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Articles

Altman's Z-Score Discriminant Analysis and Bankruptcy Assessment of Banks in Nigeria

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***Abstract*:** This study aims to determine the distress level subsisting in the bridge banks set up by the Central Bank of Nigeria in 2011 to take over the nationalized banks; and the 2011-classified unsound banks using the Altman's discriminant analysis model. Secondary data from four sampled classified distressed and unsound banks from the declared six for two years preceding their nationalization and two years after using the stratified sampling technique were analysed using the Alman Z-score discriminant analysis. Results shows that there are marginal improvements in the financial status of the sampled banks between 2010-2013 but they are still in a bankrupt position with Union Bank Plc, Wema Bank Plc, Keystone Bank Ltd and Mainstreet Bank Ltd having a Z-score of -0.56, 0.417, 1.5 and 0.45 respectively at 2013, all below the minimum threshold of 2.675 for classification of a bank as sound and non-bankrupt. This implies that the general broad-based monetary policy measures introduced by the CBN for the financially distressed bank are not much effective in resolving their financial crises in general, making necessary the introduction of bank-specific monetary and financial policies to solve identified bank-specific problems, and the CBN directly supervising these banks with daily monitoring of their operations.

***Key words*:** Bankruptcy, discriminant analysis, failed banks, financial crises, Z-score

1.0 Introduction

Prediction of corporate failures is rife in foreign literature, but non-existent in Nigeria except that by the Central Bank of Nigeria carried out in the course of performing its statutory functions. To Yildiz and Akkoc (2009), repeated global financial crises have increased corporate bankruptcies necessitating its prediction. Erdogan (2008) noted that moves by a country at the liberalising its financial market (as witnessed during the recent bank consolidation exercise in Nigeria) opens such economies, increasing its fragility; making it vulnerable to further global economic

crises. Yildiz and Akkoc (2009)[b] contended that monitoring and controlling of the banking sector in any economy is important for maintaining confidence in such a financial system. This to them necessitates its tight regulation to make it healthy. To Lanine and Vennet (2006), the healthier a country's banking system, the greater will be investors' confidence; with attendant increases in private savings and allocation of credit facilities to relevant productive sectors with positive effects on economic growth. The occurrence of bank bankruptcies is seen to have a greater effect on the economy than bankruptcies in other sectors. Yildiz and Akkoc (2009)[a] observed that its effect exceeds bank stakeholders extending to the entire economy.

Varied reasons had been adduced for corporate bankruptcies. Sullivan et al (1998), Argentin(1997), Blazy and Combier (1997) and Lussier (1995) attributed corporate failures to accidental factors (malfeasance, death of leader, fraud, disasters, litigation), market factors (loss of market share, failure of customers, inadequate products), financial threats (undercapitalization, cost of capital, default on payment, loan refusal), macroeconomic factors of fragility (decline in demand, increased competition, high interest rate), information and managerial problems (incompetence, prices), costs and production structures, and strategy failures. The immediate and long-run effects of these are evident in corporate financial positions measurable using corporate liquidity status indicators: current and acid-test ratios; corporate financial risks measurable using the gearing ratios; and firm profitability measurable using operating profits to sales ratio. du Jardin (2009) noted that

causes of corporate failures are predictable over time and preventable. To Perez (2002), these symptoms are observable from final accounts of such firms. Assets and credit evaluation measures were introduced by the Central Bank of Nigeria (CBN) to identify early enough bankruptcy symptom in banks in Nigeria, in addition to frequent liquidity bailouts of these banks by the apex bank. The continuous negative liquidity positions and toxic nature of bank assets resulted in the takeover of three deposit money banks (AfriBank Nig Plc, Spring Bank Nig Plc, and BankPHB Plc) by the CBN in 2011 as they were financially distressed. Three bridge banks: Mainstreet Bank Ltd, Enterprise Bank Plc and Keystone Bank Ltd were set up to take over their operations by the CBN (CBN 2013). Three other financially unsound banks: Oceanic Bank Plc, FinBank Plc and Intercontinental Bank Plc were acquired by other banks within this period. Wema Bank Plc and Union Bank Plc were given bailouts by the CBN to resolve marginally their financial problems; with additional finances from rights issues. How financially sound are these bridge and unsound banks since the administrative and monetary intervention of the CBN in 2011? The remaining part of this paper is divided into: objectives/justification for the study, research hypothesis, theoretical framework and review of literature, methodology, research results and policy implications of findings, conclusions and recommendations.

1.2 Research objective/justification for the study

The objective of this study is to determine the financial distress level of the three bridge banks set up to take over the three nationalized banks in

2011 and three other non-nationalized banks classified as unsound by the CBN in 2011 using the Altman's discriminant analysis model. The existence of claims and counter claims in financial literature of political undertone underlying the takeover banks nationalized by the CBN in 2011 without prior determination of their distress levels and the ineffectiveness of the takeover made this study apt to determine the financial status of the nationalized banks at the time of their takeover; as to whether they were distressed or not and the change in financial status if any after the takeover.

1.3 Research hypothesis
The following hypothesis is tested in this study:

H_o: The 2011-classified unsound deposit banks are not yet financially sound, periods after their takeover.

H_1: The 2011-classified unsound deposit banks are financially sound, periods after their takeover.

2.0 Review of literature
2.1 Theoretical framework
Globalization and cross-border financial activities transfer financial crises across borders making national monetary control and administration difficult and cumbersome. Advanced theories and models offer monetary regulators means of assessing the liquidity and financial positions of deposit money banks within its control and introduce corrective measures when distress symptoms are identified. Distress predictions seems a viable option for monetary regulators as identifiable-potential distress cases are corrected to avert bank financial crises with its contagion effect on other deposit money banks in the country and negative effects on the country's economy. Models (Altman's z-score discriminant analysis, neural-fuzzy model, factor analysis, logistic regression analysis, multivariate regression analysis and the artificial neural network) abound in bankruptcy literature for predicting corporate failures. These models have successfully predicted corporate failures firms within and across industries the world over with the Altman (1968) z-score analysis as the most successful (Arora and Saini, 2013; Martin et al, 2011; Jordan et al, 2010; Bellovary et al, 2007).

2.2 The Altman Z-score model
In a bid to determine in advance the likelihood of corporate bankruptcies, Altman (1968) developed the Z-score discriminant model which uses a multivariate approach based on the values of both accounting and categorical variable measures. To him, as failed companies exhibit economic trends and proportions different from financially healthy firms, accounting and analysis of categorical measures' values need to be combined and weighted to produce another measure (standard credit risk). This he added, make better discrimination between failed and healthy firms. The model uses the multiple discriminant analysis to analyse variables to maximize the difference between group differences while maximizing differences within the group. To Kyriazopoulos et al (2012), this model uses a sequential process in which the processor includes or excludes variables using established statistical criteria with the optimal Z-score equivalent to:

$ZETA_c = \{Inq_1c_1\}/q_2c_2$

where q_1 is prior bankruptcy and q_2, non-bankrupt. C_1 and c_2 are costs of type 2 and 1 errors. Useable ratios for determining Z-score are:

i.   Short-term debt/book value of equity (leverage)

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ii. Cash/total assets (liquidity)
iii. Earnings before interest and taxes/total assets (profitability)
iv. Retained earnings/total assets (cover)
v. Earnings before interest and taxes/interest paid.

In Altman's (1983, 1993) revised model, five ratios were determined as jointly the best discriminators between business viability and failure. In the revised model, Altman (1983) required the use of: working capital/total assets (X1), retained earnings to total assets (X2), EBIT/total assets (X3), market value of equity/book value of total debt (X4) and sales /total assets ratio (X5); with Z as the overall index (Altman's score). He posited that the final discriminant function for public firms is:
$Z = 0.012X1 + 0.014X2 + 0.033X3 + 0.006X4 + 0.999X5$; and

for private firms, a re-estimation of the model substituting the book value of equity for market value in X4, giving the revised Z-score model:
$Z = 0.717X1 + 0.847X2 + 3.107X3 + 0.420X4 + 0.998X5$

With X4= book value of equity/book value of total liabilities.

Firm overall Z-score of <2.675 indicates that is or that there is 95% chance of such a firm being bankrupt within twelve months. In practice, Altman (1968) argued that Z scores of $\geq 1.81 \leq 2.99$ indicate grey area; values of < 1.81 show that the firm is bankrupt, and Z-score of > 2.99 indicates that the firm is non-bankrupt. Arora and Saini (2013) and Martin et al (2011) argued that the empirical results of Altman's (1968) model and subsequent studies based on this model had widely, successfully and consistently predicted corporate failures, and has proved effective in predicting corporate bankruptcies across industries in various countries over different periods.

Altman Z-score model and corporate bankruptcy predictions

Bank bankruptcy indicators and predictions are rife in literature. Detailing indicators of corporate failures based on importance, du Jardin (2009) argued that financial variables (measured by financial ratios) obtainable from the firm statement of financial positions and comprehensive incomes are best used. To him, these ratios express the relationship between two variables either within a statement or between variables in both statements increasing the coverage of most corporate failure determining factors. In their study, Salmi and Martikainen (1994) used the financial data of different firms to control for size effect. Horrigan (1983) contended that non-controlling for size is itself positive on any study, as size itself may be a variable of interest in explaining some financial characteristics of firms. To du Jardin (2009), use of ratios makes interpretation accurate and comparable. Adding, Lev and Sunder (1979) noted that financial ratio data rely on the proportionality between the numerator and the denominator. Findings by Back et al (1994) showed that models built with financial ratios alone perform better than those built with common financial variables. This argument was substantiated by Pompe and Bilderbeek (2005), Perez (2002), Atiya (2001), Mossman et al (1998) and Keasey and Watson (1987). Relating bankruptcy to stock returns, Beaver (1968) found that equity returns predict bankruptcy earlier that financial ratios in general. Furthering, Clark and Weinsten (1983) and Altman and Brenner (1981) argued that stock market indicates bankruptcy at least a year before it occurs. To

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Aharony et al (1980), volatility in firm-specific return increases as bankruptcy converges.

From a monetary perspective, Hauser and Booth (2011) opined that accurate assessment of the probability of bankruptcy can lead to sound lending practice and better fair value of interest rates that reflect credit risks; adding that bankruptcy could be predicted in all sectors. The need for distress prediction in the financial sector is more pronounced as credit or counterparty risk assessment by rating agencies are reactive and not predictive. These predictions, to Hauser and Booth (2011) are feasible as bankrupt firms are outliners from the perspective of a group of healthy firms. Commenting on the spiral effects of bank bankruptcies, Vaziri et al (2012) noted that assets' market will experience a high level of volatility through huge movements in the exchange rates, interest rates and commodity prices; recommending that banks and other financial institutions need to add risk management to their investment decisions. In assessing bank financial distress, Betz et al (2013) suggested complimenting bank-specific vulnerabilities with indicators for country-level macro-financial imbalances and banking sector vulnerabilities.

On causes of bank bankruptcy in Europe, USA and Asia, Vaziri et al (2012) argued that changes in market, policy, economy and political influences were responsible factors, with these bankruptcies transcending national boundaries. The global crises, they added, resulted in mergers, acquisitions, takeovers, part nationalization and liquidation; attributing the crises in detail to sub-prime mortgages, collateralized debt obligations, frozen credit markets and credit swap defaults reflected in excessive lending concentrations, deteriorating financial ratios, tracking loan recoveries to gross loan charge-offs, deposit rates higher than market rates, off-balance sheet liabilities, delayed financials, change in auditors, change in management, use of political influence, rumors in the money market, share price volatility and deterioration of the economy. To Beltratti and Stulz (2009), poor bank and country-level governances, poor country-level regulation, poor balance sheet status and low profitability contributed to the poor performances of banks across countries. Specifically, Kiff and Mills (2007) attributed the banking crises in the US in 2000's to increasing inflation in the housing market. Adding, kwan and Eisenbeis (1995) noted that under-capitalised banks took high risk which they could not absorb, supporting earlier arguments by Kim and Santomero (1988) and Koehn and Santomero (1980). Commenting, Vilen (2010) noted that though many banks in the US failed in 1985, the problem originated from the 1960's with deregulation of the US banking sector to the early 1980's. This to him, increased competition among banks resulted in the introduction of sharp practices in the sector and 'cooking' of the books, both negatively affecting bank profit. The gravity of the crises was most felt in 2008 with the failure of Lehman Brothers which revealed the seriousness and depth of the financial crises. Using bank loan portfolios, Gonzalez-Hermosillo (1999) concluded that banks with a high level of commercial and industrial loans relative to total loans suffered more severe losses than banks with more conservative loans. To reduce risk exposures, Furlong and Keely (1990)

recommended an increase in banks' capital base. Governments across the globe also introduced bail-outs to banks to curtail the negative effects of bank bankruptcies on their economies. These recurring bankruptcies make necessary the continual assessment of the financial status of deposit money banks operating in a country.

Empirical tests of models' efficacies in predicting corporate failures in US, Europe and Asia abound in bankruptcy literature. These models are the Altman z-score, multiple discriminant analysis, the logistic analysis, the artificial neural network, factor analysis and the multiple regression analysis. Erdogan (2008) used the logistic regression model with relevant ratios which predicted bank bankruptcies between 1997 and 1999 in Turkey. Using the same set of banks during the period 2000 – 2001, Erdogan (2008) concluded that the neurofuzzy prediction model outperforms the multiple discriminant analysis (MDA) and the artificial neural network (ANN) prediction models in predicting bank failures in Turkey. Beaver (1966) used the financial ratios, Sinkey (1975) the MDA, Meyer and Pifer (1970) the multiple regression analysis (MRA), Martin (1997) and Ohlson (1980) the logistic regression analysis, West (1985) the factor analysis; Cielen et al (2004) and Kao and Liu (2004), Tan and Diharjo (2001), Spicegood and Clark (2001), Alam et al (2000), Yang et al (1999), Zhang et al (1999), Bell (1997), Tsukkuda and Baba (1994), Wilson and Sharda (1994), the artificial neural networks; and Lanine and Vennet (2006) and Kolari et al (2002) the trait recognition model. Bellovary et al (2007) concluded from their study of bankruptcy prediction results from 1930 to 2007 that the Altman's (1968) MDA is more accurate; cautioning against the use of multiple factors in any bankruptcy prediction model as two factors are capable of predicting firm distress as with model using 21 factors. This argument is supported by findings of Pang and Kogel (2013) from their study of US retail business with a 97.5% accuracy of Altman's (1968) model predictions.

