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Agency Banking, Mobile Money Operations and Financial Inclusion in Jos Town, Nigeria

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Abstract

This study aims to investigate the relationship between agent banking, mobile money operators and financial inclusion in Nigeria. For the purpose of this study, a descriptive research design was used. The study population were operators of agency banking and mobile money services located in Jos town and environs. Primary data was gathered through structured questionnaires. Test-retest technique was employed to determine the internal consistency of the instruments by computing Cronbach's alpha. A Cronbach's alpha of 0.619 and above was taken as acceptable reliability. Linear regression was used to analyse the data to determine, if agency banking, mobile money operations had a significant relationship with financial inclusion and to indicate the relative strength of the independent variables on the dependent variables. Findings revealed that, that cybercrime and reduction of cost of banking services had a statistically insignificant and negative relationship with financial inclusion, while geographical coverage and illiquidity had a positive, but insignificant relationship with financial inclusion. This study concludes, that agent banking and mobile money is gaining wide acceptance, however this has not engendered, more financial inclusion. This study recommends, that the government should create an appropriate regulatory

context in which innovation can thrive. In addition, more coordination is required between banks and operators, in terms of Risk, Training, deployment of technology, cash movement and profit sharing arrangements.

Introduction

Agency banking is gaining importance, as an important business model by which financial institutions bring their services closer to the people at the grass root and in far-flung remote rural areas (Chude & Chude, 2014). These banking/financial products and services may not necessary be, bespoke, best in the class of financial solutions, as rendered to urbane and sophisticated clientele in urban areas. Apart from a desire to grow earnings and market share, financial inclusion is an important objective for the introduction of agency banking.

Financial inclusion is one of the cardinal planks of World Bank millennium development and sustainability goals. (World Bank, 2017). In Nigeria, the National Financial Inclusion Strategy (NFIS) was introduced in 2012 as a working document to promote and serve as a key driver in achieving financial inclusion. A revised National Financial Inclusion Strategy was reintroduced in 2018.

According to the Central Bank of Nigeria, Financial Inclusion must meet the following parameters: (a) Ease of access to financial products and services (Financial products must be within easy reach of all segments of the population and should not have arduous requirements). (b) Use of a broad range of financial products and services (Financial inclusion not only implies ready access, but the usage of a full spectrum of financial services including, but not limited to payments, savings, credit, insurance, and pension products). (c) Financial products designed according to user's need (Financial products must be designed to meet the needs of clients and should consider income levels, as well as access to distribution channels). (d) Affordable (Financial services should be affordable, even for low-income groups) (NFIS, 2018)

The Strategy articulated the demand-side, supply-side and regulatory barriers to financial inclusion, identified areas of focus, set targets, determined key performance indicators (KPIs) and established the implementation structure. The NFIS was built on four strategic areas of agency banking, mobile banking/mobile payments, linkage models and client empowerment. Four priority areas were identified for guideline and framework development namely; Tiered Know-Your Customer (T-KYC) Regulations,

Agent Banking Regulations, National financial Literacy Strategy and Consumer Protection. (NFIS, 2018)

In 2016, a total of 40.1 million adult Nigerians (41.6% of the adult population) were financially excluded in 2016. Further analysis has revealed that 55.1% of the excluded population were women, 61.4% of the excluded population were within the ages of 18 and 35 years, 34.0% had no formal education, and 80.4% resided in rural areas. A further analysis revealed that 46.5% of the females, 52.5% of those in rural areas and 53.5% of youth aged 18 to 25, 70% of those from the North West, Nigeria and 62% of those from the North East, Nigeria were excluded in 2016. Micro, Small and Medium Enterprises (MSMEs) were also peculiarly excluded from financial services. The stated goal of NFIS is to decrease the number of Nigerians without access to financial services from 46.3% to 20% by 2020 (NFIS, 2018)

The fundamentals of financial inclusion is the stated and actionable goal of giving access to hundreds of millions people across the globe, who are excluded from gaining access to these financial services. In addition, it also promotes financial literacy, credit creation, capital accumulation, wealth creation, and entrepreneurship and employment opportunities (Ivatury, Gautam and Pickens, 2006).

The Central Bank of Nigeria (2013) defines Agent Banking as the provision of financial services to a third party (agent) on behalf of a licensed deposit taking financial institution and mobile banking operator (principal). It is also meant to promote financial inclusion. The term 'agent banking' can as well be defined as the process whereby an agent or operator, acts in some capacity on behalf of a financial institution. (Chude & Chude, 2014).

