.

Furthermore, the results of the model have shown that the cost of implementing agency banking is found to be positively related with the number of accounts opened by the agents. 1 per cent increase in the cost of implementing agency banking by the banks will increase the number of accounts opened by the agents by 4.6 per cent. This implies that if banks increase the procurement of POS and spend more money on financial literacy awareness, more people will know about agency banking and will open more bank accounts with the agents.

Finally, the cost of using financial services with the agents showed an inverse relationship with the number of accounts opened by the agents. 1 per cent increase in the amount charged by the agents for delivering financial

services will reduce the number of accounts to be opened by the agents by 2.5 per cent. This implies that if agents charge higher for financial services, customers will not be willing to operate with them, hence a reduction in the number of accounts to be opened.

To validate the goodness of fit of model 2, the Chi-square test was estimated in order to test the goodness-of-fit of the model. It determines the likelihood that the difference between the population covariance matrix and model implied covariance are zero. Thus, a SEM model is considered a good fit if the value of the Chi-square test is significant (Niels, 2008). In the estimated SEM model 2, Chi2 (50) = 0 and Prob = 1.000. Therefore, P > Chi2. This implies an insignificant Chi-square statistic, hence, the model is adjudged to have goodness of fit.

Secondly, the population error and Baseline comparism were estimated. The decision rule is that when evaluating the fit statistic, the CFI values and TLI values of ≥ 0.90 and the RMSEA value of < 0.05 are considered adequate. In the estimated SEM 2, the RMSEA has a value of 0.000 which is less than 0.05 and CFI and TLI values of 1.000 and 1.911, respectively are greater than 0.90. This suggests that the residual values are low; implying the amount of variance not accounted by the model. These statistics have again validated the fitness of the estimated SEM model.

The coefficient of determination of the model has a value of 0.461 which suggests that variation in the number of bank accounts opened by the agents as a proxy of financial inclusion is 46.1 per cent explained by the explanatory variables included in the model.

5. Conclusion and Policy Recommendations

On the basis of the findings of this study, it is concluded that agency banking activities of First Bank Ltd have immensely enhanced financial inclusion and economic activities in Benue State. This is particularly so because, the findings of the study have revealed that agency banking activities of First Bank Ltd have penetrated all the 23 local government areas of the State which hitherto do not have the presence of banking services. Before the advent of agency banking, only eleven (11) LGAs representing 47.83 per cent had access to formal financial services, but with the advent of agency banking activities of First Bank Ltd, the remaining 52.17 per cent are now captured in the banking net. This means these group of people can now have access to array of formal financial services. With the agency banking activities of First Bank Ltd in Benue State, the rural populace of the state now has access to formal banking services such as cash deposits, cash transfers, cash withdrawals, payment of utility bills, opening of bank accounts, Bank Verification Number (BVN) enrollments, and purchase of airtime at affordable costs and within relative shorter time frame.

Finally, it is concluded that agency banking activities of First Bank Ltd have significantly impacted on financial inclusion in the State in terms of the volume of financial transactions and the number of bank accounts opened. However, it was concluded that problems such as cash shortages, security challenges, lack of literacy, network failures among others are seriously militating against the smooth operations of agency banking in the State.

Arising from the findings and conclusion of this study, the following policy recommendations are made:

First, more commercial banks should be encouraged to recruit agents in the State in order to have wider geographical coverage of agency banking in the State considering the fact that the State is highly unbanked.

Second, banks should intensify efforts in the direction of financial literacy awareness creation. In this regard, banks can partner with the traditional rulers and religious leaders to educate the people about the potency of agency banking. With the traditional rulers and religious leaders, advocacy can be made that agency banking is a secure and an innovative as well as modern banking system so as to build peoples' confidence in agency banking.

Third, government at all levels should ensure that security operatives are located around the operation environments of the agents, as this will encourage the smooth operations of the agents in the country.

Fourth, government should partner with private sector to provide national carrier communication network, that is, broad band network system to surmount the challenge of incessant network failure in the country. This will assist the agents to overcome the challenge of network failures during their operations.

