INSECURITY OF CASH-LESS BANKING TRANSACTIONS: AN EMPIRICAL EVIDENCE FROM NIGERIAN BANKS

Amara Priscilia Ozoji, University of Nigeria Nsukka
Okoi Etim Iwara, University of Calabar
Charity Nkeiru Ezuwore-Obodoekwe, University of Nigeria Nsukka
Sunday J. Inyada, Nigerian Army University Biu Borno State
Beatrice O. Ezechukwu, Federal Polytechnic Oko
Terkura Fella Ayem-Fella, Nigerian Army University Biu Borno State
Chidimma Odilia Ezuma, University of Nigeria Nsukka
Lilian N. Ebisi, University of Nigeria Nsukka
Kemdi Lugard Okoroiwu, University of Nigeria Nsukka

ABSTRACT

This investigation primarily aimed at assessing cash-less banking operations since cash-less policy was introduced/implemented in Nigeria in the year 2012, with a view to determine the significance of its effect on insecurity of banking transactions in the economy. Ex-post facto research design and secondary sources of data collection were employed. The work studies the aggregate quarterly data (quarter 1-quarter 4, 2012 to quarter 1-quarter 4, 2019) of all the Deposit Money Banks operating in Nigeria as at 2012-2019 as contained in CBN statistics database and NDIC annual reports; summing up to 32 observations. Total quarterly volume of: automated teller machine transactions, point of sale terminals transactions, web transactions and mobile phone banking transaction were used as proxies for cash-less banking; while total quarterly: number of fraud and forgery cases in Nigeria's Deposit Money Banks, amount involved in the attempted/reported fraud and forgery incidences in Nigeria's DMBs and actual loss to fraud and forgery in Nigeria's Deposit Money Banks were employed as proxies for insecurity of banking transactions. The study employed descriptive statistics to give the description of individual research variables and the inferential statistics, multivariate regression techniques of model estimation (Error Correction Model estimation and short-run, Autoregressive Distributed Lag model estimation) for data analysis/test of hypotheses which were preceded by Augmented Dickey-Fuller Unit Root Test and co-integration test using Autoregressive Distributed Lag bound testing technique. Findings revealed that the introduction of cash-less banking in Nigeria has not significantly affected the increased number of fraud and forgery cases in Nigeria's Deposit Money Banks. It further disclosed that cash-less banking in Nigeria has significantly affected the increased amount involved in attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks. Finally, the results showed that the practice of cash-less banking in Nigeria has not significantly affected the actual loss to fraud and forgery in Nigerian Deposit Money Banks. The study concludes that the perception of most Nigerians that cash-less banking transactions are insecure is wrong; instead, cash-less banking is even more secure than the previously practiced cash-based banking system since the opportunity to actually commit the frauds (frauds reported as attempted amounts involved in fraud incidences) and inflict financial losses to banks and the victims was drastically minimized as revealed in the study's results; only that there is need for more improvement on the security measures of some cash-less banking channels like automated teller machines (ATM) and

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

internet. The study recommended that, Nigerian government should ensure the allocation of adequate funds for the establishment and equipping of special electronic fraud (cyber-crime) department within the policy force, and also training the Officers to serve under the department on the e-fraud policing. Banks' Customers should keep their online and ATM transaction credentials (user ID, password, token/PIN) confidential. Also, *Financial Institutions should ensure* continuous review and security upgrade of its electronic platforms and services.

Keywords: Cash-less Banking, Cash-less Policy, Banking Transactions Insecurity, Fraud, Forgery.

INTRODUCTION

In the year 2012, Nigeria witnessed the dawn of cash-less banking with the introduction of cash-less policy by the Central Bank of Nigeria (CBN), to minimize the level of raw cash in circulation across the country and curtail the increased cash-based banking system's cost of cash. The CBN cash-less policy effective from 1st January, 2012 required ₦500,000 and ₦3,000,000 daily cumulative limit for cash withdrawals and lodgements by individuals and corporate organizations respectively free of processing charges. The service fees of 3% and 5% will be levied on individuals and corporate bodies respectively for withdrawals above the daily limits. Lodgements above the threshold attract 2% and 3% service charges for individuals and corporate bodies respectively (CBN, 2011). Also, value for third party cheques above #150,000 shall be received through the clearing house as it shall not be eligible for encashment over the counter from 2012. Hence, Nigerian banks now shifted from cash-based to cash-less banking system by using major electronic channels like ATMs, mobile phones, point of sale (POS) terminals and internet (WEB). This does not imply that cash transactions are totally discontinued in banking sector but are significantly reduced while more electronic based transactions are encouraged. Therefore, cash-less banking in Nigeria could be referred to as the system of banking that involves both cash-based banking transactions and electronic banking transactions but predominated with the electronic banking transactions.

The operation of cash-less banking has in recent time in Nigeria, triggered great public concern regarding the increasing rate of fraud and forgery it has brought to the banks and the country at large. Many people have it that, electronic fraud has become a global threat and has increased tremendously in Nigeria since the inception of cash-less banking. For instance, Ekwueme et al. (2013) assert that banking transactions via electronic means are insecure. In the same view, Ezuwore-Obodoekwe et al. (2014) maintained that most ATM locations are not secured and this paved way for the criminals to carry-out their criminal acts. Also internet/computer hackers use the porous security system to steal data by breaking the codes or password. According to CBN (2012), the number of reported cases of fraud and forgery in Nigerian banks rose from 2,527 in 2011 to 4,527 cases in 2012. NDIC (2018) added that, the internet and technology-based sources of fraud had the highest frequency in 2018, accounting for 59.2% of fraud cases and 42.83% of the actual total loss. Furthermore, the Nigeria Electronic Fraud Forum (2018) reported that 63,895 banks' customers loss a total of N3.6 million to cyber fraud between 2017 to 2018. Consequently, many customers' confidence in the banking system is being eroded, and this affects the customers' deposits, banks' operations and the country at large.

Amidst the critical issue of cash-less banking transaction's insecurity raised above, empirical studies from Nigeria revealed scarcity of empirical evidences on total assessment of the insecurity of cashless banking transactions in Nigeria. The few previous studies

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

conducted locally in relation to the subject matter focused on cash-less banking effect on Nigeria's economy, using security issues (frauds) in cash-less banking as one of the indices for measuring growth/development or decline in the economy. The findings of these studies as shown in table 2 have created confusion regarding the conclusion on the empirical validity of people's assertion that cash-less banking transactions are insecure, due to the contradictory results of the studies. The contradictions in the results could be traced to the methodology of these studies, where some of the studies adopted review or desk study research with absence of proxies for banking transactions' insecurity (Umanhonlen et al., 2015; Elechi & Rufus, 2016); while majority of the studies also ignored completely the use of any variable for measuring insecurity or frauds in Nigeria's banking industry but simply adopted survey design instrument to elicit general information from the respondents on the subject matter, ignoring the fact that studies of this type that required the determination as to whether Nigeria's cash-less banking/policy has actually increase/decrease or significantly affected the insecurity of banking transactions needs a more objective research design like ex-post factor research design (use of secondary data) which involves the use of already existing data that cannot be manipulated. This creates a gap in methodology which this study tries to fill by using multi-variables like the total quarterly: number of fraud and forgery cases in Nigerian Deposit Money Banks, amount involved in the attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks and actual loss to fraud and forgery in Nigerian Deposit Money Banks as variables for measuring insecurity of banking transactions in Nigeria's cash-less banking era. The study also employed the ex-post factor research design as opposed to perception index or opinion poll (survey design instrument) adopted by the previous empirical studies in Nigeria (Okoye & Ezejiofor, 2013; Omotunde et al., 2013; Maitanmi et al., 2013; Adesuyi et al., 2013; Ajayi, 2014; Mohammed & Adams, 2014; Ochei et al., 2015) on their related studies to the subject matter.

This study primarily aimed at investigating cash-less banking operations since cash-less policy was introduced in Nigeria, so as to determine the significance of its effect with the increased insecurity of banking transactions in the economy. Specifically, the study aimed at determining the: effect which cash-less banking has on increased total quarterly number of fraud and forgery's cases in Nigeria's Deposit Money Banks, effect of cash-less banking on increased attempted/reported amount involved in fraud and forgery incidences in Nigerian Deposit Money Banks, and effect of cash-less banking on increased actual amount loss to fraud and forgery in Nigerian Deposit Money Banks. Three hypotheses were formulated as shown below:

Hypotheses

Hypothesis 1: *The introduction of cash-less banking in Nigeria has not significantly affected the increased number of fraud and forgery cases in Nigeria's Deposit Money Banks.*

Hypothesis 2: *Cash-less banking in Nigeria has not significantly affected the increased amount involved in the attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks*

Hypothesis 3: *The practice of cash-less banking in Nigeria has not significantly affected the increased actual loss to fraud and forgery in Nigerian Deposit Money Banks.*

REVIEW OF RELATED LITERATURE

Conceptual Framework

An overview of cash-less banking and cash-less policy in Nigeria

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

In Nigeria, banking has come a long way from the time of ledger cards and other manual filling system to the digital age. Banking business was traditionally the business of accepting deposits on current accounts, savings account and other similar accounts and the payments and collections of cheques that customers paid or drawn, through the physical presence of the customers or their agent, client or creditor in the bank premises (Okoye, 2018). Digitization later re-directed the scenario to the idea that individuals and companies can also have access to payments, savings and credit products with the aid of electronic devices, without stepping into a bank. Consequently, electronic banking emerged in Nigerian banks and was used as a platform to introduce cash-less banking in Nigeria with the introduction of cash-less policy in 2012 by the CBN, to depress the increased cash costs associated with cash- based banking, minimize the amount of physical cash floating in the country and in order to be one of the biggest and best economy in the year 2020.