Agent banking also help banks to divert existing customers from crowded branches thus providing a "complementary" and often more convenient channel of delivering banking products and services to under-banked and unbanked segments of the population. Other financial institutions especially in developing economies use agency banking to reach an "additional" client segment or geography underserviced by financial or banking coverage. (Afande & Mbugua, 2015)

Mobile money is a secure payment services that enables you to pay for goods and services, receive money, transfer money, buy airtime using your mobile phone, even without the use of the internet. Alternatively, it is called USSD Banking. All that is needed is to dial a code. Mobile money transform a mobile phone into an e-wallet. Mobile money operations is subdivided into three models: A bank led model, which is centres around a bank seeking to deliver payment services leveraging on mobile payment systems; A non-bank model that gives the opportunity of payments systems to licenced corporate organisations; and an operator branded model that is driven by telecommunication companies.

According to Ivantury et al (2006), they opined that, agent banking and mobile banking operations could be of benefit to the clients in the following ways; lower transaction cost (closer to clients home), customers can therefore make withdrawals or deposit little amounts without incurring extra costs like transport to a bank's branch, longer hours of operations since this businesses operate for longer hours than banks, shorter lines than in branches, more accessible for illiterates and the very poor who might feel intimidated in branches. Therefore customers save on time that they would otherwise have had to make a trip to a bank's branch, and the time they have to wait in line to be served.

There is also ease of doing business, flexibility, employment opportunities, training and mentorship. Also, low–income clients often feel more comfortable carrying out transactions at their local agent, as opposed to walking into a physical bank's branch. In addition, agent bankers and mobile banking operators, can rely on existing retail banking infrastructure, which translate to lower set up and running costs.

Globally, a trend analysis of usage of agency banking and mobile banking operations, has shown significant strides. According to Afande and Mbugua (2015) in Kenya, the combined total transactions through mobile network operators (MNO) amounted to Kshs 2.45 billion (US $ 24 million) per day (CBK, 2011).

In Nigeria, the Central Bank of Nigeria (CBN) had commenced moves to open up financial services to non-core licensed banking operators. In addition, guidelines for the regulation of agent banking and mobile banking operators, were issued by the apex bank and regulator (CBN, 2013). The guidelines provides for categorization based on an agent's banking data base which is subdivided into super-agent, sole agent and sub agent. Financial services are provided through channels such as small kiosk/shops, petrol stations, pharmacies and other retail outlets. Furthermore, the guideline allows the operators to offer the following services: cash deposits and withdrawals, transfers, bills collection and payment, balance inquiry, account opening and documentation (Nwankwo and Nwankwo, 2014)

A study of trends in South American countries of Brazil, Peru and Colombia indicates a slow implementation of agent banking during the first two years of introduction, followed by an increase in the third or fourth year (Flaming, McKay & Pickens, 2011). However, data after Mexico's first year of allowing agent banking leads to the prediction that there will be a rapid increase in banking agents in the initiative's second year, one that is comparable to increases in Colombia's fourth year and Peru's sixth (Gracias, 2010). Mexico's new regulations to allow for more types of financial institutions to operate through bank agents and the opening of savings accounts will have a significant impact on financial inclusion and place Mexico among the leaders in agent banking in Latin America (Celina, 2012).

Furthermore, CGAP (2010) reported that Brazil's success using agent banking and mobile money operators to expand access to financial services is a result of many years of experience, evolving from more restricted possibilities to less stringent licensing conditions, without loosening the monitoring capacity of the supervision authority.

According to Afande & Mbugua (2015) in Brazil in 2008, agent banking and mobile money operators transacted 75% of the volume (agents made 1.6 billion transactions) and 70% of the value (agents transacted a total of US $105 billion) of total bill payments. Again in Brazil, agent banking and mobile banking operators transacted more deposits and withdrawals as a percentage of total transactions (38%) than their urban counterparts who average about 8%. Also in Brazil, although permitted to offer several types of services, less than 30% of agents actually handle bank accounts. Most specialize in receiving bill payments, which account for approximately 75% of all agency transactions, withdrawals and deposits account for 12.6% and are nearly equally divided into savings and current accounts. Only 0.16% of transactions are account opening and 7.3% are government transfers. In Peru, agents carry out approximately 3-8 million transactions per month. Also in Peru in 2010, less than 50% of the total financial system transactions were conducted through traditional bank branches; ATMS and POS terminals accounted for 36% of total transactions (CGAP, 2010).