Pandey (2010) and Weston and Brigham (1975) argued that ratios prepared from values in annual reports (which may be subjected to manipulations), may not seem an ideal tool for corporate comparison especially of firms of different sizes as ratio analysis do not recognize firm size. As variables' values are combination of other variables, Weston and Brigham (1975) noted that variations in values within a given set of variables changes the total value of that variable with effects on the ratio values; contending that ratios are 'snapshots' of the picture at a point in time but trends in motion may exist rapidly, eroding a relatively good current position. With these drawbacks, both concluded that ratio analysis is still the best for corporate assessments as it relates more variables in different statements.

3.0 Research methodology
3.1 Population for the study
The population for this study is the 21 deposit money banks in Nigeria.
3.2 Study samples and sampling technique
The two-stage sampling technique was used for this study.

Stage 1: the six CBN declared unsound banks in 2011 were purposively sampled.

Stage 2: four of the CBN declared unsound banks in 2011 were sampled using the stratified sampling technique as they occupy the top strata of unsound banks in Nigeria.

Thus two of the existing three bridge banks (Keystone Bank Ltd and the then Mainstrreet Bank Ltd) set up by the Central Bank of Nigeria in 2011 to take over the nationalized banks: Bank PHB Plc and Afribank Plc respectively; and Wema Bank Plc, and Union Bank Plc are used for this study. The sampled banks were suddenly declared unsound by the Central Bank of Nigeria without any publicly known signs of financial crises to the shock of shareholders and the banking public.

3.3 Sources of data
Data for this study are ratios computed from secondary data obtained from published annual reports of sampled 2011-classified unsound banks on short-term debt/book value of equity (leverage), cash/total assets (liquidity), earnings before interest and taxes/total assets (profitability), retained earnings/total assets (cover), and earnings before interest and taxes/interest paid.

3.4 Validity and reliability of data
Secondary data from annual reports of sampled banks used for this study were prepared to meet the requirements of the Companies and Allied matters Act, 1999, the Banking Act, the Nigerian Stock Exchange annual information disclosure requirements (as sampled unsound banks are/were quoted banks), and audited by their external auditors making data obtained therefrom valid and reliable.

3.5 Data analysis technique and model justification
To determine the existence of financial distress in the two sampled bridge banks two years prior to their takeover by the CBN in 2011 and two years after, and two other 2011 non-nationalized unsound banks, we use the Altman's z-score discriminant analysis model on the relevant Altman (1968) z-score ratios computed from their annual reports from 2010-2013. This model was successful in bankruptcy prediction studies by Kyriazopoulos et al (2012), Sinkey (1975), Meyer and Pifer (1970), and Beaver (1966). Salmi and Martikainen (1994) argued that corporate financial data are preferable for use in models for predicting corporate failures; suggesting that such data should be financial ratios, making its use in this study accurate. Specifically, this study uses ratios capable of determining the financial health of firms (liquidity and profitability ratios) as used in similar studies (du Jardin, 2009; Back et al 1994, Salmi and Martikainen, 1994; Odom and Sharda, 1990; Zavgren, 1985; Zmijewski, 1984; Lev and Sunder, 1979; and Altman, 1968). The data envelopment analysis (DEA) and the stochastic frontier analysis (SFA) make possible the empirical determination of the production efficiency of decision-making units; and benchmarking in operations management. Sherman and Zhu (2013) referred to DEA as "balanced benchmarking". Studies by Seiford and Thrall (1990), Charnes et al (1978), Brockhoff (1970) and Farrell (1957) showed the efficiency of the technique in benchmaking corporate performances using the variables: number of employees, service quality, environmental safety and fuel consumption. These variables are cost minimizing determinants affecting corporate profits and do not determine the liquidity status of firms and corporate financial distress; making it inappropriate for this study.

Values for z-score variables' components and overall z-score for sampled banks are shown in tables 1-4

where WC= net working capital, TA=total assets, RE=retained earnings, EBIT=earnings before interest and taxes, MVE=market value of equity, BVD=book value of debt, and T=turnover.

Table 1: Wema Bank Plc annual Z-scores

z-score variables	2013	2012	2011	2010
WC/TA	-0.71	-0.87	-0.53	-0.37
RE/TA	-0.11	-0.15	-0.16	-0.15
EBIT/TA	0.0031	0.022	-0.033	0.06
MVE/BVD	0.34	0.11	0.13	0.13
T/TA	0.06	0.07	0.12	0.10
Z	0.417	-0.818	-0.473	-0.23

The Altman z-score values for Wema Bank Plc improved from steadily from -0.23 in 2010 to +0.417 in 2013 (table 1).

Table 2: Union Bank Plc annual Z-scores

z-score variables	2013	2012	2011	2010
WC/TA	-0.49	-0.50	-0.49	-0.82
RE/TA	-0.29	-0.30	-0.34	-0.29
EBIT/TA	0.066	0.026	-0.08	0.10
MVE/BVD	0.11	0.10	0.10	0.03
T/TA	0.04	0.02	0.09	0.14
Z	-0.56	0.246	-0.72	-0.84

The Altman z-score values for Union Bank Plc for the study period fluctuated from -0.84 to -0.72 to +0.246 and -0.56 (table 2).

Table 3: Mainstreet Bank Ltd annual Z-scores

z-score variables	2013	2012	2011 (As AfriBank Nig Plc)	2010(As AfriBank Nig Plc)
WC/TA	-0.32	-0.39	-0.41	-0.40
RE/TA	0.02	0.01	-0.37	-0.501
EBIT/TA	0.03	0.07	0.09	0.091
MVE/BVD	0.58	2.66	1.10	1.17
T/TA	0.14	0.16	0.10	0.12
Z	0.45	2.51	0.51	0.48

Mainstreet Bank Ltd's Altman z-score for the study period also fluctuated, increasing from +0.48 in 2010 to +0.51 in 2011 to +2.51 in 2012, declining to +0.45 in 2013 (table 3).

Table 4: Keystone Bank Ltd annual Z-scores

| z-score variables	2013	2012	2011	2010
WC/TA	-0.50	-0.53	-0.55	-0.70
RE/TA	0.03	-0.02	0.02	0.00
EBIT/TA	0.07	0.04	0.03	-0.58
MVE/BVD	0.21	0.17	0.14	0.05
T/TA	1.69	1.59	0.08	-0.43
Z	1.50	1.25	-0.28	-0.26

The Altman z-score for Keystone bank Ltd increased steadily from -0.26 in 2010 to +1.50 in 2013 (table 4).

4.0 Research results and policy implications of findings

The Altman Z-score for the four sampled banks for the four were <1.99 showing that they were in a bankrupt position throughout the study period. Thus we accept H_o i.e. the 2011-unsound banks are not yet financially sound. The Altman Z-score for Wema Bank Plc worsen from -0.23 in 2010 to -0.473 in 2011, and further to -0.818 in 2012, increasing significantly to +0.417 in 2013 (fig 1); but still below the minimum threshold of 2.675 indicating that the bank is still in a gross bankrupt position which portends danger to Nigeria's financial system. Union Bank Nig Plc had a fairly improved result (though all negatives) from 2010-2013 with the Altman Z-score improving from -0.84 in 2010 to -0.72 in 2011, -0.654 in 2012 and -0.56 in 2013 (fig 1). The negative values for the years show the poor financial state of the bank in a grossly bankrupt position.

Fig1: Altman Z-score trend of sample banks
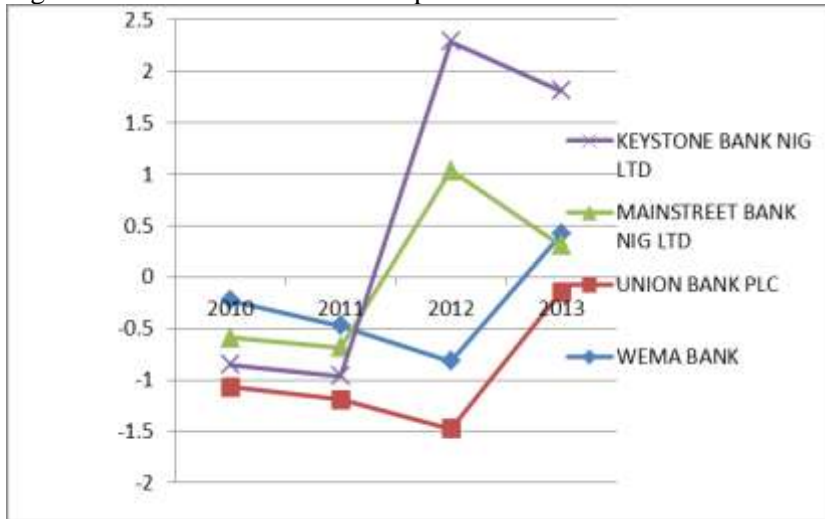
Keystone Bank Ltd (formerly BankPHB Plc) improved from a negative Z-score value of -0.26 in 2010 and -0.28 in 2011 before its takeover by the CBN to +1.25 in 2012 and +1.50 in 2013 after the takeover (fig 1). Though still in a bankrupt position, the positive results after the takeover shows improved the financial status of the bank which seemed attributable to the exercise of this administrative function by the CBN with attendant spiral effects on the financial sector. Mainstreet Bank Ltd (formerly AfriBank Nig Plc) had a steadily improved result from 2010 and 2011 of +0.48 and +0.51 respectively before its takeover by the CBN to +2.51 (in grey area of the Altman Z-score map) in 2012 which showed a positive effect of the takeover by the CBN on the financial situation of the bank. The financial situation of the bank worsened in 2013 with the fall of the Altman Z-score to +0.45 (fig 1), indicating the deepening the bankruptcy crisis of the bank.

The two banks taken over by the CBN AfriBank Nig Plc and BankPHB Nig Plc showed improved financial status after the CBN takeover (though were still bankrupt) indicating the effectiveness of the performance of the regulatory

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functions by the CBN on the deposit money banks with positive effects on the banks with positive spiral effects on the financial sector of the Nigerian economy. Two distressed banks at 2011: Wema Bank Plc and Union Bank Plc not taken over by the CBN remained in a grossly bankrupt position (with Altman z-score <1.99 for the study period) exposing the error of the apex bank in 2011 with its non-takeover of both banks to instill administrative and financial discipline, and reverse the financial distress of both banks. The bankrupt positions of both banks with their continuous existence portends danger to Nigeria's financial sector because of the contagious effects of these banks on other banks and the entire financial sector.

5.0 Conclusions and recommendations

From this study, we conclude that 4 of the 21 deposit money banks in Nigeria: Wema Bank Nig Plc, Union Bank Nig Plc, Mainstreet Bank Nig Ltd (formerly Afribank Nig Plc) and Keystone Bank Nig Ltd (formerly BankPHB Plc)

declared financially distressed by the CBN in 2011 are still in a grossly poor financial state, are unsound and bankrupt. The failure of the general broad-based monetary policies introduced by the CBN for these banks make necessary the introduction of bank-specific monetary and financial policies to solve identified bank-specific problems, and the direct supervision of these banks by the CBN with daily monitoring of their operations.

To avert the negative financial effects of these banks on the banking public, economic development of Nigeria and contagious effects on other banks in the sector and financial system, the apex bank should improve on and regularly assess the financial status of deposit money bank in Nigeria (especially these four banks), takeover Union Bank Plc and Wema Bank Plc and turn around their financial status as fairly done with Keystone Bank Ltd and Mainstreet Bank Ltd; and suspend the proposed sale of the nationalized banks until they are financially sound.

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Customer Engagement: A Framework for Assessing Brand Loyalty Behaviour in Hotels Industry

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Abstract: Engagement plays a critical role in strategic marketing models development. However, marketing experts seem implicitly to accept that marketing efforts contribute in some way to brand loyalty. Using new marketing activity, this article explores the link between marketing actions and brand loyalty behavior. In particular, the author develop a conceptual model arguing that customer engagement has an effect on brand loyalty. The results from empirical study show strong support for the effect of customer interactivity, customer involvement and customer support on brand loyalty behavior within the hotel service sector.

Keywords: Brand loyalty, Customer engagement, Customer interactivity, Customer involvement, Customer support.

Introduction

Several scholars have renewed interest in brand loyalty behavior (So, Andrew & Yap, 2013; Meinyk & Bijmolt, 2015; Boris, 1999). Brand loyalty in marketing consist of a customer's devotion, bond and commitment to repurchase and continue to use a brand product or service overtime, regardless of changes with competitors pricing or changes in external environment (So, Andrew and

Yap, 2013). A critical factor of building brand loyalty is developing a connection or relationship between the consumer and the brand. However, loyalty consists of attitudinal and behavioural perspectives. Attitudinal loyalty relates to the customers willingness to purchase product or service from the brand at any reasonable cost. Behavioural loyalty is the re-purchasing (Melnyk and Bijmolt, 2013). Brand loyalty exists when

customers have a relative attitude toward the brand which is then exhibited through repurchase behavior (Dick, Allan & Basu, 1994). Bunny and Jackson (2014) argue that loyalty includes some degree of predispositional commitment toward a brand. It is a multidimensional construct with measures such as customers' perceived value, brand trust, customers' satisfaction, repeat purchase behavior and commitments.

Given these analysis, marketing strategy has become a fundamental issue that will enhance brand loyalty. Indeed, both the application of other marketing strategies and the understanding of loyalty behaviours have been discussed for more than many decades. Marketing practitioners have aggressively pursued strategies such as customer empowerment, customer involvement and customer connections (Shiri et al, 2014; Bowden, 2014; Maslowska et al 2016). Although these strategic issues are important to marketing researchers and practitioners, much of the research in brand loyalty has focused on the attitudinal components (Schivinski and Dabrowski (2015).

We contend that customer engagement is a useful platform to leverage loyalty behavior. Our examination of customer engagement in loyalty behaviour aim to extend prior research on both customer engagement and loyalty behavior. Of key interest to our study is the examination of whether and how customer engagement manifests in loyalty behavior in the hotel services sector. Thus, we expects to answer the following questions:

1) Do loyalty behavior emanate from customer engagement?
2) What type of customer engagement result to loyalty behavior?

3) Do customer engagement related to loyalty behavior?
4) How can customer engagement assist brand loyalty behavior?

We posit that resource dependency theory play an important role in consumers' decisions to patronized product or service from a particular brand. Thus, in this context, customer engagement and its dimensions may not be consistent with previous study on customer engagement. The purpose of this study is to examine the applicability, measurement and validation of customer engagement in loyalty behavior. Thus, the objectives are: 1) To investigate customer involvement in loyalty behavior, 2) To refine and develop a measure of customer engagement, 3) To evaluate the predictive validity of customer engagement on loyalty behavior and to discuss the implications of the findings for theory and practices.