The concept of cash-less banking simply means a banking system that is commonly practiced in a cash-less economy. Cash-less economy is an economic setting where the volume of cash transactions are significantly depressed with encouragement of more electronic based transactions, and does not refer to a total elimination of cash transactions in the economy. According to Akhalumeh & Ohiokha (2012), cashless banking system is a system where transactions are not done predominantly in exchange for actual cash. Odior & Banuso (2012) added that cashless banking is that banking system aimed at reducing, but not eliminating, the volume of physical cash circulating in the economy whilst encouraging more electronic based transaction. Ovia (2012) as cited in Ezuwore-Obodoekwe et al. (2014) posits that currency and notes are converted into data which are transmitted through telephone lines and satellites transporters in a cashless banking system. Obinna (2013) as cited in Osazebaru et al. (2014) opined that this system increases convenience, create more service options, reduce cost of cash related crimes and provide cheaper access to credit. Martin et al. (2014) asserted that cashless banking in Nigeria will help in modernization of Nigerian payment system, reduction in cost of banking services as well as reduction in high security and safety risks. Similarly in more developed countries, Tee & Ong (2016) maintained that there is significant effect of adopting cashless payment on the economy of five EU countries, namely Austria, Belgium, France, Germany and Portugal.

Nigeria's cash-less banking system can therefore be said to be an '*add*' process and not an '*or*' process since the system involves both cash-based banking transactions and electronic based banking transactions but predominated with electronic based banking transactions.

The CBN cash-less policy is summarized in Table 1 below:

Table 1
SUMMARY OF CASH-LESS POLICY IN NIGERIA

Cash-less policy ingredients	Individuals	Corporate Organizations
Daily Cumulative limit on cash withdrawals and deposits.	#500, 000	#3,000,000
Rate of processing fees to be charged on withdrawal above the limit	3%	5%
Rate of processing fees to be charged on deposit above the limit	2%	3%

Source: Extracted from CBN (2011).

In addition to stipulations of cash-less policy in table 2 above, value for third party cheques above #150,000 shall be received through the clearing house as it shall not be eligible for encashment over the counter from 2012. CBN (2012) maintained that irrespective of the channel used (example, ATM, POS, 3rd party cheques etc), the limit should be applied

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

to all accounts involving cash with exception of accounts operated by Ministries, Departments and Agencies of the Federal, State and local governments, solely meant for revenue collections (Fatokun, 2017 added lodgement only); Embassies; Diplomatic Missions; Multi-lateral and Aid-donor Agencies as well as Micro Finance Banks and Primary Mortgage Institutions. Okoye & Ezejiofor (2013) posited that this policy will help to fight against corruption/money laundry, reduced the risk of carrying cash and also enhance financial stability growth in the country.

Journey of cash-less policy in Nigeria

Cash-less policy was piloted in Lagos state of Nigeria in January 2012, while it took effect in Abia, Anambra, Kano, Ogun, Rivers and Federal capital territory (FCT) on 1st July, 2013 (Ezeudo, 2014) and extended to the 30 remaining states of the federation in 2017 with the service charge rate on deposits and withdrawals being reviewed in line with the decision taken in the 493rd meeting of the Bankers Committee held on the 8th February 2017, in the following order: individuals that make withdrawals above the daily limits will attract service rate as follow: above ₦500,000 - ₦1m: 2%, above ₦1m – ₦5m: 3%, above ₦5m: 7.5%; while corporate organizations' charges on withdrawals attract: above ₦3m - ₦10m: 5%, above ₦10m – ₦40m: 7.5%, above ₦40m: 10% (Fatokun, 2017). Deposits above the limit attract service charge of: above N500, 000 - ₦1m: 1.5%, above ₦1m – ₦5m: 2%, above ₦5m: 3% and above ₦3m - ₦10m: 2%, above ₦10m – ₦40m: 3%, above ₦40m: 5% for individuals and corporate bodies respectively (Fatokun, 2017). The new charges would take effect in the following states: Abia, Anambra, Kano, Lagos, Ogun, Rivers and FCT from 1st April 2017; Bauchi, Bayelsa, Delta, Enugu, Gombe, Imo, Kaduna, Ondo, Osun and Plateau from 1st May 2017; Adamawa, Akwa-Ibon, Ebonyi, Edo, Jigawa, Kastina, Nasarawa, Niger, Oyo and Taraba from 1st August 2017; Benue, Borno, Cross-River, Ekiti, Kebbi, Kogi, Kwara, Sokoto, Yobe, and Zamfara from 1st October 2017. This newly introduced processing fees above was also in April 2017 suspended by the CBN and was later reversed to the old charges. Also, the execution of cash-less policy on deposits was suspended by the CBN following the House of Representatives' directive on that to CBN due to the public's reactions on the policy.

Effective from September, 2019, the CBN re- introduced the fees on lodgements in addition to the already existing fees on withdrawals. This was stated by the Director of Payments System Management Department at the CBN, Mr Sam Okojere, in a circular addressed to all banks. According to Okojere (2019), the charges will attract 3% and 2% processing fees for withdrawals and lodgements of amount above the N500, 000 for individual accounts. Also, 5% and 3% for corporate accounts' withdrawals and lodgements respectively. Okojere (2019) also stated that the charges for deposits above shall apply in Abia, Anambra, Kano, Lagos, Ogun, Rivers, and FCT; while March 31, 2020 is the effective date for nationwide implementation. Ashike (2019) referred to the present period of cash-less policy as to the period contrary to the era when armed robbers attacked bullion vans and customers who carried large sum of cash.

Major channels of cash-less banking in Nigeria

Automated teller machine (ATM), point of sale terminal (use of smart card), internet (WEB) and mobile phone system are the major channels of cash-less banking in Nigeria.

1. **Automated teller machine**: ATM can be seen as an electronic device which enables banks customers to withdraw and lodge cash, transfer funds between accounts and obtain balances of their accounts at any period with no requirement of a human teller but through an insert of ATM card and entering of the

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

customer's personal identification number "PIN" which gives access to the account of the owner of the card. ATMs impose a surcharge on consumers who are not their institution's members or on transactions at remote locations. Effective from 1st January 2020, fee on cash withdrawals through other bank's ATMs is placed at a maximum of #35 after the third withdrawal within the same month, while no fee is charged for cash withdrawals from issuing bank's ATM in Nigeria (Efobi, 2019). A customer must request for the ATM card before banks can issue such card to the customer. Banks are liable for ATM frauds committed with cards issued without card owners requesting for it.

2. **Point of sale terminal (use of smart card)**: This is a digital device mounted by a merchant for customer's use in payment of goods and services purchased, obtain balance inquiry and electronic fund transfer without the physical use of cash. A transaction is effected with POS terminal, through the slot of a customer's smart card into the device and entering the customer's PIN. This settles and stores the transaction, issue receipt and disclose the balance on the card; the customer's account is debited at that point resulting in a fund's transfer to the merchant's (service provider's) account. According to Ekwueme et al. (2012) as cited in Okoye (2018), smart card is a PIN protected card issued to a customer (a person who has a current account with the bank) by a member bank of SMART CARD Nigeria Limited to aid them in their transactions. Debit card, credit card, master card and visa card also have similar function with the smart card discussed above. Merchants are designated centres where cardholders can transact business using electronic card. They include such places as airlines, hotels, restaurants, pharmaceuticals, supermarkets and others.
3. **Internet (WEB):** internet is also used to carry out banking transactions and also disseminate information. The word "*internet*" is the abbreviation for international network for communication. Ekwueme et al. (2012) referred to it as a global network of computers. Banks send letters and messages related to their customer's account (for example, statement of account, debit or credit into customer's account), electronically to their customers anywhere in the world via electronic mail "*E-mail*" and e-mail to fax (a supplementary service to the email services designed to enable a subscriber send messages to those who have no e-mail facility but fax facilities). Also, banks disseminate information or advertise their services via their websites. Those in need for such information will then use special software called "*browser*" to link up with the websites and read or download any information they desired.
4. **Mobile phone:** Mobile phones can be used to effect payments and render financial services in cash-less banking system. Some of the banking services which are provided through mobile phone include account balance inquiry, funds transfer, payment of bills, short message service "Z*SMS*" which notifies the customer of any transaction on his/her account. James & Rodger (2016) put it that a smart phone can be turn into a wallet, bank branch, checkbook, and an accounting ledger, all in one by digital finance.