Furthermore, Afande & Mbugua (2015) opined that in Colombia from August 2010 to July 2011, collections of utility bill payments through agency banking made up the majority of transactions averaging $1.8 million in July 2011, followed by mandatory payments, such as loan repayment; and official government payments, such as tax accounting for over $800,000 in July 2011. Although there were reportedly more withdrawals than deposits, the number of these two transaction types were typically and consistently close. Yet, the number of credit applications, money transfer and opening of savings accounts were negligible.

In India, an average of 8.4% deposits and 3.1% withdrawals were carried out by individuals through FINO (a technology firm and one of the first pioneers of agency banking in India) agents each day in 2010. With 10,000 agents Nationwide, this translates to approximately 84000 deposit and 31800 withdrawals each day. With an average deposit size of USD 3.5 and withdrawals size of USD 7.39 per agency, this translates to USD 301,000 worth of deposits and USD 221,000 of withdrawals processed each day (CGAP, 2010).

Statement of the Problem

Empirical evidence as to whether, agent banking as a financial inclusion model has worked for banks is limited. This effectively creates a knowledge gap regarding

effectiveness of agency banking as a vehicle to achieve financial inclusion (Ndegwa, 2017). This has led to many researchers questioning if agency banking leads to more financial inclusion (Betram, Nwankwo & Onwuka, 2016)

It is important to identify the relationship between agency banking and financial inclusion on one hand and cost reduction of financial/banking services on the other hand. It is common knowledge, that reaching the unbanked population in far-flung towns and rural areas is prohibitively expensive for financial institutions since transaction numbers and volumes do not cover the cost of setting up a physical branch New challenges include claims by operators for the same labour rights as banking employees and discussions about operator's security requirements. These issues will require a coordinated approach, involving different authorities. In addition, potential disagreements over profit sharing arrangements between banks and operators of agency banking will arise.

In addition, possible lack of coordination among different stakeholders, such as financial system regulators, financial institutions and operators, who ordinarily should work in synergy could arise.

It is against this background, that this study sought to evaluate the effectiveness of agency banking as a financial inclusion strategy.

Objectives of the study

1. To evaluate the extent to which geographical coverage affects agency banking as financial inclusion strategy.
2. To determine the extent to which liquidity affects agency banking as a financial inclusion strategy.
3. To examine the extent to which agency banking has reduced the cost of financial/banking services offered by banks.
4. To ascertain the extent to which cybercrime associated with agency banking affects financial inclusion.

Hypothesis

1. Lack of geographical coverage has no significant positive effect on agency banking as a financial inclusion strategy.
2. Illiquidity has no significant positive effect on agency banking as a financial inclusion strategy
3. The introduction of agency banking has not lead to a reduction in the cost of financial/banking services offered by banks.
4. Cybercrime associated with agency banking has no significant positive effect on Financial Inclusion.

Literature Review

Theoretical Framework

Agency Theory

Agency theory has been the subject of extensive research since its introduction in modern form by Jensen and Meckling (1976). The generality of the theory of Agency appears unquestionable and it has been widely adopted. According to Nurcan (2005) as cited by Ndegwa (2017), the model effectively predicts specific marvels under scrutiny. An agency relationship arises when at least one principals draw in someone else as their operator to play out an administration for their benefit. It's expected that the relationship will prompt an effective division of work. The goal being to gain an advantage or opportunity. In addition, it leverages on strength. Execution of this goal brings about the designation of some basic leadership and technical expertise to the operator. Agency Theory is relevant to this study, because it appreciates the role of the agent in achieving a desired goal. According to the theory, the delegation of responsibility by the principal and the resulting division of labour are helpful in promoting an efficient and productive economy. The delegation of responsibility in the context of this study is the outreach of financial services from the banking halls to where people live and work ensuring rise in financial inclusion.

Diffusion of Innovation Theory

Diffusion of Innovation (DOI) Theory, originally conceptualised in 1962 by Everett Rogers is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system (Rogers, 2003). The end result of this diffusion is that individuals, as a component of a social framework, receive another thought, conduct, or item. Appropriation implies that a man accomplishes something uniquely in contrast to what they had beforehand. The way to appropriation is that the individual must see the thought, conduct, or item as new or imaginative. It is through this that dissemination is conceivable

There are five main factors that influence adoption of an innovation, and each of these factors is at play to a different extent in the five adopter categories:

Relative Advantage - The degree to which an innovation is seen as better than the idea, program, or product it replaces.

Compatibility - How consistent the innovation is with the values, experiences, and needs of the potential adopters.

Complexity - How difficult the innovation is to understand and/or use.

Triability - The extent to which the innovation can be tested or experimented with before a commitment to adopt is made.