Literature Review
Brand Loyalty: The Behavioural Perspectives

In marketing, research in brand loyalty has focused on factors that influenced brand loyalty (e.g. Micale et al, 2005; Symtex, 2007. Celerises and Bekam 2010). As a matter of fact, several scholars (e.g. Patterkg, 2010) have developed models of brand loyalty behavior that incorporate the impact of attitudinal and behavioural components on brands; however, of particular interest to this study is the power of the brand to engage consumers and make them feel emotionally attached (TV Choice, 2010).

Brand loyalty begins from brand experience. Brand experience occurs when consumers shop for or search for, and consume products (Kim & Ah Yu, 2016). Holistic experiences such as (e.g

sense, relation, acting and feeling) occur when one comes into contact with brands. The greater and more relational these senses are to the individual, the greater the repeat purchase behavior will occur. After contact has been made, psychological reasoning will occur followed by a buy or not-buy decision. This can result in repeat purchase behvaiour, thus marking the beginning of brand loyalty. Repeat purchase behavior necessitates brand loyalty behavior. Brand loyalty is not limited to repurchase behavior, as there is a deeper psychological reasoning as to why consumer of product will continuously repurchase products from one brand.

Aaker, as cited by Kim & Ab Yu (2016) posit that brand loyalty is the behavioural willingness to consistently maintain relations with a particular brand.

In this study, we focus on brand loyalty from the behavioural perspectives which states that it is a behavioural willingness to consistently maintain relationships with a particular brand. Research on brand loyalty in many marketing literature has dwelt extensively on the attitudinal perspectives, (Schivinski and Dabrowski, 2015), which relates to the customers willingness to purchase product from the brand at any reasonable cost. Attitudinal component of loyalty is psychological and lead to behavioural component (Meinyk & Bijmolt, 2015). In addition, the focus on individual customers to be consistent with prior research that measures customer engagement in loyalty behavior, in which my sampling will be based on individual customer level.

Customer Engagement
Customer engagement is somewhat related to co-creation. Indeed, many researchers have used customer engagement to define co-creation. For example Batorse (2011) define co-creation as the involvement and participation of customer in co-creation activities of an organization. Thus, we argue that research in customer engagement that has focused on involvement and participation of customers provides an important starting point for understanding customer engagement in service organizations. Slater and Kohli (2013) cited in the work of WiseGEEK, defined customer engagement as a concept in marketing, which is used to refer to the type of connections consumers make with other consumers, companies and specific brands. Achieving a high level of customer engagement is viewed as desirable because it tends to enhanced brand loyalty. Companies with a following of highly engaged customers have a dedicated fan base of people who not only buy their products, but also encourage others to do the same, thus creating a ripple effect (WiseGEEK,).

Customer can engage with companies and each other in several ways through media. In those days customer engagement was a one way traffic (Companies marketing to customers). However, the advent of internet has redirect the organization of customer engagement from company-to-customer, to customer-to-customer, customer-to-company and company-to-customer. Activities which could be considered facets of customer engagement include (e.g. visiting a company website, sharing it with others, creating a content about a company or product, engaging in social networks of people with shared interests, writing or calling companies and viewing Print).

Shiri, Sharom and Morgan (2014) define customer engagement as an intensity of

an individual's participation in and connection with an organisation's offering and/ or organizational activities, which either the customer or the organization initiate. Previous works in the area of customer engagement for example Hollebeek (2011), use immersion, passion and activation as dimensions of customer engagement, this was purely one sided as it dwelt on the psychological aspect of engagement. Again Brodie (2011) measure customer engagement using interactive, co-creation, customer experience which was also one sided as its look at customer engagement from social perspective. These studies has not being able to look at customer engagement from a holistic perspectives where psychographic, social, behavioural perspective will be combine in the study of customer engagement. Hence, we conceptualize a framework to guide study in customer engagement.

To our knowledge, previous study has not examined customer engagement with all the above dimensions in a single study. Thus, we seek to integrate the above dimensions in existing knowledge of customer engagement in the hotel industry.

Again, considering the degree of information and connections on consumers, the only way to develop penetrable customer engagement is to proactively connect with customers by listening to information (Trefler, 2014). Information sharing will empower the customer, give control and endorse customer a customer centric two-way dialogue (Dholakia & Firat, 2006; eMarketer, 2015). The sharing of information with regard the product, service and brand will redefine the role of the customer as they will no longer be seen as an end user in the process

(Dholakia & Firat, 2006). With information sharing, customers are seen as in partnership with the organizations. This development, afford them knowledge and understanding with high expectations. Thompson (2013) argued that information sharing between the organizations and the customers impact on business profitability. Sashi (2012) posit that for consumers to immerse in the consumption experience, organization and consumers must involve in sharing and exchanging information which generate increased awareness, interest, desire to purchase, acquistition, retention and loyalty amongst consumers evolving in relationship. Customer information sharing will result in trust, engagement and word-of-mouth through endless social circles (Trefler, 2014).

As a matter of fact, consumer have a fair idea of what they want and how they want it, hence it is left for organizations to meet up the high expectations of their customers and facilitate good customer experiences on mutuality (Ryan & Jones, 2011). We argued that, the more successful the customer engagement in terms of customer information sharing and exchanges, the more sustainable the relationship will be thus enhancing brand loyalty behavior (Sashi, 2012). On the basis of these arguments, we suggest the following hypothesis of customer information sharing on loyalty behavior in the hotel industry.

Hypothesis 1: Brand loyalty behavior in hotel industry is a function of customer information sharing and exchange.

A main point in multidimensional model such as the customer engagement is that consumers' involvement in the business and product development process. Such as design, marketing, sales, customer

service (Dagens media, 2009). The degree of involving the customer can be to make the customer a part of the product experience, and delivery process. We argued that, in a situation where customers are involved in product development, the product is considered a subset in what meets the customer's need of identification, problem solving and consumption. When customers has the possibility to influence the design and the consumption of the product itself is assumed to be of great importance for the customers buying decision and loyalty behavior. One good example of involving customer in production is Nike. With the concept of customer involvement, the company allow customers design their own sport shoes. In the recent past, companies have started to build web portals that involve customers in the idea generation, selection, development and commercialization (Rohrbeck, Steinhoff & Pender, 2010).

Involvement has to do with how customers interact with the business (e.g. customers attending company's events, are they willing to be a reference, will they share a case study, engaging on social media and involving in co-creation). When customers participate in organization's activities, then customers are involved. Customer involvement is critical for the survival of firms in today's technologically connected world (Treffer, 2014). To adapt to this progressive customer environment will mean communicating directly with customers so that they are involved in the process. The higher the customer involvement, the greater is the influence on customer acquisition, retention, increase brand awareness and loyalty behavior. Thus, customer involvement in the business and product development process in terms of design,

marketing, sales and customer service should positively influence loyalty behavior toward using the hotel services. Therefore, we propose that involving customer in the business and product development process have positive effect on loyalty behavior. We hypothesized as follows:

Hypothesis 2: Brand loyalty behavior on continuously using hotel services is a function of customer involvement in business and product development process.

Customer interactivity is another dimension of customer engagement in our study. Sashi (2012) posit that interactive culture is becoming the order of the day and that it is significantly influenced by technology, Hence, being connected has become fundamental to our existence (Build for change, 2014). Dholakia et al (2012) argue that connection is bringing consumers and organizations together and that it is critical for companies to take advantage and focus on capturing the attention of and interacting with well informed, business savvy consumers in order to serve and satisfy. Connecting with consumers established exclusivity in their experience, which potentially will increase brand loyalty, positive word of mouth and provides businesses with valuable consumer analytics, insight and retention (eMarketer, 2013, 2016). Customer engagement can come in the form of a view, an impression, reach, a click, comment, user generated content, or a share and these are measures of customer interactivity. Therefore, the way to develop penetrable customer engagement is to proactively connect with customers and this will empower them. The above practice will metamorphose a process of partnering between organizations and consumers

(Dholakia & FIrat, 2006). More especially when internet has provided consumers with the accumulation of much diverse knowledge and understanding, consumers now have increasingly high expectations and become to experiential value (Treffer, 2014; Dholakia & Firat, 2006). To give the consumers these privileges, they must involve in connectivity which will lead to increased brand awareness, interest, purchase desire, customer acquisition, retention and loyalty amongst consumers. The above will earn trust, commitment and word of mouth advocacy through customer interactivity. We argue that when customers are connected they get acquainted and are knowledgeable to their needs and cannot be cheated by any means. Thus, consumer interactivity interms of a user generated content, share, comment, click, reach should positively influence loyalty behavior. On the basis of this arguments, we suggest the hypothesis of customer interactivity on loyalty behavior.

Hypothesis 3: Behavioural loyalty is a function of customer interactivity in terms of User generated content, share, comment, click, reach.

Nirpaz et al (2016) defined customer support as a range of customer services to assist customers in making cost affective and correct use of a product, it includes assistance in planning, installation, training, troubleshooting, maintenance, upgrading, and disposal of a product. Customer support is considered as one of the main data channels for customer satisfaction research and a way of increasing customer retention in services organizations. Customer supports are like experiential services which are characterized by benefits orientation. Customers can be engaged with an organization when it help the customer in making cost effective and correct use of a product of the company. Robbner (2012) argue that the greater the customer are given supports in areas like planning, training, upgrading, and product disposal, the higher is the customer engagement, which in turn will lead to increase in brand awareness, customer retention, customer satisfaction and loyalty behavior.

Thus, customer support stands out as an important dimension in customer engagement marketing. This indicates that customer support such as helping customers in making cost effectiveness, and correct use of product, has a stronger effect on brand loyalty behaviours. Thus, we argue the following:

Hypothesis 4: Brand loyalty behavior is a function of customer support in areas of cost effectiveness and correct use of the product.

Figure 1: Conceptual Model
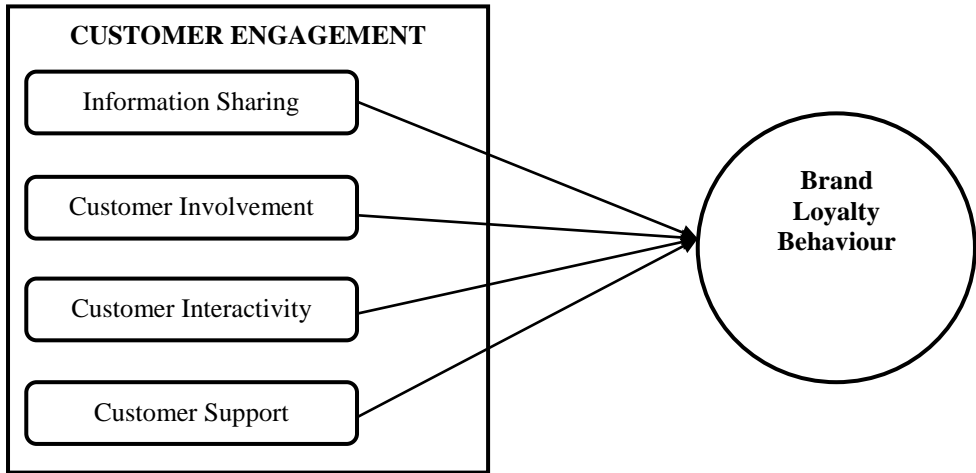
Source: Adapted from the work of Brodie (2011) but conceptualized to suit the researchers opinion (2017).

Method

We conducted a survey study to investigate customer engagement and brand loyalty behavior in the 3-star hotels in Rivers State using the proposed conceptual model. We applied the quasi-experimental design. The population of this study were 3-stars hotels in Rivers State which was twenty-one (21) in number as at the time of conducting this research. We applied the convenience sampling technique by assigning ten (10) copies of questionnaire to each of the 3-stars hotels in Port Harcourt metropolis. We have a total response of two hundred and ten respondents of the 210 only 180 completed and returned their questionnaire, 160 were usable, for a response rate of 76%.

Our unit of analysis for this study are the senior managers of the 3-star hotels in Port Harcourt, while my level of analysis is the hotels. We used the senior managers because they were knowledgeable about customer engagement implementation. Thus, we identified marketing managers, customer services managers. To qualify

for this study, the manager must stay more than 5 years in that hotel, must also be in the management team of the hotel who are involved in decision making. I interviewed senior managers from some hotels and also served questionnaire to solicit for information.

Measures

The conceptual model we put forward in figure 1 have five concepts, most of which are well founded in information research literature. Our choice of customer support as one of the dimension of customer engagement makes our model very unique to other studies on customer engagement. Thus, we included two items that measure customer support. To address the elements of customer involvement, we developed a four item scale. The first item addressed the "customer orientation" concept, the second item the "customer expectations", thirdly, customer are part of the product, experience and delivery, the fourth item was on customer possibility to influence product design (Treffer, 2014).

Customer interactivity was measured using four items in the work of Yin (2010). We measured information sharing with three items. The items were identical to those used by Amue and Ozuru (2014). Finally, we measured brand loyalty behavior using a two-item scale that we adapted from the study of Karma (2013). All the above mentioned items are represented on table 1 below.

Our respondents indicated their agreement with a set of statements using a 5-point likert-type scale ranges from strongly disagree (1) to strongly agree (5). The means, standard deviations and reliabilities of the variables are showed in table 1. The reliability of customer support was lower than the acceptable.

Table 1: Components Analysis of All Measurement Items

	Variable / Communities (c) and loadings	.C	1	2	3	4	5
4	**Customer Support**						
	We support our customers in cost effectiveness	.62	.25	.15	.23	.54	.41
	We help customers in the correct use of our product	.70	.26	.11	.26	.72	.20
2.	**Customer Involvement**						
	Customer have a fair idea of what they want	.82	.84	.20	.13	.15	.16
	We meet up customer expectations	.80	.81	.21	.21	.13	.16
	Customers are part of the product, experience and delivery	.90	.86	.10	.14	.18	.06
	Customers has the possibility to influence product design	.85	.85	.15	.16	.21	.12
3	**Customer Interactivity**						
	We capture and interact with well informed customers	.75	.16	.75	.18	.18	.11
	Provide customer valuable analysis	.87	.20	.73	.20	.16	.01
	We proactively connect with our customers	.80	.17	.70	.22	.18	.10
	We empower our customers	.82	.16	.25	.24	.21	.13
1	**Information Sharing**						
	Customers listen to our information	.86	.26	.15	.18	.27	.14
	Customers are given control to choose	.84	.13	.27	.19	.25	.14
	We give customers centric two-way dialogue	.87	.31	.18	.20	.21	.11
5	**Brand Loyalty Behaviour**						
	Customers continuously buys from our product	.89	.24	.25	.21	.23	.25
	Customer consistently maintain relation with brand	.90	.26	.21	.25	.21	.22
	Eigen –Values		10.61	2.50	1.74	1.55	1.30
	Variance explained		20.12	10.01	6.71	3.40	2.10
	Mean		5.25	3.15	4.21	5.22	4.50
	Standard deviation		1.81	1.60	1.52	1.38	2.12
	Cronbach's alpha		0.90	0.92	0.85	0.81	0.77

75 limit (Nummally, 1978). For the rest variables of the study, the reliability was acceptable.