Apart from the channels discussed above, Nigeria' cash-less banking era also involves the use of cheque, Nigerian Interbank Settlement Scheme "*NIBSS*" Fund Transfer (NEFT and NIP), Real Time Gross Settlements "RTGS" and human tellers. The policy's limit on amount to be withdrawn over the counter with third party cheques confirmed cheques as a medium of cash-less banking in Nigeria. NIBSS Funds Transfer is an online platform that enable banks to exchange values thereby allowing the interbank transfers like National Electronic Fund Transfer "NEFT" and NIBSS instant payments. NIBSS Fund Transfers involve transferring funds between banks for single or multiple beneficiaries for individual amounts not exceeding ₦10 million (Okoye & Ezejiofor, 2013 as cited in Okoye, 2018). NEFT transfers are not immediate like NIBSS instant payments ''*NIP*'', since once effected have to wait for the next available clearing session of CBN after which the amount is received in the beneficiary's account the same day or next working day. RTGS is used for big ticket transactions which must have been effected before noon for most banks if the funds are to reach the recipient bank the same day. Specifically, it is employed in transferring sums above ₦10million in favour of one beneficiary. Effective from 1st January 2020, CBN has announced a fee of #10 to be attracted for electronic fund transfer below #5000 by customers, and fee of #25 and #50 to be applied for electronic fund transfer between #5,000 - #50,000 and above #50,000 respectively; while #950 will be charge for RTGS (Efobi, 2019). Also, cash-less banking in Nigeria involved the use of human tellers in the execution of banking

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

operations. The tellers also accept cash deposits, make cash payments and also render other banking services to the customers over the counter in the cash-less era. Even the use of electronic devices discussed above cannot be possible without human beings because computers and other digital devices are operated by human beings.

An overview of cash-less banking transactions' insecurity in Nigeria

Insecurity simply means the state of being open to threat or danger. Beland (2005) as cited in Kanu & Isu (2016) viewed insecurity as a state of fear or anxiety due to absence or lack of protection. However, banking transaction insecurity means the absence of protection to customers' data, information, money and their entire transactions with the bank. The outcome for a weak security mechanism is fraud. Therefore, banking transaction's insecurity could be measured with frauds in Nigerian banks.

Fraud is a misrepresentation of facts by someone through his/her words or conducts in order to mislead or deceive another into extorting something important from the deceived person and inflict on him/her, legal injury. Nwankwo (2013) as cited in Mawutor1 et al. (2019) referred fraud to as a deliberate act that causes a business or an economy to suffer damages in monetary value.

The surge in adoption and usage of cash-less banking instruments has risen fraud incidence in the Nigerian banking sector. The vulnerability of the Deposits Money Banks to frauds has been proved with the evidences from Banks' regulatory bodies. Nigeria electronic fraud forum annual report (2016) have it that, of the nearly 44 trillion Naira in payments made across Nigeria in 2014, over 7 billion Naira was reported as the value of "*attempted*" fraud and 6.22 billion Naira was the actual loss value reported. The Nigeria Inter-Bank Settlement System Plc ''*NIBSS*'' report also shows that in the same year, ATM fraud was the most attempted with 491 incidents and Internet Banking recorded the highest fraud value of 3.2 billion Naira (Awelewa, 2016). NDIC annual report of 2013 and 2019 disclosed increased cases of frauds and forgeries in Nigeria's DMBs from 3,380 in 2012 to 52,754 in 2019. The rising fraud incidences to NDIC (2018) could be attributed to the increase in sophistication of fraud related techniques such as cybercrime, hacking and increase in information technology-related products and usage.

Banking frauds could be classified as those perpetrated by banks' insiders such as the management and employees of the banks; outsiders like customers and other individuals who do not work directly in the banks and a collaboration of insiders and outsiders. However, the Deposit Money Banks are statutorily required in section 35 of NDIC Act No. 16 of 2006 to render returns to the corporation on frauds, forgeries or outright theft occurring during such month including a detailed report of such events. In line with the statutory requirement above, DMBs furnish NDIC with returns on number of frauds and forgeries casas in DMBs (TNFFC), amounts involved in attempted fraud and forgeries in DMBs (TAIFF) and the actual loss value to frauds and forgeries in DMBs (TALFF). This form the basis for selecting this study's proxies for dependent variable- insecurity of banking transaction in Nigeria to include TNFFC, TAIFF and TALFF which were explained in relation to theoretical framework and model specification in the subsequent sections.

Fraud has negative implications as customers' confidence in the banking system is being eroded and this affect the customers' deposits in these banks and could lead to financial exclusion. Therefore, there arose an urgent need to control the level of frauds in the banks in order to restore customers' confidence in banking sector. According to Fatokun (2016), interventions in Nigeria's law enforcement model has been made, attention of the Judiciary has been drawn to the need for more training of our judges on cybercrime, useful discussions have commenced with our telecom regulator in the face of an increased use of mobile

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

platforms for payments (occasioned by the introduction of USSD), on more protective measures for users. Additionally, the CBN directives for the establishment of industry fraud desks and the introduction of biometrics to the ecosystem have been put in place to depress fraud menace in Nigeria's financial space. Section 19 (3) of Cyber security Act, 2015 has mandated financial institutions as a duty to their customers to put in place effective counter-fraud measures to safeguard their sensitive information, where a security breach occurs the proof of negligence lies on the customer to prove the financial institution in question could have done more to safeguard its information integrity (NEFF, 2016).

Amidst all the measures for controlling and combating frauds above, yet Nigeria still experiences increase in fraudulent activities in banking sector. Therefore, there is need for a more proactive measure for combating frauds in the Nigerian banks which this study sort to establish for smooth operations of cash-less banking in the country.

Theoretical Framework

Theoretically, this work is anchored on fraud triangle theory in describing the elements of banking transaction's insecurity (measured with fraud) in Nigeria's cash-less banking era. Fraud triangle theory was developed by Donald Cressey, a sociologist and criminologist in his study on the behavior of white collar crime in the 1950's in respect of those he term trust violators (Mawutor et al., 2019). The theory views pressure, rationalization and opportunity as the three element that must exist for individual(s) to commit fraud.

Pressure is the motivation of individual(s) to perpetrate fraud. It could result from financial burden, organizational needs (like desire for more investments and meeting banking regulator's requirements), urge for modernisation and globalisation. Some Scholars have employed number of staff involved in fraud and forgery cases as the product of fraud resulted from pressure. For instance, Mawutor et al. (2019) when studying fraud and performance of DMBs used number of staff involved in fraud and forgery cases as a proxy for pressure. But fraud induced by pressure in a cash-less banking system could be committed by both outsiders and staff of the banks. Thus this study used total number of frauds and forgeries cases in DMBs as a proxy for pressure. Total Number of fraud and forgery's cases in DMBs is the aggregate number of reported cases of attempted frauds and forgeries in the nation's DMBs. The pressure of individual's (both within and outside financial institution) financial needs to meet up with technology advancement in cash-less banking system driven by the pressure of Nigeria's modernization of their payment system in the 21st century, drive such individuals to attempt frauds. Taiwo et al. (2016) as cited in Mawutor et al. (2019) posited that the proportion of reported bank cases that hit the dailies represent only a minute percentage of fraud occurrences in banks; while NDIC (2018) attributed the rising fraud incidences to the increase in sophistication of fraud related techniques such as cybercrime, hacking and increase in information technology-related products and usage.

The second element, rationalization is the justification given to a crime by the committed fraudster in his mind. It may emanate from low compensation of employees, dissatisfaction of employees at work and lack of recognition. Some fraudsters rationalized that the bank have enough money and will not be affected by a simple fraud (Adeyomo, 2012 as cited in Mawutor et al., 2019). In describing this element, this study employed the amounts involved in attempted fraud and forgery's cases in DMBs (TAIFF) as a proxy for rationalization. TAIFF is the aggregate naira value of reported cases of attempted frauds and forgeries in the nation's DMBs. The amount involved in fraud cases has remained historically high as a result of the rationality of both insiders and outsiders of Nigeria's banks to commit fraud. Lack of good remuneration of Bank's staff may prompted the attempt to steal large

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

amount from the bank with the rationale that they are maltreated by the bank. While Outsiders may rationale that a lot of money resided in the banks and any amount steal from them may have little or no effect on them. These increased the amount involved in fraud's cases in Nigeria's banks.

The third element, opportunity creates easy way for frauds to be committed. Fraud may not be committed if the prospective fraudster is not given an opportunity to perpetrate fraud. Opportunity could result from weak internal control system, weak security measures, weak audit committee and lack of supervision. In explaining opportunity, this study employed the total actual loss value to frauds and forgeries in DMBs (TALFF). TALFF is the actual total amount lost to fraud incidences by DMBs. The volume and value of attempted/reported fraud incidences are usually compared with the actual loss value to fraud incidences in other to determine the effectiveness of security architecture in the banking industry. When reports are given in respect of fraud's cases and amount involved, it is expected from the banks to seize all possible opportunities at which such attempted fraud incidences could actually take place to result to actual losses to the banks. This opportunity is more pronounced with the practice of cash-less banking, that is why evidence from NDIC annual reports of 2013 and 2019 disclosed an increase in the total amount loss to fraud from #4,516m in 2012 to #5,463 in 2019 respectively. Hence there is need to empirically ascertain whether the rising of actual loss to frauds is as a result of the practice of cash-less banking in Nigeria, therefore the need for our 3rd hypothesis.

Empirical Review

The empirical review of related studies conducted in Nigeria on cashless banking effect on insecurity of banking transactions is presented in Table 2 below.