Observability - The extent to which the innovation provides tangible results.
Rogers' diffusion of innovations theory is appropriate in evaluating the effectiveness of agency banking as a financial inclusion strategy in commercial banks. This is because agency banking can be viewed as an innovation in itself and Rogers' diffusion of innovations attempts to explain why an innovation may be successful or not, in this case, in improving financial inclusion (Carter, 1998).

Technological Acceptance Model

Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology that will encourage economic growth (Davis, 1989). The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. TAM has had two major upgrades since it was first introduced. The first being TAM 2 (Venkatesh &Davis, 2000; Venkatesh, 2000). The second is the unified theory of acceptance and use of technology (Venkatesh et al, 2003). The third version is within the use of e-commerce, combined with the effects of trust and perceived risk on system use (Venkatesh & Bala, 2008).

Empirical Review

In Nigeria, Chude and Chude (2014) studied the implication of agent banking on the profitability of Nigerian commercial banks. The study made use of descriptive survey in carrying out the research and content analysis in analysing the work. Findings revealed that agent banking has proved to have essential roles to play in improving customer's satisfaction and bank profitability.

Afande and Mbugua (2015) in Kenya studied the extent to which banks have been able to partner with agents, commercial entities whose primary objective and business is any service other than the provision of financial services. The study focused on selected commercial banks in Nyeri County, Kenya and was completed in a period of three months. Data was collected by use of questionnaires, which were administered to bank branch managers and appointed agents. Findings revealed that greater geographical coverage brought about by agent banking is the strongest predictor of financial inclusion. Lack of liquidity and security concerns were found to be low.

Ndegwa (2017) in Kenya studied the effectiveness of agency banking as a financial inclusion strategy. The study adopted a cross-sectional survey design. The study targeted 38 administration managers and supervisors of the commercial banks in Kiambu which had adopted the agency banking model. Data was analysed using descriptive (frequency distribution and percentages) and inferential statistics

(Regression). The study concluded that geographical coverage is the most important benefit and therefore the most significant driver of financial inclusion

Gardeva and Rhynea (2011), opines in a survey report on opportunities and obstacles to financial inclusion observes that, product cost-structures and branching costs were ranked 7th and 12th respectively viewed as significant obstacles to financial inclusion, especially by providers, high branching costs in rural areas are associated with poor physical infrastructure – roads, electricity, etc. – that branchless banking is able to leapfrog. Musau (2013) observed that absence of money at money indicates does not show up be a far reaching issue as of now, as per her in-nation considers; it creates the impression that low-pay customers might endure periodic liquidity setbacks in return for coherence of administration over the long haul and the comfort of a broad system

Collins et al. (2009) showed how people living in poverty struggle to manage their financial lives, given the lack of services suitable to their tiny, highly viable and uncertain income. Lehman (2010), opined, that agents will not provide quality service to customers without ongoing, on-site and in-store supervision to ensure the agents are liquid, consistently branded, and following the prescribed business processes. Stephens and Kevin (1998) suggests that the simplest measure to reduce cash accumulation and its related risks may be to require providers to set daily and monthly transaction limits for each agent and client.

Regulators, by requiring every agent transaction to be made against the agent's account at the contracting bank, does not only reduce the risk of third-party robbery, but eliminates the risk of agents misappropriating the accumulated cash, since the cash is in fact the agent's own.

Tarazi (2010) observed that where damages are not easily quantified and agency banking operators behaviours not easily monitored – resulting in an unknown risk that principal service providers are not well equipped to mitigate, for example, violations of data privacy. In this case, damages could be indirect and punitive – and therefore quite high. And yet, a principal service provider is ill equipped to stop such agent's behaviour.

Methodology

Introduction

This explains how the study was conducted. It highlights the type of research design to be used, the study population, the sample size, data collection instruments, model specification and procedure for data analysis**.**

Research Design

Research design is the general plan of how the researcher will go about answering research questions. It specifies the sources from which the researcher intends to collect

data, measurement and analysis of data, (Saunders, Lewis and Thornhill, 2009). For the purpose of this study a descriptive research design was used.

Source of Data

Primary data was sourced through a field survey by the use of a structured questionnaire. The study used structured questionnaires to collect data from the field. The study opted for the questionnaire because the responses are gathered in a standardized way to gather reliable and first-hand information about the phenomenon under study

Population and Sample Size

The target population for the study were operators of agency banking and mobile money services situated with Jos Town and environment. The population was deemed the appropriate study population because they are fit for purpose, to elicit the necessary valid responses of the objectives of the study. Data from the Central banks of Nigeria and Deposit Money Banks (DMBs) located within Jos town, estimates that there are 384 operators of agency banking. A sample size of 96 was statistically determined as the sample size which represents one in every four operators of agency banking and mobile money operations within Jos and environs.