To test the discriminate and convergence validity of the variables of our study. All the items were explained using factor analysis, with principal extraction that resulted in five principal factors. The principal components analysis showed that the factors explained 71 percent of the variance in the material (see table 1). Again, I discuss that the convergence validity of

customer support scale was somewhat low, with a factor loading of .54 for the first item. This item also has low discriminant validity, with a factor loading of .41 on brand loyalty behavior factor. For further finding of the reliability and validity of our study variables, we make use of intervariable correlations, shared variances and composite reliability as in table 2.

Table 2: Intervariable Correlations, Shared Variances and Composite Reliability

	Customer support	Customer involvement	Interactivity	Information sharing	Brand loyalty
Composite Reliability	.81	.90	.86	.92	.92
Customer support	.76	*			
Customer involvement	.61	.90	*		
Customer interactivity	.52	.54	.83	*	
Information sharing	.50	.48	.50	.81	*
Brand loyalty behavior	.62	.70	.75	.60	.88

From the table above, the composite reliability for each variable is above the recommended level of .50 that Hair et al (1998) as cited in the work of Mapharson (2015) suggested. Here, all variables share more variance with their indicators than with other variables. In our study we find that all variables share more variance with their indicators than with the other variables in our study. Another development I did was to estimate the measurement model fit for the study, the results are as follows: $x^2/df = 2.51$, Normal Fit Index (NFI) =

.96, Tucker-Lewis Index (TLI) = .98 and root mean square error of approximation (RMSEA) = .05; Thus, this fit of the measurement model is acceptable.

Results

As we indicate in figure 1, brand loyalty behavior is significantly influenced by consumer support, customer involvement, customer interactivity. These findings support the three hypotheses above, but not hypothesis one.

Table 3: Brand Loyalty Behaviour and Dimensions of Customer Engagement

Hypothesis	Variable	Constrained	X^2 Difference (df=1)
H1+	Information sharing	.18*	0.74
H2+	Customer involvement	.05	5.54*
H3+	Customer interactivity	.29*	6.76*
H4+	Customer support	.22*	5.09*

Note: + shows support in respect of the stated hypothesis

From table 3 above, we find partial support for the interaction between information sharing and brand loyalty behavior such that information gathering and sharing is not a useful strategy for empowering customer (Hypothesis 1: b= .74, P< .05), this interaction is not significant for brand loyalty behavior. For the interaction between customer involvement and brand loyalty behavior, we find support. Such that customer

involvement enhance brand loyalty (Hypothesis 2: b= 5.54, P ≤ .05).

We hypothesized that behavioural loyalty is a function of customer interactivity in terms of user generated content (UGC), share, comment, click, reach. Our results indicate significant effects (Hypothesis 3), infact the highest of all leading to better brand loyalty behavior. The final hypothesis pertaining to brand loyalty behavior and

customer support, we also find support for the stated hypothesis (Hypothesis 4: b = 5.09, P < .05).

Conclusion

From the results above, we can conclude that customer involvement, customer interactivity, and customer support has a positive effect on brand loyalty behavior where as information sharing has a negative effect on brand loyalty behavior. However, the most promising and notable effects revealed in this study are those of customer involvement and customer interactivity. These effects emphasize the relevance of involvement and interactivity in engaging customers in the hotel industry. Our introduction of customer involvement and customer interactivity in the model explained variance that these concepts entail. Three of the four variables we proposed as influencing brand loyalty behavior are significant. We conclude that there are support for hypotheses 2, 3, and 4.

The customer involvement variable explain 55.4 percent brand loyalty behavior. This indicates that customer involvement influences consumers' engagement for reasons of involving in co-creation and product development process (Dagens media, 2009). The results provide support for customer involvement influences that we proposed in Hypothesis 2.

Our results strongly support Hypothesis 3. However, our dimensions which we included in the model have direct effects on brand loyalty behavior in hotel industry. This supports other research (Treffer, 2014). Customer support contributed 50.9 percent to brand loyalty behavior.

Implications

Our results has several implications for marketing managers with regard to engaging customer to increase brand loyalty behavior. In the first place, the results of the study show a relatively strong impact of customer interactivity, customer involvement and customer support on brand loyalty behavior. Customer interactivity has a significant and positive impact on brand loyalty behavior, although interactivity appears to be particularly important as a driver for consumer engagement, such as user generated content, share, comment, click and reach. The effects of customer interaction on brand loyalty behavior has a direct relationships. This finding implies that hotel industry players should pay close attention to aspects of interactivity, such as user generated content, share, comment and click-when contacting people especially for experience service purposes. According to Dholakia and Firat (2006) technology-based interaction is a key factor that connect consumers and organizations together and that it is critical for companies to take advantage and focus on capturing the attention of and interacting with well-informed technology savvy consumers.

We observed that customer involvement has significant direct effect on brand loyalty behavior. This particularly pertains to how customers interact with the business, engaging on social media and involving in co-creation. This finding implies that industry players should consider customer involvement as a very useful strategy for brand loyalty behavior.

We also found the impact of customer support on brand loyalty behavior to be fairly significant. This emphasizes the relevance of marketers to consider customer support in which customers are assisted in planning, installation, training, maintenance, upgrading and disposal of products. Customer support

is revealed to have a moderate influence on brand loyalty behavior. A possible marketing strategy for increasing brand loyalty behavior through effects of customer support could be to assist customers in making cost effectiveness and helping the customers in the correct use of the product. This would enable potential customers to understand the usage of the product, thus increasing patronage.

The author also argue that, engaging customer to participate in and connection with an organization's offering and/or organizational activities will have the potential to create sustainable competitive advantage for companies that put-in-place the above marketing efforts. Thus, understanding the mechanisms that drive brand loyalty behavior in the hotel industry is very vital to the operators of the industry.

The results from the study show that captains of the hotel industry should be aware of involvement, interactivity, customer support and information sharing when looking at our model.

Limitations and Future Study

Our results and conclusions are subject to some limitations. First, the sample frame consists of 3-star hotels in Rivers State. Therefore, the extent to which other classes of hotels are involve has the potential to influence the findings. Second, our respondents were basically senior managers of the various hotels in the study. This limitation affect the results further because other key informants not used would have provided other useful information. Third, the consideration of only 3-star hotels should not be seen as accurate indicators of the best hotel in the area. This inherent limitation stems from the theoretical orientation of classification of hotels.

Again, further study should periodically update our study to provide a longitudinal assessment of what would take place in the environment. This study domicile in the behavioural component of brand loyalty. Further research should be carried out to explore the attitudinal perspectives of brand loyalty. Our study collect data only from the 3-star hotels, future study should collect data from 5-star hotels, 4-star and even 2-star hotels to represent the split of the industry. Our study relied on key informant data, the results are constrained by issue of hindsight bias. Further studies should look at quoted hotels in the stock markets.

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Public Perception of Police Activities in Okada, Edo State Nigeria

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Abstract: Police is an important institution in society. However, there are activities of police personnel in public domain which constitute embodiment of integrity problem. In line with this direction, this study specifically investigated public perception of police activities in a semi urban area, Okada in Edo State. The study adopted descriptive cross sectional survey design. Study population consisted of members of resident community. A sample of 194 respondents was used and this size was statistically determined using Cochran's formula. Data were collected at quantitative and qualitative levels. Method of data analysis was quantitative descriptive statistics and qualitative. Ninety-four percent of respondents had different forms of educational qualifications and 89.7% were 20 years and above. There were 30.0% of respondents that affirmed that police officers engaged in extortion on high way road. Respondents (12.4%) identified extra judicial killings associated with police activities. Other respondents (30.9%) maintained that police officers collaborated with criminals and 13.4% respondents identified harassment of unsuspecting citizens by police men. There were 69.1% respondents who claimed they paid for bail bond and 76.3% were victims of police illegal activities. Perception of service delivery by police men was rated moderate (43.3%), low (35.1%) and high (21.6%). There was consensus among police officials that some officers lacked integrity and public members were main collaborators that aided illegal practice. Police activities especially in Okada town, are fraught with illegal act and this really affected public rating of the organization. Therefore, there is need to intensify training and re-training of police officers especially in area of professionalism and public relations.

Keywords: Police Operation; Normative Expectation; Illegal Activities; Public Perception

1. Introduction and Statement of the Problem

Police is an important institution in the Nigeria society. The primary goal of formal policing is to protect life and property and ensure that society is in stable order. The role of Nigeria police cannot be undermined in crime prevention. The Nigeria Police perform well to check all forms of crime ranging from violent crime to property crime where people build their confidence and trust in the society they live. There is no community with organisation of human beings that does not have the presence of police in Nigeria (Okunola, 2002). This gives credence to the fact that police is an acceptable organisation. Similarly, relationship between police and host communities is cordial and this perhaps explain some of the reasons which account for the success of police to curb crime. Critically speaking, some studies reveal that police is effective in their role to protect lives and properties of people in Nigeria (Onoge, 1993; Okunola, 2002; Odekunle, 2005). The reason for this conclusion is that the presence of police in many communities in Nigeria reduced crime rate and people now show maximum cooperation with police to achieve effective crime control (Odekunle, 2005). Although it is a subject of debate to agree that Nigeria police is effective in crime control, it is however certain to agree that the presence of police in communities across Nigeria suggests the essentials of the services provided.

Police is not masquerade and the people that wear the uniform are members of the society. Also police is a profession of occupation that people engage to build career. The economic interest of police men and women is not different from other people in other professional career. Specifically, individual in his/her occupation aspires for success in socio-economic status. This suggests that central to the mind is the intrinsic and extrinsic factors that guide employees to remain committed and satisfied in their jobs. It is certain that employee like police officer desires decent work, want job that offers human dignity, freedom, equity, security of job stability and productive. However, the way people aspire to acquire desired opportunities and benefits in their job differ significantly. Lately in Nigeria, there are reports and insinuations that police officers engage in activities that undermine the integrity of what ideal police organisation should be (Human Rights Watch, 2016). There are cases of illegal extortions of money from unsuspecting public members, illegal arrest of unsuspecting citizens in a disguise for police raids, forceful collection of money from commercial motorists, intimidation of law abiding citizens, road blocks which have led to avoidable accidents on high ways and so on. This attitude is a major problem that constitutes negative public image of police organisation. Most of the studies available in the area of police have been focused on crime prevention, effective operation of police and criminological domain of police organisation (Alemika & Chukwuma, 2005; Ajibade, 2011; Ojo, 2012)). Yet there is growing public concern about police integrity in Nigeria and how this mix to affect effective policing. This is the main focus of this study. In line with above discussion, this study was focused to:

i. Identify activities of police personnel that negate normative expectation of the organisation in public domain.

ii. Examine implication of police activities on effective policing in resident community.

2. Literature Review

Nigeria Police began with a thirty-member consular guard formed in Lagos Colony in 1861. In 1879 a 1,200-member armed paramilitary Hausa Constabulary was formed. In 1896 the Lagos Police was established. A similar force, the Niger Coast Constabulary, was formed in Calabar in 1894 under the newly proclaimed Niger Coast Protectorate. In the north, the Royal Niger Company set up the Royal Niger Company Constabulary in 1888 with headquarters at Lokoja. When the protectorates of Northern and Southern Nigeria were proclaimed in the early 1900s, part of the Royal Niger Company Constabulary became the Northern Nigeria Police, and part of the Niger Coast Constabulary became the Southern Nigeria Police (Dambazau, 1994). Northern and Southern Nigeria were amalgamated in 1914, but their police forces were not merged until 1930, forming the Nigeria Police, headquartered in Lagos. During the colonial period, most police were associated with local governments (native authorities). In the 1960s, under the First Republic, these forces were first regionalised and then nationalised (Odekunle, 2005).

Nigeria Police performed conventional police functions and was responsible for internal security generally, for supporting the prison, immigration, and customs services and for performing military duties within or outside Nigeria as directed (Centre for Law Enforcement Education, 2003). Reportedly, there are between 1,300 and 2500 police stations nationwide (Odekunle, 2005; Nigeria Police, 2016).

Police officers were not usually armed but were issued weapons when required for specific missions or circumstances. They were often deployed throughout the country, but in 1989 President Babangida announced that a larger number of officers would be posted to their native areas to facilitate police-community relations (Alemika, 1997). This is now called community policing and there are police officers who are specially trained in America and Europe to enhance the innovation (Nigeria Police, 2016)

A substantial number of people in early 19th century in England resisted proposal for professional and uniformed Police. Their fear was that an armed force in the hand of the central government might threaten their freedom (Alemika, 1997). Moreover, when modern Police force started to develop later in the 19th century, most people were living under the control of European empire and European Police was organized to protect the ruler rather than the people (Alemika & Chukwuma, 2005). However, the British who so disliked the idea of armed military style Police of their own soil, seemed to have few or no qualms at the time about using military police to keep the colonies under subjection (Alemika & Chukwuma, 2005). The Nigeria Police force had its root and origin from the British colonial administration. In its inception, they were referred to as "yan doka" a kind of law enforcement agency (Baker, 2008). They worked diligently and were the most fearsome government agency, after the military (Dambazau, 1994). Incidence of Police brutality, corruption, violence, and abuse of power punctuated almost every decade of colonial Police history after political independence in Nigeria. In 1960 the Nigeria Police force (NPF) started as a

humble, honest and concerted institution. This can be explicitly acknowledge by their mission to the then Zaire to monitor and keep peace. They were highly respected and trusted by the people of Zaire because of their exhibition of professionalism, dedication and honesty (Alemika, 1997). What a remarkable mission.

However, the image and good name of the Nigeria Police force started plummeting, precisely from 1985 onward and the present precarious state of its existence the present situation of this once robust and outstanding institution is seriously under threat (Amnesty International, 2016). The pathetic state of service is that police are poorly and distastefully equipped, the training they undergo is a fire bridge approach exercise (Alemika & Chukwuma, 2005). The second most important threat has to do with the apparent unwholesome plague that has massively and grievously gripped this once remarkable organization, this is bribery and corruption (Alemika & Chukwuma, 2005; Amnesty International, 2016). The Nigeria Police and, bribery and corruption are two inseparable fellows. This menace is plausible institutionalised among and between members of the Police force. It has eaten extremely deep into soul of police. It has become Nigerian Police second nature. This is no prejudice to the Nigeria Police but rather an ostensible and pragmatic reality (Ajibade, 2011).