Table 2
EMPIRICAL REVIEW

Author(s)	Topic / Main Objective	Methodology	Results
			''Studies' results showing reduced banking transaction's insecurity by Nigeria's cashless banking''.
Okoye & Ezejiofor (2013).	Appraisal of cashless economy policy in development of Nigerian Economy	Questionnaire method of data collection. ANOVA and chi-square statistical tools were employed in testing the hypotheses.	The policy will help to fight against corruption/ money laundry, reduce the risk of carrying cash and enhance financial stability growth in Nigeria.
Omotunde et al. (2013)	Impact of cashless economy in Nigeria.	Survey instrument of data collection. Charts and frequency table were used for data analysis	Cashless economy in Nigeria aids reduction of high security and safety risks cum banking related corruptions. It also fosters transparency and modernization of Nigeria's payment system.
Martin et al. (2014)	Impact of CBN's cashless policy on Nigerian economy	Questionnaire method of data collection.	Cashless economy in Nigeria aids reduction of high security and safety risks cum banking services' costs. It also assists in modernization of Nigeria's payment system.
Adesuyi et al. (2013)	Survey into ATM fraud and its security implementation in the banking environment in Nigeria		**''Studies' results showing increased banking transaction's**

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

			insecurity by Nigeria's cashless banking''.
Ajayi, (2014)	Effect of cashless monetary policy on Nigerian banking industry: Issues, prospects and challenges	Questionnaire method of data collection. Chi-Square test and one way ANOVA were utilized in data analysis.	No significant difference was found in the perception of the respondents (entrepreneurs, civil servants and students) on the positive impact of ATM on banking and on security challenges of ATM services. Current security implementation was concluded not to proffer the adequate security necessary to secure electronic transactions, customer's information and funds.
		Table 2 Continued.	
Mohammed & Adams (2014)	Assessing the factors affecting cashless policy's prospects and implementation in Borno state-Nigeria.	Questionnaire method of data collection. Frequency table and percentages was used for data analysis and chi- square for hypotheses testing.	
Galadima et al. (2014)	Impact of security, performance and financial risks on the adoption/acceptability of cashless economy in Nigeria with a view of determining the impact of knowledge-based trust (KBT) when integrated with technology acceptance model (TAM), on Nigeria's cashless economy adoption/acceptance.	Survey method of data collection. Descriptive statistics and one way ANOVA were employed in data analysis	High rate of cyber- crime, inadequate technological infrastructures and high rate of illiteracy are found as hindrance to full implementation and benefits of the policy, amid the policy's positive effect on banks' development as it aids ease of operation and reduces ques and congestions in the banking hall
Ochei et al. (2015).			
Umanhonlen et al. (2015).	Investigate if cashless economy will reduce fraud and unemployment in Nigeria.	Questionnaire method of data collection.	Security, cyber-crime and theft, power, IT infrastructure, publicity, high level of illiteracy and job losses were found as challenges of cashless transactions.
Elechi & Rufus (2016).	Appraisal of the Impact of e-banking and cashless society in Nigerian economy.	Questionnaire method of data collection. Pair Sample T-test analytical tool was employed.	Perceived risk's constructs reduced behavioral intention towards adoption/acceptance of cashless banking, while KBT increases user's attitude towards cashless banking adoption/acceptance since it reduces fears and aids people to live in risky and uncertain situation. Also, perceived ease of use (which predicts perceive usefulness) and attitude positively affect Nigeria's cashless banking.
Maitanmi et al. (2013)	Cashless policy in Nigeria and its socio-Economic impacts.	Review study based on empirical opinions.	
		Table 2 Continued.	
	Cashless society: Driver's and challenges in Nigeria.	Desk study based on extant literature and empirical opinions.	Cashless economy would increase the rate of fraud and unemployment in Nigeria.
		Questionnaire method of data collection.	Nigeria's electronic fraud is expected to increase with cashless economy. Also, time waste, network failures and all kinds of abuses outweighed the recorded successes of cashless economy.
			Security, socio-cultural issues,

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

			infrastructures, legal and regulatory issues are found as the challenges of implementing Nigeria's electronic cashless policy. **Mixed Result.** Cyber frauds, limited POS and numeracy illiteracy are the major envisaged problems that can hinder the policy's implementation. The policy will also help to fight against corruption/money laundering, reduce cash carrying risks and foster economic growth.

Source: Author's Compilation (2021).

Gap in Reviewed Literature

The various empirical studies reviewed in Table 2 above, revealed scarcity of empirical evidences on the total assessment of the insecurity of cashless banking transactions in Nigeria. The few previous studies conducted locally in relation to the subject matter were mostly on cash-less banking effect on Nigeria's economy in general, where the level of security of banking transaction (fraud) via cash-less banking system was considered as one of the indices for measuring growth/development or decline in the economy with absence of any variable for measuring fraud. Instead, most of these studies elicit general information from the respondents on the issue of frauds in Nigeria through opinion poll or survey instrument; while some other studies adopted review or desk study research (Umanhonlen et al., 2015; Elechi & Rufus, 2016). The contradictory results revealed by these studies as shown in table 2 have created confusion regarding the conclusion on the empirical validity of people's assertion that cash-less banking transactions are insecure. The contradictions in the results could be traced to the methodology of these studies since some of the studies adopted review or desk study research with absence of proxies for banking transactions' insecurity; while majority of the studies also ignored completely the use of any variable for measuring insecurity or frauds in Nigeria's banking industry but simply adopted survey design instrument to elicit general information from the respondents on the subject matter, ignoring the fact that studies of this type that required the determination as to whether Nigeria's cash-less banking/policy has actually increase/decrease or significantly affected the insecurity of banking transaction needs a more objective research design like ex-post factor research design (use of secondary data) which involves the use of already existing data that cannot be manipulated. This creates a gap in methodology which this study tries to fill by using multi-variables like the number of fraud and forgery cases in Nigerian Deposit Money Banks (TNFFC), the amount involved in the attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks (TAIFF) and the actual loss to fraud and forgery in Nigerian Deposit Money Banks (TALFF) as variables for measuring insecurity of banking transactions in Nigeria's cash-less banking era. It also employed the ex-post factor research design while assessing cash-less banking effect on banking transaction's insecurity in Nigeria, as opposed to perception index or opinion poll (survey design instrument) adopted by the previous empirical studies in Nigeria (Okoye & Ezejiofor, 2013; Omotunde et al., 2013; Maitanmi et al., 2013; Adesuyi et al., 2013; Ajayi, 2014; Mohammed & Adams, 2014; Ochei et al., 2015) on their related studies to the subject matter.

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

METHODOLOGY

The study employed the ex-post facto research design and secondary sources of data collection. The aggregate quarterly data (quarter 1-quarter 4, 2012 to quarter 1-quarter 4, 2019) of all the DMBs operating in Nigeria as at 2012-2019 as contained in CBN statistics database and NDIC annual reports; summing up to 32 observations were utilized in this work. Among all the banks in the country, only DMB's aggregate data was considered because DMBs are the only deposit-taking financial institution that are covered in the scope of Nigeria's cash-less policy. 2012 was chosen as the base year since that was the kick-started year of cash-less policy in Nigeria; while 2019 was used as the end year due to data availability. Data on the total quarterly volume of: automated teller machine transactions (TATMT), point of sale terminals transactions (TPOST), web transactions (TWEBT) and mobile phone banking transaction (TMPBT) which were used as proxies for the independent variable, cash-less banking system were sourced from the CBN statistics database (2012-2019); while data on the total quarterly: number of fraud and forgery cases in Nigeria's DMBs (TNFFC), amount involved in the attempted/reported fraud and forgery incidences in Nigeria's DMBs (TAIFF) and actual loss to fraud and forgery in Nigeria's DMBs (TALFF) used as measures of the dependent variable, insecurity of banking transactions were sourced from NDIC annual reports (2013, 2017 and 2019). Both descriptive and inferential statistics were employed in data analysis and testing of hypotheses. The descriptive statistical analysis gives the description of individual research variables, while the inferential statistics employed was multivariate regression techniques of model estimation (Error Correction Model estimation and short-run, Autoregressive Distributed Lag model estimation) using E-Views 10.0, used to estimate the insecurity of cash-less banking in Nigeria based on the studied time series data. Since this study's models involved time series variables, the least square regression was preceded by stationary/unit root test to ensure the stationarity of the data (variables) as well as assures non-spurious regression results. Based on the outcome which revealed that the variables are stationary at both level 1(0) and first difference 1(1), a co-integration test was conducted to establish if a long-run relationship exists between the two categories of variable in the models or not, using Autoregressive Distributed Lag (ARDL) bound testing techniques. Following the existence of the long run relationship between the variables in hypothesis one and two, the error correction model was employed in the analysis/test of hypothesis 1 and 2 to reconcile the long-run behavior of economic variables with their short-run behavior. While a short run model; ARDL was used for testing hypothesis 3.