Reliability Test

The questionnaires were subjected to validity and reliability test to determine the strength of measurement of the instruments. Content validity was used in this study; content validity is the degree to which the instrument measures what the test is designed to measure. This is important in the establishment of accuracy and truthfulness of the research. In order to ascertain face validity, the instruments were designed and handed to the moderators for review. Test-retest technique was employed to determine the internal consistency of the instruments by computing Cronbach's alpha. A Cronbach's alpha of 0.619 and above was taken as acceptable reliability according to Cronbach (1957).

Method of Data Analysis

Linear regression technique was used to help indicate if agency banking had a significant relationship with financial inclusion and to indicate the relative strength of different independent variables' on the dependent variable. This estimation technique was found suitable for the analysis.

Empirical Model

A Regression model was adopted to test the relationships between the study variables. The model for the analysis is shown below:

Y = X + X1 LQ + X2 GC + X3 CS +X4 SC + e
Where:
Y = Financial Inclusion
X = Constant X1, X2, X3 & X4 = Co-efficient
LQ = Availability of liquidity
GC = Geographical coverage
CS = Cost of services CC =
Cybercrime
e = residual error

Results and Discussion of Findings

Socio-economic differences in the Attributes of the Respondents

The socio-economic factors aspect is important in linking conflict to agent banking in Jos. Based on this, attributes such as sex, marital status, age, educational level, duration of business operation and the duration of been an agent were used to examine the responses of the respondents on agent banking/mobile money effect on financial inclusion in Jos town. The result of the socio-economic attributes of the respondents is presented in table 1 below.

TABLE 1: Socio-economic Attributes of Respondents

Attributes	Frequency	Percentage
Sex		
Male	69	71.9
Female	27	28.1
Total	96	100
Age		
18- 25	18	18.8
26 – 35	51	53.1
36 – 45	24	25.0
46 – 55	3	3.1
56 and above	0	0
Total	96	100
Marital Status		
Married	42	43.8
Single	45	46.9
Divorced	3	3.1
Widowed	5	5.2

Separated	1	1.0
Total	96	100
Level of Education		
Primary	0	0
Secondary	17	17.7
Diploma	30	31.3
First degree	31	32.3
Master's degree	12	12.5
Others	6	6.3
Total	96	100
Duration of Business Operation		
2 – 5 years	46	47.9
6 – 10 years	30	31.3
11 – 15 years	14	14.6
Above 15 years	3	3.1
Total	96	96.9
Missing system	3	3.1
Duration of been an agent		
Less than 1 year	25	29.2
1-3 years	45	46.9
3-6 years	18	18.8
Above 6 years	5	5.2
Total	**96**	**100**

Source: Field Survey, 2019

Table 1 showed that 69 and 27 were males and females, representing 71.9% and 28.1% respectively. This shows that more males are involved in agency banking than females. This could be due to the availability of males in the study areas where the questionnaire were issued. The responses of the respondents based on age as shown in the table indicated that 18 of the respondents fell within the age range of 18-25 representing 18.8%, 53.1% fell within the age range of 26-35, while those who fell within the age bracket of 36-45, 46-55 and above 55 years represented 25.0, 3.1 and zero respectively. Those who fell within the age bracket of 26-35 are considered more in agency banking than all other age range. The marital status of the agents considered indicated that 42 of the respondents were married, 45 were single, 3 were divorced, 5 were widowed and 1 was separated. This represents 43.8%, 46.9%, 3.1%, 5.2% and 1.0% respectively.

The level of education of the respondents indicated that none of the agents were primary school certificate holders, 17 were secondary school certificate holders, 30 were diploma certificate holders, 31 were degree holders, 12 were master's holders, while 6 of the respondents were holders of other forms of certificates. This represents 0%, 17.1%, 31.3%, 32.3%, 12.5% and 6.3%. Although, agency banking have been in existence over some years in Nigeria, 46, 30, 14 and 3 of the respondents are said to have been into agency banking between 2-5years, 6-10years, 11-15years and above 15 years of operation. This represents 47.9%, 31.3%, 14.6%, and 3.1% respectively.
The low percentage of the respondents above 15 years indicated the low patronage of agency banking services available in Jos. However, 25 respondents are said to be bank agents for less than one year, 45 of the respondents, 18 of the respondents and 5 of the respondents have been agents between 1 and 3 years, 3 and 6 years and above 6 years. The figures represent 29.2%, 46.9%, 18.8% and 5.2% respectively.