More so, it is clear that the Nigeria Police is the most unscrupulous organization that the general public have totally lost confidence in and disaffected with (Ajibade, 2011). It is still fresh in memory, the outburst and lashing against the Lagos state command in 1998. This was the time former Lagos state Police commissioner Alhaji Abubakar Tsav, was severely criticized due to accusation against police men who were conspicuously involved in crime and crime related act across the state (Akinadewo, 2015). The social vices perpetrated by the police still persist when former President Olusegun Obasanjo openly declared that members of the Police are criminals/murderers especially the Apo killing in Abuja. According to Olusegun Obasanjo, members of the Police force hired their guns to criminals to commit assassination, armed robbery, covering criminals and get returns from criminals (Centre for Law Enforcement Education, 2003).

Sadly, those at the top massively exploit and maltreat those at the lower cadre. At times, a certain percentage is deducted from their paltry salary in the name of honoring a visiting officer or taxing them wittingly or unwittingly for a so called donation for the wedding of the commissioner's daughter, whereas, the low ranking officer live in dilapidated and semi prisoners environment (Akinadewo, 2015). This is vividly clear of Police barracks across the country. In addition to that, it turns out to be a nightmare for a retired Policeman to successfully secure his retirement benefits in a short while. One can spend between one to two years or even beyond before securing his entitlements. It is a fact that top ranking officials demand huge sums of amount as bribe from individuals in order to facilitate and speed up the process of their papers and subsequent release of funds (Amnesty International, 2016).

Noteworthy also is the recruitment exercise, which has become a money making venture for those in charge. It is

reported that people seeking to join the Police force pay as bribe, between ₦30,000 and ₦40,000 before they could get entry into the Nigeria Police force training colleges across the country. This has led to recruitment of unqualified and questionable character as officers (CIA World Factbook, 2006). When it comes to salary increment, promotion, transfer or any due incentives or favour, one has to oil the palm of those concerned or "rub their back" before acquiring any of the above entitlements. There is illegal collection of N50 from motorists and others on high way roads, road blocks across the nation (Federal Bureau of Investigation, 2016). It is a complete waste of time arguing with the men in black when it comes to relinquishing ₦ 50 to the road side police officers.   It is evidently clear that billions of naira has been pumped into the Nigeria Police in order to boost, equip and fully prepare policemen for any uncertainty and also to improve their welfare. Yet the overall result is poor police image especially the activities of police in resident communities where people continue hold negative image of police.

3. Methodology

The study adopted cross sectional survey and descriptive design. Data were collected at one point in time using quantitative and qualitative method. The study population was composed of residents, male and female who lived in Okada community, a semi urban town in Edo state Nigeria. Okada town is the headquarters of Ovia North-East Local Government secretariat and with population of 65000 residents. The town is host to private university, commercial banks and other business activities. Sample size of the study was 194 and this size was determined using statistical method of Cochran sample size.

Sampling method consisted of purposive, random ballot and accidental sampling. Purposive sampling was used to select study location, Okada town. This was mainly because there is area command of police station sited in okada town and this provides for frequent activities of police in the town and public interaction. On the other hand the selection was informed by public complaints of police brutality and illegal activities perpetrated by some officers (Edo State Government Gazette, 2013). Okada town is composed of five political wards and each ward comprised some communities. Therefore, random ballot sampling was applied to select two wards and the composition of communities thereof. Accidental sampling was used to reach respondents who were selected to fill questionnaire and discussed items listed in the interviews. Method of data collection was quantitative and qualitative. Quantitative method was used to generate quantitative data in the form of statistics. Qualitative method was used to generate qualitative data in the form of textual soft data. Also instrument of data collection was composed of questionnaire and in-depth interviews (IDIs). There were 3 police officials purposively selected for interviews in the study. Method of data analysis was quantitative and qualitative. Quantitative method was based on descriptive statistics analysis in the form of tables, frequency and percentage. Qualitative method was based on content analysis and ethnographic method. This method sorted textual data generated from IDIs according to relevant objectives of the study and direct quotation of responses in the form of ethnographic summaries was applied. The study took into consideration some ethical values such

as seeking consent of respondents, anonymity of respondents, knowledge and security of both respondents and researcher.

4. Socio-Economic Characteristics

Findings from table 1 showed that respondents (26.8%) were within the age range 21-25 years. Respondents (10.3%) were below 20 years, 10.3% were 26-30 years, 17.5% were 31-35 years and 9.3% were 36-40 years. Other respondents (8.2%) were 41-45 years, 9.3% were 46-50 years and 8.2% were 51 years and above. The implication of this finding is that most respondents (74.2%) were below 40 years. This suggests that the population of the study was largely young population and active to social life. When respondents were asked to give information on their marital status, 69.1% said they were single. There were respondents that said they were married (24.7%), divorced (5.2%) and separated (1.0%). The educational qualification of respondents showed that 23.7% had post graduate academic qualification. Others had first degree qualification (16.5%), diploma/college education (9.3%) and post primary school qualification (37.1%). Few respondents (5.2%) had no formal education. The implication is that though literacy level was high in the study area, there were still instances of people who could not read or write. This negates the phenomenon of millennium development goals that attempted to achieve universal basic education (Micah and Amina, 2014).

Table 1: Distribution of Respondents by Socio-Demographic Characteristics

Age range	Frequency	Percentage
≤ 20 years	20	10.3
20-25	52	26.8
26-30	20	10.3
31-35	34	17.5
36-40	18	9.3
41-45	16	8.2
46-50	18	9.3
51 years and above	16	8.2
Total	194	100.0
Marital status	Frequency	Percentage
Married	48	24.7
Single	134	69.1
Divorced	10	5.2
separated	2	1.0
Total	194	100.0
Highest educational qualification	Frequency	Percentage
No formal education	10	5.2
Primary school	72	37.1
WASCE/GCE/NECO	16	8.2
OND/NCE	18	9.3
HND/First degree	32	16.5
Post Graduate	46	23.7
Total	194	100.0
Religious affiliation	Frequency	Percentage
African traditional religion	10	5.2
Islam	70	36.1
Christianity	110	56.7
Others	4	2.1

Total	194	100.0
Monthly income	Frequency	Percentage
Less than 5,000	88	45.4
5,001-10,000	20	10.3
10001-15000	30	15.5
15,001-20,000	18	9.3
20,001-25,000	12	6.2
25,001-30,000	2	1.0
30,001-35,000	6	3.1
35,001-40000	10	5.2
40.001 and above	8	4.1
Total	194	100.0
Occupation	Frequency	Percentage
Government ministries employees	18	9.3
Corporate service employees	12	6.2
Self employed	72	37.1
Teachers	14	7.2
Lecturers	6	3.1
House wife	20	10.3
Unemployed	18	9.3
Students	30	15.5
Other occupations	4	2.1
Total	194	100.0
Ethnic origin	Frequency	Percentage
Igbo	46	60.0
Yoruba	36	17.1
Hausa	30	11.4
Bini	76	7.1
Other ethnic group	6	4.3
Total	194	100.0

Source: Field Survey, 2014

Further findings have shown that 56.7% in the study area practiced Christianity. Other religious affiliation included Islam (36.1%), traditional beliefs (5.2%) and other varieties (2.1%) of religions. This made the study area a multi religious affiliation. Income distribution among respondents showed that 45.4% earned below N5000 naira monthly. This represented highest percentage of income distribution among respondents. The implication is that there was a general low level (70.2%) of income in the study area. Occupational distribution of respondents showed that there were respondents employed in government ministries (9.3%), corporate private sector (6.2%), self-employed (37.1%) and teachers (7.2%). Others were lecturers (3.1%), students (15.5%) and other forms of occupations (2.1%). The ethnic origin of respondents showed that 39.2% were *Bini* ethnic origin. This represented highest percentage of respondents. This perhaps is not unconnected with the fact that the study was conducted in the *Bini* dominated area, which is Okada town in Edo state. Other ethnic groups included Yoruba (18.6%), Igbo (23.7%) and Hausa (15.5%). Also there were other ethnic groups (3.1%) like Tivs, Igala, Igbira, Urhobo and Ijaws. The inference that could be drawn from this finding is that the study area was multi-faceted in ethnic grouping. This is good to promote inter ethnic relations and social

peace since Nigeria is a multi-ethnic nation-state.

5. Activities of the Nigeria Police Personnel that Negate Normative Expectation

The Nigeria Police was established to perform some statutory functions in the prevention of crime in our society. There are times when many aspects of the Police services resemble and promote illegality. The table below investigated some of the activities of Nigeria Police that reinforce sharp practices.

The finding in table 2 showed that when respondents were asked to give their views about their knowledge of Nigeria Police services, 75.3% said they had knowledge of Police activities. Also, there were 46.4% of the respondents that said Police officers in their community abuse fundamental human right of the citizens. Few respondents (15.5%) said it is not true that Police abuse human rights. Similarly, 55.7% of the respondents said it is true that Police are fond of demanding gratification in the form of kick back, bribes and illegal extortion of money from citizens. There were 7.2% of the respondents that said it is not true that Police demanded gratification from citizens. In this case, a respondent was emotional when he said:

> Nigeria Police has a bad history when it comes to collecting gratification from the citizens. They demand illegal money from people without doing what they are actually employed. They have wasted many innocent lives. They arrest indiscriminately and detain suspects without cause. They violate human rights without reason. Nigeria Police has bad reputation in the public domain (IDIs/respondents/okada town/2014).

Table 2: Distribution of Respondents by Activities of the Nigeria Police that Constitute Illegality

Knowledge of the Nigeria Police services	Frequency	Percentage
I know Nigeria Police force and their functions	146	75.3
I don't know Nigeria force and their functions	8	4.1
Indifferent	40	20.6
Total	194	100.0
Nigeria Police force abuse fundamental human right	Frequency	Percentage
It is true	90	46.4
It is not true	30	15.5
Indifferent	74	38.1
Total	194	100.0
Police is fond of demanding for gratification	Frequency	Percentage
It is true	108	55.7
It is not true	14	7.2
indifferent	72	37.1
Total	194	100.0
Police charge money for bails despite that it does not attract any financial charges	Frequency	Percentage
It is true	134	69.1
It is not true	6	30.9
Total	194	100.0
Police use to collaborate with criminals to aid and abet them	Frequency	Percentage
It is true	108	55.6
It is not true	86	44.3
Total	194	100.0

Police officers extort money from travelers on high way patrol services	Frequency	Percentage
It is true	138	71.1
It is not true	40	20.6
Indifferent	16	8.2
Total	194	100.0
There is non-challant attitude among Police officers when they are called to respond to distress.	Frequency	Percentage
It is true	102	52.6
It is not true	92	47.4
Total	194	100.0

Source: Field Survey, 2014

A female respondent shared a dismay view when she said:

> I don't think there is anything good about Nigeria Police. Many innocent lives have been lost to reckless attitude of Police officers. It is a pity that those we call our friends are now our worst enemy (IDIs/respondents/okada town/2014).

The implication of the view above authenticated the quantitative data in this finding when most respondents believed that Police personnel abused human rights and are fond of demanding gratification from the citizens. This practice still persist especially the report of international organisation that affirmed it (Amnesty International, 2016). Further finding showed that 69.1% of the respondents said Police charged money for bail bonds despite its fundamental provision of no monetary billing. However, 30.9% of the respondents negated the view above. Again, 55.6% of the respondents said Police collaborated with criminals to aid and abet crime in our society. This assertion supported the view held by former President of Nigeria, Olusegun Obasanjo who believed that Police collaborated with criminals to carry out nefarious activities in Nigeria (Centre for Law Enforcement Education, 2003). On the other hand, 44.3% of the respondents did not think that Police collaborated with criminals. Although it is true that some Police officers are refined and noble in character, the amount of illegal activities in the organisation is enormous as attested by majority of majority of respondents. Finding showed that 71.1% of the respondents believed that Police officers extort money from travelers on the high way patrols. There were respondents that were indifferent (8.2%) to the above view and 20.6% negated the view. Against this background information, a female respondent said:

> Many times, media report Police collaboration with criminals. There are instances when armed robbers operate in places close in distance to Police stations. It is after the operations of the robbery incident that you see Police personnel in the scene. They make indiscriminate arrests of law abiding citizens. They extort money from public. The particulars of vehicles may be original and up to date. Yet Police officers sometime cause deliberate delay. They request for drivers license and hold it to themselves in the bid to make situation worse. This is just very unfortunate (IDIs/respondent/Okada town/2014).

On the other hand, a respondent was quoted in his words, when he said:

> I think Police is trying. They are doing good work to prevent crime

in our society. There is good part of the Nigeria Police, though there are also bad aspects of the force agency. The organization of Police in Nigeria can be improved to restore its respect and honour(IDIs/respondent/Okada town/2014).

It may be pointed from the views above that there are positive aspects of Police activities that people appreciate as good and valuable. At the same time, there are negative aspects of Police activities that people are critical of and which present Police services in bad manner or otherwise corrupt activities of Police services. This has been major concern of the Police Force to eradicate abnormal behaviours of personnel (Nigeria Police, 2016). Similarly, 52.6% of the respondents said there is non-challant attitude among Police officers in times of distress calls. However, 47.4% of the respondents were opposed to the veracity of the above statement. Notwithstanding, there is widespread belief among respondents in this study that police personnel cannot be absolved from illegal activities that tend to undermine normative expectations of good police officer.

6. Police Service and Effective Community Policing

Police service is inevitable in every community. However, some services provided by police were designed to extort unsuspecting public members and this could affect effective service to host community. The table below shows respondents' perception of police services and how they affect community policing.

Table 3: Distribution of Respondents' Perception of Police Service in Resident Community

Police service is fraught with illegal activities	Frequency N=194	Percentage (**100%**)
Agreed	146	75.3
disagreed	8	4.1
Indifferent	40	20.6
Description of police service illegal activities	Frequency	Percentage
Illegal collection of money on high way patrols	54	30.0
Extra judicial killings	24	12.4
Collaboration with criminals	60	30.9
Harassment of unsuspecting citizens	26	13.4
Indiscriminate arrest of innocents	24	12.4
Others	6	3.1
Victim of Police service illegal activities	Frequency	Percentage
I have been a victim	148	76.3
I have not been a victim	40	20.6
indifferent	6	3.1
Police is effective in their service delivery	Frequency	Percentage
It is true	70	36.1
It is not true	96	49.5
Indifferent	28	14.4
Perception of effective service delivery in the community	Frequency	Percentage
High	42	21.6
Moderate	84	43.3
Low	68	35.1

Source: Field Survey, 2014

The finding in the table 3 showed that 75.3% of the respondents agreed that there were illegal activities carried out by Police officers in their community. On the other hand, 4.1% of the respondents disagreed and 20.6% of the respondents were indifferent. The forms of police service illegal activities ranged from illegal collection of money on high way patrols (30.0%) to extra judicial killings (12.4%), collaboration with criminals (30.9%), harassment of unsuspecting citizens (13.4%) and to indiscriminate arrest of innocent citizens (3.1%). There were 76.3% of the respondents that said they have been victim of police service corrupt practices. Similarly, 20.6% said they have not been victim of Police illegal activities, while 3.1% of the respondents were indifferent. In an interview conducted with a male respondent, he was unhappy in his views when he said:

> It is very unfortunate that Police no longer command respect of the citizens. When you see Police, you see corruption. Nigeria Police now is synonymous to corruption. There is double standard in the Police. Police are not my friend (IDIs/respondents/okada town/2014).