Models' Specification

Three-equation multivariate regression model were developed for the analysis of data and test of the three study's hypotheses, with the assumption of a functional relationship between the log of each of the dependent variable and log of all the independent variables for each of the equations as shown below:

LTNFFC: = *F*(LTATMT, LTPOST, LTMPST and LTWEBT) …….. (1)

LTAIFF: = *F*(LTATMT, LTPOST, LTMPST and LTWEBT) …… (2)

LTALFF: = *F*(LTATMT, LTPOST, LTMPST and LTWEBT) …… (3)

When the variables in equation (or hypothesis) 1, 2, 3 were tested for co-integration, variables in equation 1 and 2 were found to be co-integrated while that of equation 3 did not

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

co-integrate. Thus long-run model was specified in econometric terms for the hypotheses 1 and 2 considering the error term influence and also the lag functions of the series to the model, as respectively stated below:

$$LTNFFC_t = a_{oi} + b_{1i}\, LTNFFC_{t-i} + b_{2i}LTATMT_{t-i} + b_{3i}LTPOST_{t-i} + b_{4i}LTMPBT_{t-i} + b_{5i}LTWEBT_{t-i} + e_{it} \quad \cdots (4)$$

$$LTAIFF_t = a_{oi} + b_{1i}\, LTAIFF_{t-i} + b_{2i}LTATMT_{t-i} + b_{3i}LTPOST_{t-i} + b_{4i}LTMPBT_{t-i} + b_{5i}LTWEBT_{t-i} + e_{it} \quad \ldots (5)$$

Where: a_{oi} = constant terms, b_{1i} - b_{5i} = coefficients, e_{it} = error terms, $_{t-i}$ = a period lag

The presence of long run relationship between the variables in equation 4 and 5 prompted the estimation of error-correction model for testing hypothesis 1 and 2 and short run model, Auto-regression Distributed Lag (ARDL) model for testing hypothesis 3. To estimate the Long-run model (ECM), there is need to first of all extract the residue and plug it into the error correction model. Considering the appropriate lag (1), the ECM for the test of hypothesis 1 and 2 is specified below:

$$LTNFFC_t = a_{oi} + \sum^{p}_{i=1} a_{1i}\Delta LTNFFCt\text{-}i + \sum^{p}_{i=1} a_{2i}\Delta LTATMT_{t-i} + \sum^{p}_{i=1} a_{3i}\Delta LTPOST_{t-i} + \sum^{p}_{i=1} a_{4i}\Delta LTMPBT_{t-i} + \sum^{p}_{i=1} a_{5i}\Delta LTWEBT_{t-i} + clb + e_{it} \quad \ldots\ldots (6)$$

$$LTAIFF_t = a_{oi} + \sum^{p}_{i=1} a_{1i}\Delta LTAIFFt\text{-}i + \sum^{p}_{i=1} a_{2i}\Delta LTATMT_{t-i} \sum^{p}_{i=1} a_{3i}\Delta LTPOST_{t-i} + \sum^{p}_{i=1} a_{4i}\Delta LTMPBT_{t-i} + \sum^{p}_{i=1} a_{5i}\Delta LTWEBT_{t-i} + clb2 + e_{it} \quad \ldots\ldots (7)$$

Where: clb and clb2 represent the residual generated, Δ signifies change.

While the short-run (ARDL) model for testing hypothesis 3 is:

$$\Delta LTALFF_t = a_{oi} + \sum^{p}_{i=1} a_{1i}\Delta LTALFFt\text{-}i + \sum^{p}_{i=1} a_{2i}\Delta LTATMT_{t-i} + \sum^{p}_{i=1} a_{3i}\Delta LTPOST_{t-i} + \sum^{p}_{i=1} a_{4i}\Delta LTMPBT_{t-i} + \sum^{p}_{i=1} a_{5i}\Delta LTWEBT_{t-i} + e_{it} \quad \ldots\ldots (8)$$

DATA ANALYSIS AND INTERPRETATION OF RESULTS

Descriptive statistics

Table 3
DESCRIPTIVE STATISTICS

	LTNFFC	LTAIFF	LTALFF	LTATMT	LTPOST	LTMPST	LTWEBT	clb	clb2
Mean	8.1375	8.4596	6.9488	18.7071	16.1299	15.8892	14.9359	-2.7215	-4.9017
Median	8.2591	8.2783	6.9585	18.6094	16.0507	16.1144	14.7495	0.011536	-6.3317
Maximum	9.6329	12.1611	9.2424	19.2949	18.6798	18.8871	17.1768	0.507442	1.3016
Std. Dev.	0.9709	0.9005	0.6876	0.4080	1.8193	1.4188	1.3230	0.240623	7.1317
Skewness	-0.1919	2.2061	0.9748	-0.0298	-0.4142	-0.4938	0.2039	-0.148680	0.5783
Kurtosis	1.8773	10.0044	5.2054	1.5678	2.4277	3.8332	1.8508	2.530267	3.5081
Jarque-Bera	1.8773	91.3714	11.5533	2.7396	1.3516	2.2263	1.9827	0.399218	1.9285
Observations	32	32	32	32	32	32	32	31	29

Source: Author's Computation (2021)

Table 3 shows the statistical descriptions of the variables in our models. The result disclosed that LTNFFC averaged 8.1375, its standard deviation is 0.9709 and the skewness is -0.1919. The mean of LTAIFF is 8.4596; the standard deviation is 0.9005 while skewness is 2.2061. For LTALFF, the mean is 6.9488, the standard deviation is 0.6876 and skewness is 0.9748. Meanwhile, the LTATMT, LTPOST, LTMPST, and LTWEBT, have respectively, an

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

average outcome of 18.7071, 16.1299, 15.8892, and 14.9359, standard deviation of 0.4080 for LTATMT, 1.8193 for LTPOST, 1.4188 for LTMPST, and 1.3230 for LTWEBT and for skewness, of -0.1919 for LTNFFC, 2.2061 for LTAIFF, and 0.9748 for LTALFF. For the residuals, the mean measure of clb is -2.7215 and -4.9017 for clb2. For the standard deviation, clb has a value of 0.2406 and clb2 has a value of 7.1317.

All variables show a positive value for kurtosis. LTNFFC shows a kurtosis of 1.8773 < 3, LTAIFF at 10.0044 > 3, LTALFF at 5.2054 > 3, LTATMT at 1.5678 < 3 and LTPOST at 2.4277< 3, LTMPST at 3.8332>3, and LTWEBT at 1.8508<3. These revealed that the degree of tailedness of all variables except LTNFFC, LTATMT, LTWEBT, and LTPOST have a heavier tail and this is called leptokurtic distribution. LTNFFC, LTATMT, LTWEBT and LTPOST have lighter tail and this is called platy kurtosis.

Unit Root Test

The Augmented Dickey-Fuller unit root test was employed to ensure the stationarity of the variables and also ensure non-spurious regression results**.**

Table 4
RESULT OF AUGMENTED DICKEY-FULLER UNIT ROOT TEST

S/N	Variables	ADF Stat	Critical Values			Order of Integration
			1%	5%	10%	
1	LTAIFF	-10.82846 **PV (0.0000)**	-3.670170	-2.963972	-2.621007	1(1)
2	LTALFF	-6.738945 **PV (0.0000)**	-3.670170	-2.963972	-2.621007	1(1)
3	LTATMT	-6.031496 **PV (0.0000)**	-3.670170	-2.963972	-2.621007	1(1)
4	LTMPST	-3.632734 **PV (0.0144)**	-3.589194	-2.971853	-2.625121	1(0)
5	LTNFFC	-7.306355 **PV (0.0000)**	-3.670170	-2.9639972	-2.621007	1(1)
6	LTPOST	-8.658376 **PV(0.0000)**	-3.670170	-2.963972	-2.621007	1(1)
7	LTWEBT	-3.758723 **PV(0.0330)**	-4.284580	-3.562882	-3.215267	1(0)

Source: Author's Computation (2021) using E-views 10.0

The ADF Stat absolute values in Table 4 above are greater than the critical values at 5% level of significance, the variables, therefore, are stationary at this level. The p-values are all less than a 5% level of significance. The result revealed that the variables are stationary at both level 1(0) and first difference 1(1), thus a co-integration test is necessitated.

Co-integration Test

The (ARDL) bound testing technique was found appropriate for the co-integration test, to establish if a long-run equilibrium relationship exists between the models' variables or not, following the mixed level of integration shown in the stationary test above. Its hypothesis is stated below:

H_o: no co-integrating equation

H_1: H_o is not true

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Decision Criteria for the Bound Test

Reject the null hypothesis of no co-integration equation either at 10%, 5%, or 1% level of significance, if the calculated F-statistic is greater than the critical value for the upper bound 1(1). This means that co-integration exists, that is the long-run equilibrium relationship exists between the explanatory variables and explained variable in the equation concerned. In such case, the long-run model which is the Error Correction Model (ECM) is estimated.

If the calculated F-statistic is lower than the critical values for the upper bounds 1(1), there is no long-run relationship. In such case, the short-run model (Autoregressive Distributed Lag) is estimated. Table 5 below shows the outcome of the Bound test conducted for all hypotheses:

Table 5
SUMMARY OF BOUND TEST RESULT

Dependent Variable	F-Statistics	Significant Level	Upper Bound Limit 1(1)	Lower Bound limit 1(0)	Co-integration	What Next???
LTNFFC (Hypothesis One)	$\mathbf{F_{LTNFFC}}$ **= 17.04908**	10%	3.52	2.45	Yes	Estimate the ECM (Long-run Model)
		5%	4.01	2.86		
		2.5%	4.49	3.25		
		1%	5.06	3.74		
LTAIFF (Hypothesis Two)	**F**LTAIFF = **4.766278**	10%	3.09	2.2	Yes	Estimate the ECM (Long-run Model)
		5%	3.49	2.56		
		2.5%	3.87	2.88		
		1%	4.37	3.29		
LTALFF (Hypothesis Three)	**F**LTALFF = **2.330270**	10%	3.09	2.2	No	Estimate the ARDL (Short-run model)
		5%	3.49	2.56		
		2.5%	3.87	2.88		
		1%	4.37	3.29		

Source: Author's Computation (2021)

Table 5 revealed that the f-statistics for hypotheses one and two is greater than the critical values at the upper bound limit 1(1) at either 10%, 5% or 1% significant level, hence the variables in equation specified for hypothesis one and two (eqn 1&2) shows the presence of a long-run relationship. Based on the result, the long-run model was applied for Hypotheses one and two. For Hypothesis three, the f-statistics is lower than the upper bound limit therefore the ARDL model was applied.