Descriptive Statistics of Dependent and Explanatory Variables

The study which examines the effects of agent banking on financial inclusion has FI (financial inclusion) as the independent variable while CC (cybercrime), CO (cost), IN (inliquidity) and GC (geographical coverage) as explanatory variables. Relevant statistics of the dependent and explanatory variables of the sampled agents are summarized in Table 2.

Table 2. Descriptive of Dependent and Explanatory Variables

	N	Minimum	Maximum	Mean	Std. Deviation
FI	96	1.00	4.50	2.0924	.63731
CC	96	1.00	4.25	2.4906	.65748
CO	96	1.00	4.25	3.0474	.67860
IN	96	1.00	4.00	2.4395	.60734
GC	96	1.00	2.50	1.9070	.36645

The total observations of the dependent and explanatory variables are 96. The table shows the mean, standard deviation, minimum and maximum values for the dependent and independent variables. The mean financial inclusion is 2.1 percent with 0.6 percent standard deviation. This means that, on an average, more than 2 percent of the people are financially included through agency banking. This highlights the proportion of people who are financially included in Jos through the services of agent banking. Financial inclusion for the sample period ranges between 1 percent and 4.5 percent.

The result further revealed that the average cybercrime rate of the sample agents used in the study is more than 2 percent with a standard deviation of 0.66 percent. The sample agents' cybercrime rate ranges between 1and 4 percent. The cost of banking through agency banking averaged 3 percent with a standard deviation of 0.68 percent. The cost of the sampled agents ranges between 1 percent and 4.25 percent. This demonstrates to a great extent the variation in the number of people who get access to financial institutions in Jos. As for inliquidity, it showed a mean of 2.44 percent and a standard deviation of 0.61 percent.

This indicates that there is high variation in the level of liquidity among banking agents in Jos; for the sample, liquidity ranges between 1.00 percent and 4.00 percent. Finally, geographical coverage of banking agents ranges between 1.00 to 2.50 percent. This has a mean average of 1.91 percent with a standard deviation of 0.37 percent. This means that the coverage of such services do no differ significantly among banking agents in Jos.

Regression Analysis

Linear regression was used to help indicate if agency banking had a significant relationship with financial inclusion and to indicate the relative strength of different independent variables' on the dependent variable. The model summary for the regression analysis is presented in table 3.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.285	.081	.040	.62755	1.841

Source: **Field Survey data, 2019 and Author's Computation Using SPSS 3.0**

The R value 0.285 indicates that there is a weak positive correlation between agency banking and financial inclusion in Jos. This means that financial inclusion is weakly associated with agency banking. The R-square is 0.081, meaning that cybercrime rate; costs of agent banking, inliquidity and geographical coverage can explain 8.1% of financial inclusion in commercial banks in Jos. This means that about 8.1% variation in financial inclusion is explained by the independent variables. By implication, 0.919 variation in the dependent variable is unaccounted for in the model. Thus, 91.9% variation in financial inclusion is explained by the stochastic variable. The F-statistic result is presented in table 4.

Table 4. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.130	4	.783	1.987	.103
	Residual	35.444	90	.394		
	Total	38.574	94			

Source: **Field Survey data, 2019 and Author's Computation Using SPSS 23.0**

Findings in Table 4 showed the F statistic of the result. The F value indicates whether the set of independent variables as a whole contribute to the variance in the dependent variable. An F value of 1.987 was found. Findings in Table 3 further showed that the F value was insignificant (p=0.103) at 95% confidence level. This means that agency banking is insignificant in predicting financial inclusion in Jos. This means that cost of agency banking, cybercrime, inliquidity and geographical coverage do not jointly explain financial inclusion in Jos. By implication, other factors plays important role in the determination of financial inclusion than the explanatory factors in the model. The result of the coefficients of the explanatory variables is presented in table 5.

Table 5. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.432	.407		5.971	.000
	CC	-.228	.124	-.235	-1.838	.069
	CO	-.115	.110	-.122	-1.046	.298
	IN	.001	.134	.001	.011	.992
	GC	.302	.194	.172	1.553	.124

Source: **Field Survey data, 2019 and Author's Computation Using SPSS 23.0**

Table 5 shows the contribution of each variable in explaining financial inclusion as shown by unstandardized beta values which assess the contribution of each variable towards the prediction of the dependent variable. The coefficient of the constant is 2.432 and significant given the probability value of zero. This means that financial inclusion is positive without the interplay of the explanatory variables in the model.