Also, the agents should be encouraged by commercial banks to operate within the acceptable guidelines by rendering Suspicious Transition Report (STR) to commercial banks on weekly basis. This will help address the issues of security and money laundering.

Finally, he agents should be encouraged by commercial banks to form clusters among themselves to assist and educate each other in handling challenges of cash illiquidity.

References

Achugamonu, B., Uzoma, T., Ikpefan, J. N., Ochei, A., Olurinola, I. O., & Okorie,U. E. (2016). Agent banking and financial inclusion: Nigerian experience. *Proceedings of the 28th international business information management association conference, 9-10*, November, 2016, Seville, Spain.

Afande, F. O., & Mbugua, S. W. (2015). Role of agent banking services in promoting of financial inclusion in Nyeri Town, Kenya. *Research Journal of Finance and Accounting, 6*(3), 148-173.

Akighir, D. T., Tyagher, T. J., & Ateata, A. (2020). Agent banking and poverty reduction in Benue State, Nigeria. *Advances in Social Sciences Research Journal, 7*(5), 213-229. https://doi.org/10.14738/assrj.75.8058

Anyanzwa, J. (2012). *Branchless banking runs into headwinds.* Retrieved from http://www.enwipedia.org/wiki/banking

Central Bank of Nigeria (CBN). (2012). *National financial inclusion strategy: A summary report.* A publication of CBN, Abuja.

Central Bank of Nigeria (CBN). (2017). *Guidelines for the regulation of agent banking relationships in Nigeria*. Publication of the CBN, Abuja.

Cheston, S. (2016). *The business of financial inclusion: Insights from banks in emerging markets*. Institute of International Finance (IIF), Washington, D.C. USA.

Demirguic-Kunt, A., & Klapper, L. (2012). Financial inclusion in Africa: An overview. *Policy research working paper*. World Bank, Washington, D.C. https://doi.org/10.1596/1813-9450-6088

Green, J. (2012). *Principal-Agent relationship theory*. Demand media, Inc

Jhingan, M.L. (2008). *Microeconomic theory* (6th ed.). Delhi. Vrinda Publication (P) Ltd.

Lotto, J. (2016). The role of agency banking in promoting financial inclusion: Descriptive analytical evidence from Tanzania. *European Journal of Business and Management, 8*(33), 231-240.

Musau, S. (2013). *Analysis of the utilization of agency banking on performance of selected banks in Nairobi county, Kenya*. Post graduate dissertation submitted to the Kenyatta University.

Musaya, I. M., & Kerongo, F. (2015). The effects of agency banking on access to financial services: Survey of commercial banks in Kilindini district. *International Journal of Management Research and Business Strategy, 4*(3), 103-118.

Mwenda, J. M., & Ngahu, S. (2016). The role of agency banking in the growth of banking sector in Kenya: A survey of bank agents in Nairobi county, Kenya. *International Journal of Economics, Commerce and Management, 5*(4), 1-21.

Ogbebor, T. O. (2018). Enhancing financial inclusion in Nigeria through agent banking: Prospects, benefits and challenges. *African Journal of Microfinance and Enterprise Development, 4*(2), 1-22.

Stein, C. M., Morris, N. J., & Nock, N. L. (2012). Structural equation modeling. In C. E. Robert (Ed.), *Statistical human gentice: Methods and protocol*. Springer science + Business media. https://doi.org/10.1007/978-1-61779-555-8_27

The Bangladesh Institute of Bank Management (BIBM). (2017). Agent banking: Effectiveness in financial inclusion. *A Discussion Paper* No. 10, BIBM Dhaka, Bangladesh.

Tser, A. (2013). *The dynamics of Benue state population 1963-2016*. Makurdi, Micro Teacher and Associates.

Ulokoaga, D. A. (2020). Agent banking and financial inclusion: challenges and prospects. *IIARD International Journal of Banking and Finance Research, 6*(1), 32-41

Walker, M. (2003). Principal-Agent theory: Where some agents are trustworthy. *Accounting and Finance Working Paper No. 2.* Manchester Business School, Manchester University.

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