To perform the ECM and the short-run model; the ARDL, it is appropriate to get an appropriate lag length to be used for the analysis. Below is Table 6 showing the appropriate lag length for each hypothesis:

Table 6
SUMMARIZED RESULT OF VECTOR AUTOREGRESSIVE (VAR) LAG ORDER SELECTION CRITERIA FOR APPROPRIATE LAG LENGTH OF THE THREE HYPOTHESES

Hypothesis	Appropriate Lag
Hypothesis One	1
Hypothesis Two	1
Hypothesis Three	1

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Source: Author's Computation (2021)

Model Estimation and Interpretations

Long-run Model (ECM) estimation for testing hypothesis one and two.

Table 7
SUMMARY OF THE ECM (SEE MODEL 6) RESULT FOR TEST OF HYPOTHESIS ONE

Variables	Coefficient	Std Error	t-statistics	Prob.
C	0.730778	2.434831	0.300135	0.7668
D(LTNFFC(-1))	0.041698	0.271333	0.153679	0.8792
LTATMT(-1)	-0.037121	0.130071	-0.285391	0.7779
D(LTPOST(-1))	-0.025470	0.080786	-0.315277	0.7554
D(LTMPST(-1))	-0.033453	0.070298	-0.475873	0.6387
D(LTWEBT(-1))	0.522502	0.235343	2.220169	0.0365
clb(-1)	-0.793621	0.354881	-2.236299	0.0353
R^2	0.379711			
Adjusted R-square	0.217896			
F- stat	2.346581			
Prob(F-stat)	0.064797			
D.W stat	2.309663			
DEPENDENT VARIABLE: D (LTNFFC)				

Source: Author's Computation (2021)

Table 7 above shows the summary of the ECM result for test of hypothesis one. From the table, log of TATMT, TPOST and TMPST showed a negative and non-significant effect (at 5% significant level) on the log of total number of fraud cases in Nigeria deposit money banks for the period under study. While LTWEBT showed a positive and significant effect on LTNFFC. These implied that one percentage increase in LTATMT, LTPOST and LTMPST results to 0.037121, 0.025470 and 0.033453 percentage decrease in LTNFFC, although the extent of the reduction is non-significant; while one percentage increase in LTWEBT results to 0.522502 percentage significant increase in LTNFFC.

The residual, clb of the ECM is negative (-0.793621) as expected, statistically significant at a 5% level of significance and has the approximate value of 79.4%, meaning that the system corrects its previous disequilibrium period at speed of 79.4% and thereby gives the validity that the variables in hypothesis one have long run equilibrium relationship.

The goodness of fit of the regression was shown by the R^2 of 37%. The exogenous variables are jointly responsible for a 37% variation in the endogenous variable with an unexplained variation of 63%. This implied that there are other variables other than the explanatory variables that are responsible for the change in the endogenous variable which is not accounted for. Testing the overall significance of the model, the F-stat (2.346581) and its significant value of 0.064797 affirm the statistical non-significant effect of cash-less banking variables taken together on TNFFC. Therefore, the hypothesis one is accepted and the study upholds that the introduction of cash-less banking in Nigeria has not significantly affected the increased number of fraud and forgery cases in Nigeria's Deposit Money Banks.

The Durbin Watson Statistics of approximately 2, rules out all possibility of the suspicious of first-order positive autocorrelation. The absence of auto-correlation problem was further supported with the result of the diagnostic test, Breusch-Godfrey Serial Correlation (LM) test (see Table 8 below) which shows that the model is not suffering from serial correlation (F-stat. = 0.6203 > 0.05), therefore the result is good for a meaningful analysis.

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Table 8 DIAGNOSTIC TEST FOR ECM FOR HYPOTHESIS ONE (BREUSCH-GODFREY SERIAL CORRELATION LM TEST)		
	F-statistic	**Obs*R-squared**
Hypothesis one	0.6203	0.5096

Source: Author's Computation (2021)

Table 9 THE LONG-RUN MODEL (ECM) FOR TEST OF HYPOTHESIS TWO				
Variables	Coefficient	Std Error	t-statistics	Pro.
C	-2.10	5.52	-0.38	0.7075
D(LTAIFF(-1))	1.00	3.54	2.83	0.0000
D(LTATMT(-1))	-3.84	3.35	-1.14	0.2645
D(LTPOST(-1))	4.79	4.99	0.96	0.3475
D(LTMPST(-1))	6.12	4.28	1.43	0.1679
D(LTWEBT(-1))	6.63	2.59	0.26	0.8002
clb2(-1)	-0.76	0.45	-1.68	0.1072
R^2	0.33			
Adjusted R-square	0.21			
F- stat	1.35			
Prob(F-stat)	0.0000			
D.W stat	2.42			
DEPENDENT VARIABLE: D(LTAIFF)				

Source: Author's Computation (2021)

Table 9 above shows the ECM result for test of hypothesis two. The table disclosed the existence of a positive and statistically non-significant relationship between LTPOST, LTMPST, LTWEBT (when individually considered) and LTAIFF at 5% significant level with their respective coefficient(significant) values of 4.79(0.3475), 6.12(0.1679) and 6.63(0.8002), while a non-significant negative relationship exist between LTATMT(-3.84(0.2645)) and LTAIFF.

The residual, clb2 is negative (-0.756031) as expected. Based on the result obtained, the previous error in the subsequent period has been corrected.

Also, the R^2 of 33% shows the goodness of fit of the regression. The exogenous variables are jointly responsible for a 33% variation in the endogenous variable with an unexplained variation of 67%. This implied that there are other variables other than the explanatory variables that are responsible for the change in the endogenous variable which is not accounted for. On the whole, the regression result is significant with F-stat of 1.35 and associated p-value of 0.0000. Therefore, the hypothesis two is rejected and the study upholds that cash-less banking in Nigeria has significantly affected the increased amount involved in the attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks. The Durbin Watson Statistics of 2.42 which is approximately 2 shows no auto-correlation problem. The absence of auto-correlation problem was further supported with the result of the diagnostic test, Breusch-Godfrey Serial Correlation LM test (see Table 10 below) which shows that the model is not suffering from serial correlation with the F-value of 0.4341which is above the 5% level of significance.

Table 10 DIAGNOSTIC (BREUSCH-GODFREY SERIAL CORRELATION LM)		
Test for ECM model; Hypothesis Two		
	F-statistic	**Obs*R-squared**
Hypothesis Two	0.4341	0.6341

Source: Author's Computation (2021)

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Short-run Model (Auto-regression Distributed Lag (ARDL) model) estimation for testing hypothesis three.

Table 11
THE SHORT-RUN MODEL (AUTO-REGRESSION DISTRIBUTED LAG (ARDL) MODEL) FOR TESTING HYPOTHESIS THREE

Variables	Coefficient	Std Error	t-statistics	Pro.
C	-0.031502	0.173686	-0.181374	0.8576
D(LTALFF(-1))	-0.161320	0.194401	-0.829828	0.4148
D(LTATMT(-1)	0.400351	1.378350	0.290457	0.7740
D(LTPOST(-1))	-0.212655	0.219433	-0.969109	0.3422
D(LTMPST(-1))	-0.124870	0.195063	-0.640151	0.5281
D(LTWEBT(-1))	0.676355	0.728389	0.928563	0.3624
R^2	15%			
Adjusted R-square	0.03			
Log likelihood	-31.04412			
F- stat	0.85			
P-value	0.527466			
D.W stat	2.04			
Dependent variable: D(LTALFF)				

Source: Author's Computation (2021)

Table 11 above shows the short-run model - the Auto-regression Distributed Lag (ARDL) result for testing hypothesis three. From the table, LTATMT and LTWEBT disclosed a positive and non-significant effect on LTALFF; while a non-significant negative effect exist between LTPOST, LTMPST and LTALFF (when individually considered) at 5% significant level with their respective coefficient(significant) values of 0.400351(0.7740) and 0.676355(0.3624); -0.212655(0.3422) and -0.124870 (0.5281).

The goodness of fit of the regression was represented by R^2 of 15%. The exogenous variables are jointly responsible for a 15% variation in the endogenous variable with an unexplained variation of 85%. This signified that there are other variables other than the explanatory variables that are responsible for the change in the endogenous variable which is not accounted for. On the whole, the regression result is non-significant with F-stat of 0.85 associated with a p-value of 0.527466. Therefore, hypothesis 3 is accepted and the study maintained that the practice of cash-less banking in Nigeria has not significantly affected the increased actual loss to fraud and forgery in Nigerian Deposit Money Banks.