In the similar direction, another respondent stated clear in her views:

> I have been victim of Police inordinate ambition and corruption. Police have collaborated with persons who defrauded me of my hard earned money to deny justice to the just and reverse criminal case to favour criminals. They collaborated with criminals in many instances to pervert justice. Nigeria Police need to be reformed to flush out bad images (IDIs/respondents/okada town/2014).

These views by respondents both in quantitative data and qualitative data have confirmed the continuous fear by human right organisations that Nigeria Police brutalise unsuspecting citizens and also engaged in unwholesome activities (Amnesty International, 2016; Federal Bureau of investigation, 2016). Consequent upon the views expressed above, 49.5% of the respondents said that it is not true that Nigeria Police is effective in their service delivery. Few respondents (14.4%) were of the opinion that Nigeria Police is effective in crime prevention, while 36.1% were indifferent. The perceptions of the level of effective service delivery by police were rated high (21.6%), moderate (35.1%) and low (43.3%). The implication of the finding is that police service delivery is fraught with many practices that undermine public trust and lack luster attitude to cooperate in community policing. This means that some police officers are perceived as lacking honour and respected personality which seriously affect public trust and effective policing. However, there is conscious and frantic effort by Police organisation to address some of the problems in the Force which have seriously labeled Police in negative dimension in the public domain. This position above was attested to when a divisional police officer said:

> There is police ombudsman that sees to public complaints. It is true that some police officers are not doing well in this profession because of their illegal activities. There is no room for such officers now. Police organisation encourages public complaints against corrupt officers to flush out the bad eggs. The public also have a role to play if police must overcome the problem of illegalities among officers. People should up with facts and good evidence. Police organisation will

protect such public members as whistle blower (IDI/Divisional Police Officer/Okada/2014).

In another view, a Divisional Crime Investigative Officer said:

> Police alone cannot be bad and corrupt without latent support from members of the public. Some people in the community do not want follow the right order. They prefer to cut corners. Some Police men are ready to cooperate with such people provided it will benefit them financially. It is a bad scenario. The Police organisation is ready to flush out such unscrupulous element (IDI/Male Police Officer/Okada/2014).

Similarly, a female police maintained in her view when she said:

> There is need to improve salaries and allowances for police men and women. Police are human beings like other people out there. The condition of service is poor and not encouraging. This usually allows some officers to compromise (IDI/Female Police Officer/Okada/2014).

Therefore, it suffixes to say that the project to improve the image of police and policing in Nigeria is the responsibility of all stakeholders which consist of public members, police officers and government.

6. Conclusion and Recommendations

The study has established that police service in Nigeria is fraught with many practices that undermine the real value of the profession especially in the context of the community that was studied. Critically speaking, members of the community where this study was conducted expected that police profession should be service that people could rally round, respect and trust to protect community from incessant crime and criminal behaviour. The general expectation was that a police officer should be refined and eschew dishonourable behaviour that people could see as good example. However, many police officers engaged in sharp practices to extort money from unsuspecting public members, illegal road blocks in the pretence of checking crime, harassment of armless public, extra judicial killing and indiscriminate arrest. This unwholesome behaviour negates normative expectation of who a police man should be as it is obtained in other developed nations of the world like Britain which is a prototype origin of Nigeria police. This study therefore makes some recommendations that could possibly correct the ills in the police service.

i. The study established that notable numbers of police officers engaged in activities that undermined normative expectation of police service. This means that some serving officers take advantage of their profession to enrich themselves at the expense of the real service they are employed to provide. This study recommends that there should be public complaint boxes in specialized locations like post office, local government secretariat office and liaison offices, schools and banks and so on that would give members of the public opportunity to submit complaints about erring officers. It is therefore expected that this should be treated as urgent public affair by which culpable

officers could be punished to serve as deterrent in the service.

ii. Some services of police in the study area undermined public trust and this seriously affected effective community policing. The implication is that members of the community decline to cooperate with police in the fight against crime and criminals. Yet the ultimate goal of police is to protect lives and properties of people in the society of abode. Therefore it is required that police service should intensify the effort of community relationship to build trust among members of host community. The real problem is lack of trust in the community. Police can build public trust by establishing special unit in the service saddled with this specialised duty. The unit should collaborate with specialised institutions, universities, schools and non-governmental organizations and civil societies where it could be possible to build public trust.

7. Limitation of the Study

This study only focused on the activities of police that people perceived as illegal in resident community. However, there are individuals who are victims of police brutality which could be adequately engage in qualitative method of study. This may likely provide in-depth understanding of strategies used by police in their nefarious activities. The sample size of this study may be expanded in subsequent studies to allow for more accurate generalization.

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Students' Satisfaction with Major Academic Facilities in Private Universities in Ogun State, Nigeria

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Abstract: Higher educational institutions, particularly privately owned institutions, in developing countries are constantly challenged to improve on the quality of their facilities. This is necessitated by the need to ensure students' patronage. This study, therefore, examines students' level of satisfaction with library, ICT laboratory and classroom facilities in five private universities in Ogun State, Nigeria. Seven hundred and seventy copies of a questionnaire were distributed while five hundred and twenty-two were returned and valid for further processing. Data analysis using frequency distribution and weighted mean revealed that the students were generally satisfied with electricity supply and furniture in all three facilities; however, they were not satisfied with the number of escape routes and toilets. The paper recommends amongst others that the managements of the universities should, as a matter of priority, make efforts to improve the facilities with low level of students' satisfaction.

Keywords: Students, Satisfaction, Academic Facilities, Private Universities, Nigeria

1. Introduction
Higher educational institutions that strive to be among the best in this highly competitive academic environment should constantly improve on the quality of their teaching and physical facilities in order to attract more students to their respective institutions.

One of the most commonly used methods of obtaining students' perception of their facilities is the satisfaction survey. The satisfaction survey provides a true image, as perceived by the students, of the universities and colleges about their services and programmes. Satisfaction levels provide a more obvious picture of facilities and the environment provided to students. So the satisfaction of students with their educational facilities is an important tool to assess the quality of teaching and institutional effectiveness (Hussain, Jabbar, Hussain, Rehman & Saghir, 2014).

In most cases, satisfaction surveys are used by educational institutions to determine their strengths and weaknesses. It plays a major role in determining the originality and accuracy of a system especially the educational system. The higher the level of satisfaction, the higher will be the level of students' skill development, course knowledge and mentality (Malik, Danish & Usman, 2009). The success of any educational institution depends on the satisfaction of their students particularly with the facilities provided by such an institution. This is because students are the most important stakeholders and the primary consumers of the facilities in educational institutions and the satisfaction of all other stakeholders is dependent on the satisfaction of students (Khan, Ahmed & Nawaz, 2011; Marimuthu & Ismail, 2012).

In Nigeria, the increasing number of universities, particularly private universities, coupled with increasing students' population may have adverse effects on the state of facilities which might in turn affect students' patronage if they are not satisfied with the facilities. Hence, this study focuses on students' satisfaction with three major academic facilities in private universities in Ogun State, Nigeria.

2. Literature Review

University facilities constitute the major components of both direct and indirect action elements in the learning environment. Such facilities include all types of buildings and equipment for academic and non-academic activities, areas for sports and games, landscaping, farms and gardens including trees, roads and paths. Others are furniture and toilet facilities, lighting, acoustics, storage facilities and parking lots, security, transportation, information and communication technology (ICT), cleaning materials, food services and special facilities for the physically-challenged persons (Asiabaka, 2008).

These facilities play a pivotal role in the actualization of educational goals and objectives by satisfying the physical and emotional needs of the users. Knezevich (1975) emphasized that physical needs are met through provision of safe structures, adequate sanitary facilities, a balanced visual environment, appropriate thermal environment, and sufficient shelter space for work and play while emotional needs are met by creating pleasant surroundings, a friendly atmosphere, and an inspiring environment.

It is on this premise that several studies have been conducted in developed and developing countries of the world to examine users' satisfaction with academic facilities (Chen, Hsiao & Lee, 2005; Olasehinde-Williams, 2006; Kelso, 2008; Gruber, Fub, Voss & Glaser-Zikuda, 2010; Coskun, 2014). For instance, the study conducted by Chen, Hsiao & Lee (2005) adopted relationship marketing perspective to find the relationship between student satisfaction and student loyalty. Six

hundred Technology and Vocational Education (TVE) seniors of Great Taipei area were surveyed and regression analysis was performed to establish a model to predict "student loyalty" using "student satisfaction" as independent variable. The result indicated four satisfaction factors - school administration, academic activities, interpersonal relationship and physical facilities, have positive influence on student loyalty, however, school administration has the strongest influence on student loyalty.

A research by Malik, Danish & Usman (2009) analysed the impact of different services quality on student satisfaction in higher educational institutes of a big division of Punjab province of Pakistan. The study included both public and private sector institutes and data were collected from 240 students of business courses either enrolled in Master's degree programmes or undergraduate programmes in provincially chartered universities of the Gujranwala region. Using descriptive statistics to analyse the data, the results showed that students were overall satisfied with services of tangibility, assurance, reliability and empathy but not satisfied with parking facilities, computer labs, cafeteria services, complaint handling system.

The study conducted by Kassim (2009) assessed the library's performance of an academic library in Malaysia by measuring users' satisfaction with library services, infrastructure/place/space and collection/information provided. Six hundred and fifty (650) final year students from three faculties in a public university in Malaysia were sampled to seek their opinions on their satisfaction level based on statements regarding the three dimensions. Using descriptive and inferential statistics, findings showed that on the average, the respondents were only satisfied with the library services, infrastructure/place/space, collection/information of the library. However, they were relatively satisfied with infrastructure/place/space, collection/information and library services to users in that order. The study also revealed significant differences on the satisfaction on services, infrastructure/place/space, and libraries' collection/information among the respondents of the three faculties. The findings suggested amongst others that libraries should improve their service, infrastructure and collections so as to serve users' learning and research needs.

Gruber, Fub, Voss & Gläser-Zikuda (2010) investigated how students perceive the services they are offered at a German university and how satisfied they are with them. An evaluation study using a 15-dimension tool specifically developed to measure student satisfaction with services was conducted. A total of 374 copies of a questionnaire were distributed to students during 8 lectures for the pilot study and 544 students were given the questionnaire during 18 lectures for the main study. The outcome of the study revealed that students' satisfaction with their university is based on a relatively stable person-environment relationship. Thus, the satisfaction of students seem to reflect quite well perceived quality differences of offered services and of the wider environment. Students were particularly satisfied with the school placements and the atmosphere among students but mostly dissatisfied with the university buildings and the quality of the lecture theatres.

The work by Rehman, Shafique & Mahmood (2011) looked at users'

perception and satisfaction with reference services at Public Sector General University Libraries of the Punjab Province (Pakistan). A questionnaire-based cross-sectional survey research was designed using a 5-point Likert scale for the study. A total of 1,000 copies of a questionnaire were administered and a response rate of 51% was achieved. The study revealed that respondents were satisfied with the reference collection, staff, facilities and services provided but they were not satisfied with any category of reference service. The study recommended amongst others that libraries should consider the features of 'user friendliness' and 'helpfulness' while designing online or electronic services for their users.

In Pakistan, Khan, Ahmed & Nawaz (2011) conducted a study on the impact of quality of service on the satisfaction level of students and willingness to put more efforts. It considered five dimensions of service quality (SERVQUAL model) given by Parasuraman et al. (1988) i.e. assurance, empathy, reliability, tangibility and responsiveness. Out of 600 copies of a questionnaire distributed to students using simple random sampling technique, 495 were completed and found useful. Using descriptive and inferential statistics, the study showed that there is significant relationship between dimensions of service quality i.e. reliability, assurance, responsiveness and empathy with satisfaction while tangibility was having an insignificant relation with student satisfaction i.e tangibility is not associated with the students' satisfaction. This means that the physical appearance of the educational institution is not considered by students. In other words, students do not rate their institutions on the basis of

building and physical appearance but on the grounds of quality of education. Findings also showed that the higher the level of students' satisfaction, the greater their willingness to put great efforts into their studies.

Al-Khattab & Fraij (2011) measured the satisfaction of the students at Al-Hussein Bin Talal University, Jordan, with the quality of e-services. It mainly concentrated on the students' satisfaction with the in-house developed Student Information System (SIS). A questionnaire was administered to a sample of 350 undergraduate students and a response rate of 74% was achieved. Using inferential statistics for analysis, the study showed that the students were satisfied with the transition to e-services and the SIS has a positive impact on the students' satisfaction. Also, the study indicated that students value all five dimensions of service quality, but they value the tangibles dimension, which deals with the physical facilities of the university, the most.

A study by Abbasi, Malik, Chaudhry & Imdadullah (2011) measured the level of student satisfaction with services offered by Bahauddin Zakariya University (BZU), Pakistan. General survey was guided by well-structured questionnaire through convenience sampling administered to 401 students and data were collected from eighteen different disciplines and/or programmes. Ten major constructs i.e. teaching, administrative/management support, transportation, library, computer labs and general labs, accommodation, medical, sports, prayer/religious facilities, and classroom facilities were used. Mean analysis reflected students dissatisfaction with many core services and facilities like teaching,

administrative support, library, labs, accommodation, medical, and sports, while satisfaction was reported only in three augmented areas i.e. transportation, classroom and prayer facilities. Quite interestingly, no significant differences of opinion was recorded between male and female respondents. Overall, satisfaction level was alarmingly low and results indicated dissatisfaction of university students with educational services offered by Pakistani universities.

The work of Iwhiwhu & Okorodudu (2012) on users' satisfaction with library information resources, facilities and services in Edo State Central library, Benin-City, Nigeria had a sample size of two hundred (200) using availability sampling technique. The data were analysed using percentages, frequencies and mean. Findings from the study showed that users were dissatisfied with the information resources but were only satisfied with the services in the library such as hours of service, labelling services and bindery services with a mean of 2.87, 2.32 and 2.88 respectively. They were also satisfied with the furniture available.