However, Cybercrime has a negative coefficient of 0.228. This conformed to apriori expectation. Though, the coefficient is negative and explained 22.8% contribution to financial inclusion, the variable remained insignificant at 5% level of significance (0.05 less than 0.069). This means that 100% increase in cybercrime rate will amount to 22.8% reduction in financial inclusion in Jos through agency banking.

On the other hand, cost of agent banking also conformed to apriori expectation of a negative value. This is depicted by the coefficient of -0.115. The probability value of 0.298 is greater than 0.05 level of significance. This means that the variable contributed negatively to the tune of 11.5% to financial inclusion in Jos. A 100 percent increase in the cost of agent banking will lead to 11.5% reduction in financial inclusion in Jos town.

Illiquidity of agency banking operators is statistically insignificant given the probability of 0.992 which is greater than 0.05 level of significance. The coefficient of illiquidity is 0.001. This means that illiquidity only contributes to financial inclusion to the tune of 0.1%. By implication, a 100% increase in illiquidity of operator will lead to 0.1% increase in financial inclusion in Jos.

Finally, geographical coverage has a coefficient of 0.302 with a probability value of 0.124. The variable is statistically insignificant in the explanation of financial inclusion. This means that a unit percent change in geographical coverage of agent banking would lead to 30.2% change in the rate of financial inclusion in Jos. The more agency banking covers a wider geographical location in Jos, the more people get financially included in Jos. According to the findings geographical coverage is the most affecting. The findings are consistent with Kitaka (2001) who found that banking agencies help financial institutions to divert existing customers from crowded branches providing a "complementary" often more convenient channel for financial inclusion.

Discussion of Findings

Agency banking has been recognized as one of the strategy used in developed and underdeveloped world for financial inclusion. The underdeveloped nature of financial institutions in developing countries of the world has given room for exclusion of many people. It is on the basis of this that the study investigated the effect of agency banking on financial inclusion in Jos.

The result showed that 71.9% respondents were males and 28.1% females. This shows that more males are involved in agency banking than females. This could be due to the quest for financial inclusion which more men saw as an opportunity for ends needs. The responses of the respondents based on age also indicated that 18.8% of the respondents fell within the age distribution 18-25 years, 53.1% fell within the age

range of 26-35, while those who fell within the age bracket of 36-45, 46-55 and above 55 years represented 25.0%, 3.1% and zero respectively. Those who fell within the age bracket of 26-35 are considered more in agency banking than all other age range. This could be attributed to the rate of unemployment and poverty in Nigeria which has made so many youth's device means of livelihood for their survival.

The level of education of the respondents indicated 0%, 17.1%, 31.3%, 32.3%, 12.5% and 6.3% of the respondents are holders of primary school, secondary, diploma, degree, masters and other certificates. It was observed that most of the agents are holders of first degree who understood the importance of financial inclusion in any economy of the world and hence, taking the opportunity in the growing demand for financial inclusion among people in Jos. Most of agents have been in operation for between 2-5 years representing 47.9% of the respondents. This high percentage of the respondents into this category could be attributed to the growing need for financial inclusion in Jos and Nigeria as a whole and hence, the availability of more bank agents.

The study also revealed that cybercrime was statistically insignificant and negative. This is in line with the study of Afande and Mbugua (2015). This could be attributable to the rate of cybercrimes among agent banking in Jos and Nigeria at large. This has led to loss of liquid resources of customers and bank agents thereby, discouraging financial inclusion in Jos town and environs. Also, lack of developed security system has further marred the development of financial institutions and hence, financial inclusion in Nigeria.

Moreso, the cost of agent banking revealed a negative and insignificant relationship with financial inclusion in Jos town and environs. This finding is at variance with Mwende, Bichanga and Mosoti, (2015). Although, some customers consider agency banking as more convenient, most of them see it as exploitative in nature. The high cost of agency banking in Nigeria has reduced the patronage rate of customers in Jos town and environs. This could be attributed to the poor nature of customers in Jos which discourages customers from savings using banking agents. As a result of this, the rate of resource mobilization is low due to the high charges which accompanied agency banking and hence, slowing the mobilization of resources for investment in Jos.

The study found that illiquidity and geographical coverage were positive and statistically insignificant. The positive coefficient of the variables denotes an increase in financial inclusion resulting from illiquidity and geographical coverage increase. This is attributable to the convenience provided by agency banking which saves time from queuing at ATMs or in banking halls.