The Durbin Watson Statistics of 2.42, shows that there is no autocorrelation problem. The absence of auto-correlation problem was further supported with the result of the diagnostic test, Breusch-Godfrey Serial Correlation LM test (see Table 12 below) which shows that the model is not suffering from serial correlation with the F-value of 0.7588 which is above 5% level of significance. Furthermore, the stability test shown in Figure 1 disclosed that the model is stable because it lies within the 5% boundaries.

Table 12
DIAGNOSTIC TEST FOR THE SHORT-RUN- THE AUTOREGRESSION DISTRIBUTED LAG (ARDL) MODEL

	F-statistic	**Obs*R-squared**
Hypothesis Three	0.7588	0.7233

Source: Author's Computation (2021)

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

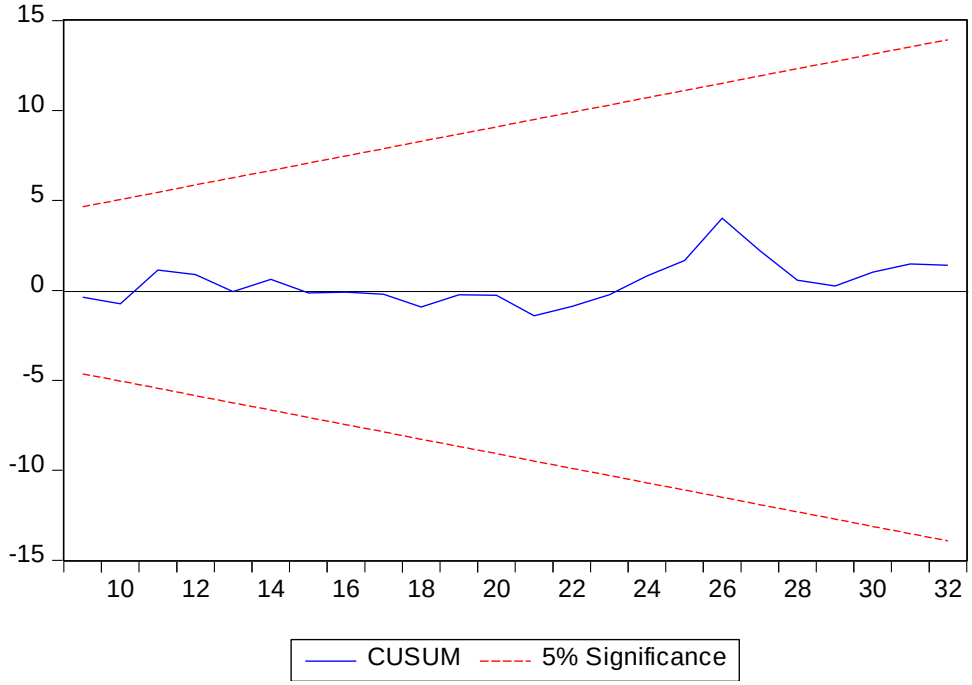

Figure 1
STABILITY TEST

DISCUSSIONS

The results from this study are discussed under the three study's specific objectives. Firstly, considering the effect which cash-less banking (proxy by TATMT, TPOST, TWEBT and TMPST) has on increased total number of fraud and forgery's cases in Nigeria's Deposit Money Banks (TNFFC), the results (see table 7) revealed that TATMT, TPOST and TMPST showed a negative and non-significant effect (at 5% significant level) on the TNFFC. While TWEBT showed a positive and significant effect on TNFFC. The meaning is that increase in TATMT, TPOST and TMPST do not contribute to the increased cases of fraudulent activities in the banking sector. This result could be attributed to the policy reduction in the high risks of using cash. The non-significant relationship disclosed in the result could be attributed to the fear of insecurity which many Nigerians exercised in using ATM, POS and mobile phone (TMPST) to carryout banking transactions which in turn reduced their patronages towards using the said channels. Also, it was revealed that increase in TWEBT significantly increased the cases of fraudulent activities in the banking sector. The positive and significant relationship that existed between TWEBT and TNFFC is deduced from the fact that internet has been the most vulnerable channel of cash-less banking to attempted cases of fraud; that is why cyber-crime always make lead headline in the front pages of most dailies in Nigeria. The more interesting fact here is that increased cases of frauds as a result of only one channel (WEB) does not render cash-less banking transactions insecure as perceived by many people. This is evidenced in the result (see table 7) when cashless banking variables are considered jointly, which affirmed that the introduction of cash-less banking in Nigeria has not significantly affected the number of fraud and forgery cases in Nigeria's Deposit Money Banks. This result is in agreement with the result of Maitanmi et al. (2013) (see table 2) and do not totally conform to our expectations in fraud triangle theory. In line with fraud triangle theory, we expected that the pressure of individual's financial needs to meet up with technology advancement in cash-less banking system would motivate many Nigerians to commit frauds thereby incessantly increasing the number of attempted frauds and forgeries

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

cases in Nigeria's cash-less banking era. This aspect of fraud triangle theory deviated with our result since the study revealed that the introduction of cash-less banking in Nigeria has not significantly affected the increased number of fraud and forgery cases in Nigeria's Deposit Money Banks.

Secondary, the empirical results on objective two (also hypothesis two) showed that cash-less banking in Nigeria has significantly affected the increased amount involved in attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks. Specifically, the study disclosed the existence of a positive and statistically non-significant relationship between TPOST, TMPST, TWEBT and TAIFF, while a non-significant negative relationship exists between TATMT and TAIFF. This result is partially in consistent with the findings of Ajayi (2014); Mohammed & Adams (2014) that have cyber-crime and security issues as one of the challenges of cash-less banking in Nigeria. The findings also collaborated our expectations based on the fraud triangle theory where the fraudster rationale for his crime. Bank staff feeling frustrated due to poor remuneration and inadequate working conditions may be induced to steal large amount from the bank or collide with outsiders to perpetrate fraud; while Outsiders' rationale that a lot of money are resided in the banks and just a little amount of fraud may not affect them. Consequently, the amount involved in fraud's cases in Nigeria's banks has continued to be on the increase.

Thirdly, the empirical findings on objective three (also hypothesis three) showed that the practice of cash-less banking in Nigeria has not significantly affected the increased actual loss to fraud and forgery in Nigerian Deposit Money Banks in the short run. This result could be attributed to the fact that Nigerian banks generally employed the necessary security measures to minimize the opportunity of the fraudsters to actualize their attempted/reported amount involved in fraud's incidences. Considering the cash-less banking variables individually, the results showed that TATMT and TWEBT have positive and non-significant relationship with TALFF; while a non-significant negative relationship exists between TPOST, TMPST and TALFF. The positive and negative signs in the result for TATMT, TWEBT and TPOST, TMPST respectively could be attributed to the presence of more strong security measures to cash-less banking transactions via POS, MPS than through ATM and WEB. The non-significance in the results above is deduced from the fact that the results reflected short run effect. This results collaborated with our expectations based on the third element (opportunity) of the fraud triangle theory that induced frauds. The rising or declining spate of actual loss to frauds in the banks depends on the opportunity given to fraudsters to commit frauds and induce financial losses to the victims.

The result of this study is in agreement with the result of Martin et al. (2014) that disclosed among other things that the introduction of cash-less economy in Nigeria will reduce high security and safety risks, including its stability in curbing banking related corruptions and foster transparency. Specifically, this study's result is partially in consistence with the view of Ezuwore et al. (2014) that posited that most ATM locations are not secure and thus paved way for the criminals to carry out their criminal acts.

CONCLUTION AND RECOMMENDATIONS

Based on the empirical findings of this study, it is generally concluded that lack of total implementation of cash-less banking among Nigerians due to fear of insecurity of cash-less banking transactions is uncalled for as cash-less banking is even more secure than the previously practiced cash-based banking system. Specifically, the study concluded that the introduction of cash-less banking in Nigeria has not significantly affected the number of fraud and forgery cases in Nigeria's Deposit Money Banks. It was further concluded that even though cash-less banking in Nigeria has significantly affected the increased amount

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

involved in attempted/reported fraud and forgery incidences in Nigerian Deposit Money Banks, the opportunity to actually commit the frauds reported as attempted amounts involved in fraud incidences and actually inflict financial losses to banks and the victims was drastically minimized as the study revealed that the practice of cash-less banking in Nigeria has not significantly affected the increased actual loss to fraud and forgery in Nigerian Deposit Money Banks. However, cash-less banking in Nigeria is not insecure only that Nigeria needs to improve more on security measures of some cash-less banking channels like ATM and WEB.

Consequence upon the above conclusion, the study recommended a collaboration and cooperation of various stakeholders like the government, bank's customers and financial institutions in improving on the security measures of cash-less banking channels in Nigeria. Specifically;

Government Should Ensure

1. The allocation of adequate funds for the establishment and equipping (with information and communication technology infrastructures) of special electronic fraud (cyber-crime) unit within the Policy force since Nigeria Police force is the largest security agency in the country; as well as training and retraining the Officers serving under the unit on the e-fraud policing. This will aid them in becoming efficient e-fraud investigators and in managing effectively, the digital forensic laboratory.
2. The provision of uninterrupted power supply. Even though that the electricity in Nigeria has been privatized, government should ensure effective supervision of those electricity distribution companies in Nigeria in order to enhance the epileptic power supply in the country. This will go a long way in reducing the incidence of stealing at various ATM location point, more especially at night due to conducive environment created by power outage to the criminals.
3. Provision of employment opportunities to the public especially the youths. This does not only involve government jobs but also include government empowering the youths for self-employment. This will aid to engage their mind in a more profitable and legal decisions other than the fraud.