In Nigeria, Oluwunmi, Durodola & Ajayi (2015) measured students' satisfaction with classroom facilities in three (3) private Universities in Ado-Odo Ota Local Government Council Area of Ogun State. A questionnaire was administered to 570 randomly selected students and a response rate of 76% was achieved. Using descriptive statistics, the study revealed that students were satisfied with electricity supply, ceiling finishes, windows/doors and furniture in their classrooms but, dissatisfied with the provision and availability of air-conditioning and internet facilities in classrooms.

Another study in Nigeria by Oluwunmi, Durodola & Ajayi (2016) analysed students' perception of the quality of facilities and services in four private university libraries in Ogun State. A modified SERVPERF questionnaire was developed and administered to seven hundred and forty-four (744) students and 70% response rate was achieved and analysed. Using SERVPERF dimensions (tangibility, responsiveness, reliability, assurance and empathy) the study revealed that students' general perception of library services in the four (4) universities is above average. However, some facilities in the libraries like parking space and escape routes were rated very low.

Judging from the review above on students' satisfaction with academic facilities in Nigeria and other countries, it is evident that many research efforts have focused on this issue. However, majority of the studies focused either on library, computer laboratory or classrooms facilities, only a few studies focused on these three academic facilities together. Hence, this study is designed to assess students' satisfaction with three academic facilities, in particular, libraries, classrooms and IT/ICT laboratories. This is because all students, irrespective of the category and discipline spend a considerable amount of time using these facilities (Wakefield & Blodgett, 1994; Leung & Ip, 2005).

3. Research Method
This study utlilised a survey research method in which a questionnaire was administered to 770 students in four (4) private universities in Ogun State, Nigeria. The private universities selected for this research include Babcock University (BU), Covenant University (CU), Bells University

(Bells) and Crescent University (CRE). The questionnaire was designed to elicit information on students' satisfaction with three major academic facilities (library, ICT laboratory and classroom) in the private universities. Data were analysed using descriptive statistics specifically frequency distribution, percentages and mean/ranking. The frequency distribution and percentages showed the demographic information of the students and the mean/ranking showed the variables on students' satisfaction with their library, ICT laboratory and classroom facilities. Students' satisfaction was assessed based on nineteen variables in the library, twenty variables in the ICT laboratory and eighteen variables in the classrooms of the selected universities. The students were asked to rate the variables using a Likert scale of 1 – Strongly Dissatisfied, 2 - Dissatisfied, 3 - Indifferent, 4 - Satisfied and 5 - Strongly Satisfied. The mean was then calculated for library [Apendices A - D], ICT laboratory [Appendices E - H] and classrooms [Appendices I - L]. Thereafter, the mean scores were used to rank the variables.

4. Results and Discussions

4.1 Students' Characteristics

Out of the 770 copies of the questionnaire distributed, a total of 522 (representing 68%) were retrieved for analysis. Information on the characteristics of students based on their gender, age, year of study and religion were sought. Responses are presented in Table 1 using frequency distributions and percentages. The result show that a higher percentage of the respondents were males (51%) with a higher proportion of the male respondents (56%) from Covenant University. Analysis on the age, year of study and religion of the respondents shows that majority of them were between 16 and 25 years of age (91%), between 200 - 400levels (78%) of their programmes and practice Christianity (62%).

Table 1: Students' Characteristics in the Selected Private Universities

S/N	Characteristics /Statistics	Sub – headings	BU F (%)	CU F (%)	Bells F (%)	CRE F (%)	Mean %
1	Gender	Male	61 (45)	90 (56)	60 (52)	56 (52)	51
		Female	75 (55)	72 (44)	56 (48)	52 (48)	49
2	Age	<16 yrs	15 (11)	0 (0)	0 (0)	10 (9)	5
		16-20 yrs	85 (63)	39 (24)	53 (46)	49 (45)	45
		21-25 yrs	29 (21)	123 (76)	59 (51)	41 (38)	46
		26-30 yrs	7 (5)	0 (0)	4 (3)	6 (6)	3
		> 30 yrs	0 (0)	0 (0)	0 (0)	2 (2)	1
3	Year of Study	100-Level	21 (15)	0 (0)	9 (8)	11 (10)	8
		200-Level	43 (32)	6 (4)	14 (12)	51 (47)	24
		300-Level	23 (17)	17 (10)	61 (52)	19 (18)	24
		400-Level	42 (31)	76 (47)	23 (20)	23 (21)	30
		500-Level	1 (1)	63 (39)	9 (8)	4 (4)	13
		Extra Year	6 (4)	0 (0)	0 (0)	0 (0)	1
4	Religion	Christian	117 (86)	156 (96)	77 (66)	0 (0)	62
		Muslim	19 (14)	6 (4)	39 (34)	108 (100)	38

4.2 Students' Satisfaction with Academic Facilities in Private Universities

Students' were asked to state their level of satisfaction with regard to their library, ICT laboratory and classroom facilities. To further analyse their response, the researchers assigned 5, 4, 3, 2 and 1 to "Strongly Satisfied", "Satisfied", "Indifferent", "Dissatisfied" and "Strongly Dissatisfied" respectively. The mean calculated were then ranked as shown in Tables 2 to 4.

Table 2: Students' Satisfaction with Library Facilities in the Four Private Universities

Facilities		BU	CU	Bells Ranking	CRE	Mean Ranking
Furniture (e.g. tables, chairs e.t.c)		5th	5th	1st	1st	1st
Thermal comfort (indoor temperature)		8th	8th	2nd	2nd	3rd
Visual comfort (Natural and Artificial lighting)		11th	8th	3rd	3rd	4th
Air quality within the library		10th	1st	4th	10th	4th
Electricity supply		4th	3rd	4th	4th	2nd
Wall finishing		1st	11th	4th	13th	7th
Floor finishing		13th	18th	7th	7th	12th
Ceiling finishing		12th	16th	7th	15th	14th
Cooling System	A/C	3rd	6th	9th	6th	4th
	Fan	15th	6th	9th	5th	8th
E-library facilities	Workstations	17th	11th	11th	18th	16th
	Speed of Internet access	7th	3rd	11th	19th	11th
Acoustic comfort (sound proofing)		19th	10th	13th	10th	14th
Library aesthetics		16th	11th	14th	16th	16th
Library size		2nd	11th	15th	8th	8th
Escape routes		18th	19th	16th	17th	19th
Constant water supply in the toilets		13th	16th	17th	14th	18th
No of toilets		8th	11th	18th	12th	13th
Toilet facilities for male and female students		6th	1st	19th	9th	8th

Based on the mean ranking presented in Table 2, majority of the students' were satisfied with furniture, electricity supply, indoor temperature, natural and artificial lighting, air-conditioning and air quality within the library. On the other hand, they were less satisfied with the number of workstations in the e-library section, library aesthetic, number of escape routes and water supply in the toilets.

Table 3: Students' Satisfaction with ICT Facilities in the Four Private Universities

Facilities	BU	CU	Bells	CRE	Mean Ranking
			Ranking		
No of workstations	8th	9th	1st	15th	7th
Speed of internet access	7th	2nd	2nd	10th	2nd
Thermal comfort (indoor temperature)	8th	9th	3rd	7th	4th
Electricity supply	4th	2nd	3rd	2nd	1st
Wall finishing	2nd	15th	5th	1st	3rd
Floor finishing	1st	18th	5th	6th	7th
Ceiling finishing	3rd	9th	7th	8th	4th
Cooling system A/C	4th	8th	8th	16th	9th
Fan	10th	7th	9th	12th	11th
Furniture (e.g. tables, chairs e.t.c)	12th	1st	10th	3rd	4th
Equipment (printer, computer)	6th	18th	11th	4th	11th
Visual comfort (Natural and Artificial lighting)	14th	9th	12th	5th	11th
Acoustic comfort (sound proof)	18th	15th	12th	13th	16th
Air Quality within ICT/IT lab	11th	4th	12th	9th	9th
ICT/IT lab aesthetics	13th	4th	15th	11th	14th
ICT/IT lab size	16th	6th	15th	14th	15th
Escape routes	20th	20th	17th	17th	20th
No of toilets	15th	15th	18th	20th	19th
Toilet facilities for male and female students	19th	9th	19th	18th	17th
Constant water supply in the toilets	17th	9th	20th	19th	17th

Table 3 provides the mean ranking, majority of the students' were satisfied with the electricity supply, speed of internet access, wall finishing, thermal comfort, ceiling finishing and furniture. In the order of least satisfaction, number of escape routes ranked 20th and toilet facilities provision issues and water supply in the toilets ranked 19th to 17th. This measure of satisfaction with escape routes and toilets shows consonance with the work of Oluwunmi, Durodola & Ajayi (2016).

Table 4: Students' Satisfaction with Classrooms Facilities in the Four Private Universities

Facilities	BU	CU	Bells	CRE	Mean Ranking
			Ranking		
Electricity supply	2nd	1st	1st	8th	1st
Furniture (e.g tables, chairs e.t.c)	5th	3th	2nd	9th	3rd
Ceiling finishing	12th	3th	3rd	2nd	3rd
Floor finishing	5th	16th	4th	7th	7th

Wall finishing		3rd	3th	5th	4th	2nd
Escape routes		18th	14th	6th	18th	15th
Visual comfort (Natural and Artificial lighting)		1st	1st	7th	15th	5th
Thermal comfort (indoor temperature)		8th	12th	8th	5th	7th
Acoustic comfort (sound proof)		14th	13th	9th	5th	11th
Air quality within the classrooms		13th	11th	9th	3rd	10th
Classrooms aesthetics		3rd	3th	11th	12th	6th
Classrooms size		9th	9th	12th	1st	7th
No of toilets		11th	3th	13th	13th	11th
Constant water supply in the toilets		14th	3th	13th	17th	13th
Toilet facilities for male and female students		10th	15th	15th	14th	15th
Cooling system	Fan	16th	10th	15th	11th	14th
	A/C	7th	18th	17th	16th	17th
Internet facilities		17th	17th	18th	9th	17th

Table 4 is based on the mean ranking of students' satisfaction with classroom facilities. It is observed that majority of the students' were satisfied with the electricity supply (1st), wall finishing (2nd), furniture and ceiling finishing were ranked 3rd. While students are not satisfied with the fact that there are no air-conditioners and internet facilities in their classrooms (17th). It can therefore be deduced that a majority of the students in the four private universities enjoy constant electricity in their classrooms.

In all, following from the findings of this study, it can be concluded that majority of the students were satisfied with electricity supply and furniture in all three facilities. It also provides support to the findings of previous research in both developed and developing nations of the world which indicates that students were satisfied with the furniture available in their library (Kumar, Hussain, Fatima & Tyagi, 2010; Hussain, Muzeeb & Fatima, 2011 Iwhiwhu & Okorodudu, 2012; Oluwunmi, Durodola & Ajayi, 2015).

5. Conclusion and Recommendations
This study examined students' satisfaction with three academic facilities in private universities in Ogun State, Nigeria. Findings from the study clearly showed that students were not satisfied with the number of escape routes and workstations, aesthetics and water supply in the toilets of their library; number of escape routes and toilets with water supply in the IT/ICT laboratory and air-conditioner, escape routes and internet facility in the classrooms. Based on these findings, it is suggested that:
1. The management of the universities should, as a matter of priority, make efforts to improve the facilities with low level of students' satisfaction. This can be achieved by allocating regular and sufficient fund in the budget for the quality improvement of such facilities.

2. Moreover, the universities should from time to time obtain feedback on the level of satisfaction students derive from the facilities as they can use this information to prioritise spending on facilities' provision and maintenance. The feedback can be gotten from the students via their students' council or through an arm of the student affairs department in each university.

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LIBRARY RANKING

Babcock University		
Facilities	**Mean**	**Ranking**
Wall finishing	4.52	1st
Library size	4.49	2nd
A/C	4.46	3rd
Electricity supply	4.45	4th
Furniture (e.g. tables, chairs e.t.c)	4.38	5th
Separate toilet facilities for male and female students	4.36	6th
Speed of Internet access	4.35	7th
No of toilets	4.34	8th
Thermal comfort (indoor temperature)	4.34	8th
Air quality within the library	4.33	10th
Visual comfort (Natural and Artificial lighting)	4.32	11th
Ceiling finishing	4.31	12th
Floor finishing	4.30	13th
Constant water supply in the toilets	4.30	13th
Fan	4.30	13th
Library aesthetics	4.25	16th
No of Workstations	4.20	17th
Escape routes	4.18	18th
Acoustic comfort (sound proof)	3.87	19th

APPENDIX B

Covenant University		
Facilities	**Mean**	**Ranking**
Air quality within the library	4.93	1st
Separate toilet facilities for male and female students	4.93	1st
Electricity supply	4.92	3rd
Speed of Internet access	4.92	3rd
Furniture (e.g. tables, chairs e.t.c)	4.67	5th
A/C	4.30	6th
Fan	4.30	6th
Acoustic comfort (sound proof)	4.04	8th
Thermal comfort (indoor temperature)	4.04	8th
Visual comfort (Natural and Artificial lighting)	4.04	8th
No of toilets	3.44	11th
Library aesthetics	3.44	11th
Library size	3.44	11th
Wall finishing	3.44	11th
No of workstations	3.44	11th
Constant water supply in the toilets	3.43	16th
Ceiling finishing	3.43	16th
Floor finishing	3.42	18th
Escape routes	3.41	19th

Bells University		
Facilities	**Mean**	**Ranking**
Furniture (e.g. tables, chairs e.t.c)	4.02	1st
Thermal comfort (indoor temperature)	3.97	2nd
Visual comfort (Natural and Artificial lighting)	3.96	3rd
Air quality within the library	3.91	4th
Electricity supply	3.91	4th
Wall finishing	3.91	4th
Floor finishing	3.90	7th
Ceiling finishing	3.90	7th
A/C	3.89	9th
Fan	3.89	9th
Workstations	3.88	11th
Speed of Internet access	3.88	11th
Acoustic comfort (sound proof)	3.87	13th
Library aesthetics	3.81	14th
Library size	3.79	15th
Escape routes	3.77	16th
Constant water supply in the toilets	3.72	17th
No of toilets	3.69	18th
Toilet facilities for male and female students	3.69	19th

APPENDIX D

Crescent University		
Facilities	**Mean**	**Ranking**
Furniture (e.g. tables, chairs e.t.c)	4.08	1st
Thermal comfort (indoor temperature)	3.85	2nd
Visual comfort (Natural and Artificial lighting)	3.82	3rd
Electricity supply	3.69	4th
Fan	3.60	5th
A/C	3.59	6th
Floor finishing	3.55	7th
Library size	3.47	8th
Separate toilet facilities for male and female students	3.45	9th
Acoustic comfort (sound proof)	3.44	10th
Air quality within the library	3.44	10th
No of toilets	3.41	12th
Wall finishing	3.37	13th
Constant water supply in the toilets	3.34	14th
Ceiling finishing	3.32	15th
Library aesthetics	3.31	16th
Escape routes	3.21	17th
Np of Workstations	3.09	18th
Speed of Internet access	2.96	19th