Majority (80%) of the participants agreed that agent banking has reduced overcrowding in banking halls (Ndegwa, 2017). The findings are in agreement with

Kitaka (2001), Muriungi Ivatury (2006), Timothy (2012) and Ndegwa (2017). The study also found that illiquidity was statistically insignificant and positively signed. This is attributable to the fact that agency banking and mobile money operators, were located in town where banks and other financial institutions are established thereby making liquidity shortage a non-issue as customers can easily access financial services from nearby financial institutions.

However, illiquidity among agency banking operators in Jos area, may not have been an issue as operators, always make available cash at the point of need for customers due to their proximity to financial institutions in Jos area. This is in agreement with the findings of Achugamonu, Taiwo, Ikpefan, Olurinola and Okorie (2016). Based on the findings of the study, agency banking has no significant effect on financial inclusion in Jos, hence leading to acceptance of the null hypothesis.

Conclusion and Recommendation

Conclusion

In conclusion, this study sought to understand the relationship between agent banking, mobile money operations and financial inclusion. This study notes that the concept of agent banking is gaining wide acceptance among the banking population because of ease of use, proximity and flexibility of the system, and has become a variable tool by financial institutions to decongest, overcrowded banking halls, cut cost of building physical branches, drive earnings and market share. In addition monetary and fiscal authorities, are embracing the concept of agent banking and mobile money, has a vehicle to achieve financial inclusion among the unbanked population, reduce rising unemployment and create wealth. This, study notes that in spite of the introduction of agent banking and mobile money, there has been no corresponding reduction in cost banking services offered by financial institution, rather a rising spike in obnoxious banking charges and fees. The study further notes that illiquidity and cybercrime will continue to be a major challenge faced by operators of agent banking.

Recommendations

Policy Recommendations for Agent Banking and Mobile Money Operations

1. The monetary and fiscal authorities should take note that, agency banking and mobile money are “green shoots” sectors that can generate massive employment for the huge numbers of unemployed graduates being churned out from the nation’s tertiary institutions. Data from the study survey support this assertion by the number of diploma, degree holders and master’s degree holders gradually embracing and seeking entrepreneurship in this this field.

2. Banks should adopt a risk based approach in partnership with operators of agency banking. The agency banking model should be incorporated into their larger enterprise risk management framework
3. As part of measures to improve effectiveness and efficiency, drive earnings and market share, Banks should encourage operators to take periodic trainings, organise workshops and take short courses to update the operator's knowledge base, build synergy between bank employees and operators.
5. In addition, more coordination is required between banks and operators, in terms of deployment of technology, cash movement and profit sharing arrangements.

Policy Recommendations for Financial Inclusion

1. An appropriate risk based regulatory level playing field that focuses on both activity and the actors. The regulation should prescribe what eligibility conditions a party needs to meet to provide a particular service, without closing off the sector from future innovations.
2. Ensuring that the same set of regulatory requirements and conditions apply to all potential providers of a given service, regardless of their background or type of operation.
3. Ensuring that the playing field is balanced across various objectives. For example, the set of licensing requirements should both maintain financial system sustainability and also create incentives to drive financial inclusion.
4. Actors should play in their areas of core strength (comparative advantage) to engender high impact. This has three specific implications. All actors should continuously apply a lens of inclusivity to their activities in order to achieve impact on particularly excluded groups such as women, micro, small and medium-sized enterprises (MSMEs) and people living in the most excluded regions (North East and North West).
6. The government should create an appropriate regulatory context in which innovation can thrive.
7. Public and philanthropic (local and international) investments should be tailored towards: (i) creating public goods; and (ii) overcoming obstacles that hinder business case for private sector actors.
8. The Financial Inclusion Secretariat should expand its scope of activities by partnering with academia, private sector, state and local governments and development partners in research, trainings, workshops and public sensitization and orientation
9. The CBN and NCC should go beyond the Memorandum of understanding (MoU) on payments systems signed jointly in 2018 and deploy a functional, flexible, easy

to use payment system that will help drive agency banking and mobile money operations.

10. Regulatory sandbox for FinTechs: The CBN/Nigerian Interbank Settlement System (NIBSS) should fast track the deployment of a Regulatory Sandbox that will allow fintechs to test solutions/products in a controlled environment.
11. Shared Agent Network Expansion Facility (SANEF) Initiative: The CBN, in collaboration with Deposit Money Banks (DMBs), Mobile Money Operators (MMOs) and Super-Agents should fast track and set achievable timelines and milestones in its objective of a network of 500,000 operators in agency banking and mobile money operations

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