Every Banks' Customer Should

1. Keep his/her online and ATM transaction credentials (user ID, password, token/PIN) confidential.
2. Never install a payment application sent through e-mail. Such applications should be installed only from the online stores, examples App store, play store, Google store etc.
3. Report any bank official who requests, via e-mail SMS or voice message, his/her online transaction credentials.

Financial Institutions Should Ensure

1. Continuous review and security upgrade of its electronic platforms and services.
2. E-fraud awareness as part of customer on boarding. Customer awareness is a very critical issue that needs to be addressed on a regular basis and handled with heightened sensitivity, until customers know that they are also responsible for protecting their financial transactions from fraud plied through electronic means.

REFERENCES

Adesuyi, F., Adepoju, S., & David, R. (2013). A Survey of ATM Security Implementation within the Nigerian Banking Environment. *Journal of Internet Banking and Commerce, 18*(1) 01-16

Ajayi, L.B. (2014). Effect of cashless monetary policy on Nigerian banking industries: issues, prospects and challenges. *International Journal of Business and Finance Management Research, 2*, 29-41. Retrieved April 20, 2021, from http://www.bluepenjournals.org/ijbfmr/pdf/2014/November/Ajayi.pdf

Akhalumeh, P.B., & Ohiokha, F. (2012). Nigeria's cashless economy: the imperatives. *International Journal of Management and Business Studies, 2*(2), 31-36.

Ashike, H.M. (2019). The cashless policy journey into March 31, 2020. Retrieved October 16, 2020, from https://businessday.ng/banking-finance/article/the-cashless-policy-journey-into-march-31-2020/

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Awelewa, G. (2016). A changing payments landscape: the security challenge. The Nigeria Electronic Fraud Forum Annual Report. Retrieved October 12, 2020, from https://www.cbn.gov.ng/Out/2017/CCD/A%20CHANGING%20PAYMENTS%20ECOSYSTEM%20NeFF%202016%20Annual%20Report.pdf.

Central Bank of Nigeria. (2011). Money Market Indicator & Money and Credit Statistics. CBN Statistical Bulletin. CBN publications.

Central Bank of Nigeria. (2012). Cash-less Nigeria. Retrieved September 26, 2020, from www.cbn.gov.ng.

Efobi, C.A. (2019). The guide to charges by banks, other financial and non-bank financial institutions. CBN financial policy and regulation department, Retrieved April 9, 2021, from www.cbn.ng>out>CCD.

Ekwueme, C.M., Egbunike, P.A., & Okoye, A.P. (2013). An empirical assessment of the operational efficiency of electronic banking: evidence of Nigerian banks. *Review of Public Administration and Management, 1*(2), 108-138.

Elechi, A.C., & Rufus, A. (2016). Cashless policy in Nigeria and its socio-economic impacts. *Public Policy and Administration Research, 6*(10), 16-22. Retrieved March 26, 2021, from https://core.ac.uk/download/pdf/234669973.pdf

Ezeudu, I.J., & Anyanwu, U.N. (2014). Analysis of the e-payment system in Nigeria financial sector. *Esut Journal of Accountancy, 5*(1), 82-91.

Ezuwore-Obodoekwe, C.N., Eyisi, A.S., Emengini, S.E., & Chukwubuzo, A.F. (2014). A critical analysis of cashless banking policy in Nigeria. *IOSR Journal of Business and Management, 16*(5), 30-42.

Fatokun, D. (2017). CBN Reviews Charges on Deposits and Withdrawals. Retrieved February 27, 2017, from https://www.proshareng.com/news/mobilemoney/CBN-Reviews-charges-on-Deposits-and-withdrawal/33831.

Galadima, T.O., Akinyemi, I.O., & Asani, E.O. (2014). The impact of knowledge-based trust on the adoption and acceptability of cashless economy in Nigeria. *International Journal of Computer Science and Information Technology, 6*(2), 171-180.

Humphrey, D.B., Pulley, L.B., & Vesala, J.M. (1996). Cash, paper and electronic payments: a cross country analysis. *Journal of Money, Credit and Banking, 28*(4), Retrieve January 2, 2017, from http://www.JStor.org/.

Ighoakpo, E. (2015). Imporving security of our cyber-envrionment. Central Bank of Nigeria Electronic Fraud Forum Annual Report. Retrieved May 23, 2017, from https://www.cbn.gov.ng/Out/2016/CCD/NeFF%20Annual%20Report%202015.

Irechukwu, G. (2000). Enhancing the Performance of Banking Operations through Appropriate Information Technology in Nigerian Banking Industry. Ibadan- Nigeria, Spectrum Books.

James, M., & Roger, V. (2016). What digital finance means for emerging economies. Retrieved August 2, 2020, from https://fortune.com/2016/10/24/digital-finance-emerging-economies/.

Jhingan, M.L. (2003). Macro-Economic Theory (11th ed.). India, VRINDA Publications (P) LTD.

Kanu, C., & Isu, I.G. (2016). Security challenge, bank fraud and commercial bank performance in Nigeria: An evaluation. *Journal of Business and Management, 5*(2), 1-21.

Maitanmi, O., Awodele, O., Ogbonna, C., & Osundina, S. (2013). Cashless society: Drive's and challenges in Nigeria. *International Journal of Information Sciences and Techniques, 3*(2), 1-11.

Martin, C.E, Nnamani, J.N, Marire, M.J., & Mgbodile, C.C. (2014). The impact of central bank of Nigeria cashless policy on Nigerian economy. *Journal of Business and Management, 16*(12), 84-95.

Mohammed, I.K., & Adam, G.A. (2014). Assessment of the factors affecting the prospects and implementation of cashless policy in Borno state, Nigeria. *International Journal of Advanced Research in Statistics, Management and Finance, 2*(1), 1-14.

NDIC (2018). Annual Report and Statement of Account. Retrieved June 29, 2020, from https://ndic.gov.ng/wpcontent/uploads/2019/09/NDIC-2018-ANNUAL-REPORT.pdf.

Nigeria Electronic Fraud Forum. (2016). Annual Report. Retrieved October 12, 2020,from https://www.cbn.gov.ng/Out/2017/CCD/A%20CHANGING%20PAYMENTS%20ECOSYSTEM%20NeFF%202016%20Annual%20Report.pdf

Nigeria Electronic Fraud Forum. (2018). Annual Report. Retrieved October 12, 2020, from https://www.cbn.gov.ng

Ochei, A.I., Agwu, E., Achugamonu, B.U., & Isibor, A.A. (2015). Fraud, unemployment and cashless system: A paradox or reality in Nigeria. British *Journal of Economics, Finance and Management Sciences, 10*(1), 29-42.

Odior, E.S., & Banuso, F.B. (2012). Cashless banking in Nigeria: challenges, benefits and policy implication. *European Scientific Journal, 8*(2).

Okojere, S. (2018). Emerging fraud threats: an evaluation of the industry cybersecurity posture. Nigeria Electronic Fraud Forum Annual Report, CBN, Nigeria. Retrieved October 12, 2020, from https://www.cbn.gov.ng.

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.

Okoye, A.P. (2018). Effect of cashless banking on the unemployment rate in Nigeria *Asian Journal of Economics, Business and Accounting, 6*(4). 1-18.

Okoye, P.V.C., & Ezejiofor, R. (2013). An appraisal of cashless economy policy in development of Nigerian economy. *Research Journal of Finance and Accounting, 4*(7). 237-252.

Omotunde, M., Sunday, J., & John-Dewole, A.T. (2013). Impact of cashless economy in Nigeria. *Gruner Journal of Internet, Information and Communication System, 1*(2). 40-43.

Onwumere, J.U.J. (2009). Business and Economic Research Methods. Enugu- Nigeria, Vougasen Limited.

Osabuohien, E.S.C. (2005). ICT and Nigeria banks reforms: analysis of anticipated impact in selected banks. *Global Journal of Business Research, 2*(2). 67-76.

Osazevbaru, H.O., Sakpaide, E.J., & Ibubune, R.O. (2014). Cashless policy and Banks' profitability in Nigeria. *European Journal of Accounting and Auditing and Finance Research, 2*(10), 1-12.

Tee, H., & Ong, H. (2016). Cashless payment and economic growth. *Financial Innovation, 2*(4). 1-9. Retrieved April 13, 2017, from https://jfin-swufe.springeropen.com/track/pdf/10.1186/s40854-016-0023-z.pdf

Umanhonlen, O.F., Umanhonlen, I.R., & Omoruyi, K.I. (2015). Appraisal of the impact of e-banking and cashless society in the Nigerian economy. Management and *Economics Research Journal, 1*, 34-45.

Uzoagulu, A.E. (1998). Practical guide to writing research project report in tertiary institutions. Enugu- Nigeria, John Jacob's Publishers Ltd.

Citation Information: Ozoji, A.P, Iwara,O.E, Ezuwore-Obodoekwe,C.N , Inyada,S.J, Ezechukwu B.O, Ayem-Fella,T.F, Ezuma C.O, Ebisi L.N, Okoroiwu, K.L (2021). Insecurity of cash-less banking transactions: an empirical evidence from nigerian banks. *Academy of Accounting and Financial Studies Journal, 25*(5), 1-23.