IT/ICT LABORATORY RANKING

APPENDIX E

Babcock University		
Facilities	**Mean**	**Ranking**
Floor finishing	4.53	1st
Wall finishing	4.45	2nd
Ceiling finishing	4.44	3rd
A/C	4.43	4th
Electricity supply	4.43	4th
Equipment (printer, computer)	4.41	6th
Speed of internet access	4.34	7th
No of workstations	4.32	8th
Thermal comfort (indoor temperature)	4.32	8th
Fan	4.31	10th
Air Quality within ICT/IT lab	4.29	11th
Furniture (e.g. tables, chairs e.t.c)	4.26	12th
ICT/IT lab aesthetics	4.23	13th
Visual comfort (Natural and Artificial lighting)	4.12	14th
No of toilets	4.11	15th
ICT/IT lab size	4.11	15th
Constant water supply in the toilets	4.09	17th
Acoustic comfort (sound proof)	4.04	18th
Separate toilet facilities for male and female students	4.02	19th
Escape routes	3.97	20th

APPENDIX F

Covenant University		
Facilities	**Mean**	**Ranking**
Furniture (e.g. tables, chairs e.t.c)	4.95	1st
Electricity supply	4.94	2nd
Speed of internet access	4.94	2nd
Air Quality within ICT/IT lab	4.93	4th
ICT/IT lab aesthetics	4.93	4th
ICT/IT lab size	4.91	6th
Fan	4.34	7th
A/C	4.33	8th
No of workstations	4.32	9th
Thermal comfort (indoor temperature)	4.32	9th
Ceiling finishing	4.32	9th
Visual comfort (Natural and Artificial lighting)	4.32	9th
Separate toilet facilities for male and female students	4.32	9th
Constant water supply in the toilets	4.32	9th
Wall finishing	4.31	15th
Acoustic comfort (sound proof)	4.31	15th
No of toilets	4.31	15th
Floor finishing	4.30	18th
Equipment (printer, computer)	4.30	18th
Escape routes	3.09	20th

APPENDIX G

Bells University		
Facilities	**Mean**	**Ranking**
No of workstations	4.00	1st
Speed of internet access	3.96	2nd
Thermal comfort (indoor temperature)	3.91	3rd
Electricity supply	3.91	3rd
Wall finishing	3.88	5th
Floor finishing	3.88	5th
Ceiling finishing	3.83	7th
A/C	3.81	8th
Fan	3.78	9th
Furniture (e.g. tables, chairs e.t.c)	3.77	10th
Equipment (printer, computer)	3.74	11th
Visual comfort (Natural and Artificial lighting)	3.72	12th
Acoustic comfort (sound proof)	3.72	12th
Air Quality within ICT/IT lab	3.72	12th
ICT/IT lab aesthetics	3.70	15th
ICT/IT lab size	3.70	15th
Escape routes	3.65	17th
No of toilets	3.63	18th
Toilet facilities for male and female students	3.62	19st
Constant water supply in the toilets	3.61	20th

APPENDIX H

Crescent University		
Facilities	**Mean**	**Ranking**
Wall finishing	3.74	1st
Electricity supply	3.71	2nd
Furniture (e.g. tables, chairs e.t.c)	3.63	3rd
Equipment (printer, computer)	3.39	4th
Visual comfort (Natural and Artificial lighting)	3.37	5th
Floor finishing	3.30	6th
Thermal comfort (indoor temperature)	3.28	7th
Ceiling finishing	3.19	8th
Air Quality within ICT/IT lab	3.13	9th
Speed of internet access	3.09	10th
ICT/IT lab aesthetics	3.07	11th
Fan	3.06	12th
Acoustic comfort (sound proof)	3.03	13th
ICT/IT lab size	3.01	14th
No of workstations	2.92	15th
A/C	2.89	16th
Escape routes	2.81	17th
Separate toilet facilities for male and female students	2.78	18th
Constant water supply in the toilets	2.66	19th
No of toilets	2.55	20th

CLASSROOM RANKING

APPENDIX 1

Babcock University		
Facilities	**Mean**	**Ranking**
Visual comfort (Natural and Artificial lighting)	4.53	1st
Electricity supply	4.49	2nd
Wall finishing	4.46	3rd
Classrooms aesthetics	4.46	3rd
Furniture (e.g tables, chairs e.t.c)	4.43	5th
Floor finishing	4.43	5th
A/C	4.40	7th
Thermal comfort (indoor temperature)	4.39	8th
Classrooms size	4.33	9th
Separate toilet facilities for male and female students	4.32	10th
No of toilets	4.31	11th
Ceiling finishing	4.30	12th
Air quality within the classrooms	4.29	13th
Constant water supply in the toilets	4.22	14th
Acoustic comfort (sound proof)	4.22	14th
Fan	4.15	16th
Internet facilities	4.11	17th
Escape routes	3.85	18th

APPENDIX J

Covenant University		
Facilities	**Mean**	**Ranking**
Electricity supply	4.34	1st
Visual comfort (Natural and Artificial lighting)	4.34	1st
Furniture (e.g tables, chairs e.t.c)	4.33	3rd
Ceiling finishing	4.33	3rd
Wall finishing	4.33	3rd
Classrooms aesthetics	4.33	3rd
No of toilets	4.33	3rd
Constant water supply in the toilets	4.33	3rd
Classrooms size	4.31	9th
Fan	4.30	10th
Air quality within the classrooms	3.73	11th
Thermal comfort (indoor temperature)	3.70	12th
Acoustic comfort (sound proof)	3.69	13th
Escape routes	3.67	14th
Internet facilities	3.10	15th
Floor finishing	3.09	16th
Separate toilet facilities for male and female students	3.08	17th
A/C	1.00	18th

APPENDIX K

Bells University		
Facilities	**Mean**	**Ranking**
Electricity supply	3.86	1st
Furniture (e.g tables, chairs e.t.c)	3.84	2nd
Ceiling finishing	3.83	3rd
Floor finishing	3.81	4th
Wall finishing	3.80	5th
Escape routes	3.79	6th
Visual comfort (Natural and Artificial lighting)	3.78	7th
Thermal comfort (indoor temperature)	3.76	8th
Acoustic comfort (sound proof)	3.72	9th
Air quality within the classrooms	3.72	9th
Classrooms aesthetics	3.71	11th
Classrooms size	3.69	12th
No of toilets	3.68	13th
Constant water supply in the toilets	3.68	13th
Toilet facilities for male and female students	3.66	15th
Cooling system	Fan	3.66	15th
	A/C	3.66	15th
Internet facilities	3.62	18th

APPENDIX L

Crescent University		
Facilities	**Mean**	**Ranking**
Classrooms size	3.44	1st
Ceiling finishing	3.33	2nd
Air quality within the classrooms	3.30	3rd
Wall finishing	3.13	4th
Thermal comfort (indoor temperature)	3.11	5th
Acoustic comfort (sound proof)	3.11	5th
Floor finishing	3.09	7th
Electricity supply	3.02	8th
Furniture (e.g tables, chairs e.t.c)	2.94	9th
Internet facilities	2.94	9th
Fan	2.90	11th
Classrooms aesthetics	2.84	12th
No of toilets	2.80	13th
Separate toilet facilities for male and female students	2.78	14th
Visual comfort (Natural and Artificial lighting)	2.76	15th
A/C	2.73	16th
Constant water supply in the toilets	2.63	17th
Escape routes	2.20	18th

A Simulation of the Removal of Fuel Subsidy and the Performance of the Agricultural Sector in Nigeria using a Dynamic Computable General Equilibrium Approach

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***Abstract*:** This study analysed the response of the agricultural sector to the removal of subsidy on refined petroleum in Nigeria, given its strategic role as a critical sector. Using a dynamic energy-environment CGE model based on the 2006 Nigerian Social Accounting Matrix (SAM), the study presents the results of the response of the agricultural sector to three different simulation scenarios. These include a partial (50 percent), gradual and a one shot (complete) removal of subsidy on imported refined oil in Nigeria. The results provided evidence that a complete or one shot removal of fuel subsidy is more favourable in terms of better performance of the agricultural sector as many of the key macroeconomic variables increased under the complete removal simulation scenario. It is recommended that a one shot removal of fuel subsidy will strengthen the agricultural sector performance and outputs, even though prices will move up in the short term. The long term benefits to the sector when funds are allocated to infrastructural and technological development will support overall growth and enhance food security in Nigeria.

***Keywords*:** Agriculture, dynamic CGE, econometric modeling, energy, subsidy on refined petroleum

JEL Classification: Q1, D5, C5, Q4

1. Introduction

Energy plays an important role in the production process of any output in an economy as it is a key input. Its effectiveness is crucial to economic growth and development of any sector in an economy. This is because all economic agents including households and all sectors require energy to function and contribute meaningfully to overall growth. As a low-income country with a high dependence on foreign trade, successive governments in Nigeria have taken several steps to reform the energy sector which includes the removal of subsidy in order to diversify the economy so as to boost domestic market and reduce over-dependence on crude-oil exports. The Petroleum Industry Bill (PIB) is an example of reform attempts by the government to make the petroleum industry more competitive. Despite being blessed with abundant natural resources including large oil and gas reserve, Nigeria still struggles to reap significant benefits from oil exploration and exportation. These and other challenges experienced particularly in the downstream sector resulted to the fuel subsidy reform policy. These reforms and policy measures, though, not without their challenges are intended to accelerate the growth of the economy. This happens through the re-allocation of the subsidy fund to priority sectors such as education, health, infrastructure and agriculture (Umar and Umar, 2013; Akinyemi, Alege, Ajayi, Amaghionyediwe and Ogundipe, 2015). It is important to note that agriculture was previously the mainstay of the Nigerian economy before the discovery of oil. The discovery of oil in commercial quantities at Olobiri, Bayelsa state in 1956, led to a redirection of focus from agricultural produce to oil exportation which has led to increased foreign earnings. Crude oil sale contributes between 67 percent and 75 percent to government revenue and about 96 percent of foreign exchange earnings in Nigeria (CBN Statistical Bulletin, 2014). The early 1950s and 1960s were the periods agricultural sector was known for huge foreign exchange earnings and employment generation. During these periods, many mineral and agricultural resources like cotton, cocoa, coal, rubber, tin, groundnuts, etc. were usually explored and exported in large quantities, while government spending was financed from their proceeds. This brought about huge foreign exchange earnings and increases in foreign reserves to a buoyant level and thus, led to the neglect of other important sectors, especially agriculture. Ever since then, the Nigerian economy has become dependent on oil for most of her trade and economic transactions with the rest of the world. However, since the introduction of Nigeria's vision 20:2020, the agricultural sector has been identified as a key sector to enhance Nigeria's economic diversification as a key driver of change (Cervigni, Rogers and Dvorak, 2013).

As part of the drive towards re-strategizing and re-positioning the agricultural sector for sustained growth and food security, the government had introduced a number of policies: including Agricultural Development Projects (1974), Operation Feed the Nation (1976), River Basin Development Authorities (1976), Green Revolution (1980) and Directorate for Food, Roads and Rural Infrastructure (1986). These policies, among other things, strive to enhance access of farmers to finance through agricultural loans, supply of fertilizers and

insecticides to tackle outbreak of diseases. These efforts will improve productivity and output growth in the sector. Thus, this study seeks to examine the response of the agricultural sector to a partial removal, gradual removal and a one shot removal of subsidy on imported refined petrol in Nigeria. The dynamic energy-environment (E2) Computable General Equilibrium (CGE) model based on the Nigerian 2006 Social Accounting Matrix (SAM) is employed to achieve this objective. This study is important as the results show the magnitude of impact of a policy change such as the removal of fuel subsidy on the agricultural sector. This is vital as it indicates the direction and policy prescription necessary to support growth in the sector, especially for policy-makers. The rest of the study is structured as follows: Section 2 presents an overview of literature, section 3 describes the methodology and dataset adopted for the study, section 4 presents the discussion and analysis of results while section 5 concludes with policy recommendations.

2. Overview of the Literature

Subsidy is said to exist when consumers of a certain commodity are assisted by the government to pay part of the prevailing market price for the product (Soile, Tsaku and Yar Adua; 2014). Thus, fuel subsidy could be expressed as the difference between the actual market price of fuel and the amount final consumers pay for the commodity. According to Bazilian and Onyegi (2012), developing countries have used fossil fuel subsidies for consumers basically as a means of achieving certain economic, social and environmental goals, which include resource wealth re-distribution, correction of externalities, poverty reduction and controlling inflation. About 90 per cent of the

country's foreign exchange earnings are accounted for by the exportation of crude oil (Obasi, 2003), thereby making it necessary for citizens to benefit from the resource endowment. This has led to government subsidising the pump prices of petroleum products, including petrol, kerosene and diesel. The acclaimed objectives of this fuel subsidy range from encouraging industrial growth, wealth distribution and to expand domestic consumption of the products by the household (International Energy Agency, Organisation of the Petroleum Exporting Countries, Organisation for Economic Co-operation and Development and World Bank, 2010). These objectives predate the important role energy access plays in various sectors of the Nigerian economy. This must have prompted the government to review the price of petroleum products so as to prevent the adverse effects of international price shocks on the domestic economy. This energy subsidy by the government through controls over pricing and supply would have been responsible for yearly rapid increase in the country`s capital expenditures and balance of payment disequilibrium. Although the country has four refineries with production capacity running into several thousands of litres per day, it still remains a large net importer of petroleum products. This is due to the fact that local production capacity is far below the country's current needs for both consumption and production. Therefore, the country still depends heavily on imported petroleum products.

In the past, government had taken steps to address the issue. This is predicated on the general notion that the welfare objective of such policy has seldom been achieved. Evidence from literature suggests that the upper and middle class

benefit more from fuel subsidy since they consume more than the low-income earners (Umar and Umar, 2013; Siddig, Aguiar, Grethe, Minor and Walmmsley, 2014). The implication of this is the unequal distributive role of resource allocation which imposes persistent fiscal pressure on government spending yearly. Another issue is the perceived ways in which the removal of fuel subsidies could affect the domestic economy as a whole. On the one hand, the local prices of the product will increase with the removal and this could trigger inflation. On the other hand, this removal could allow a huge amount of government capital expenditure to go into other uses that could enhance overall productivity in the economy, such as infrastructure. In addition to this, the removal of subsidy is argued to support growth of the economy and improve environmental quality through a reduction of carbon emission (through reduction in use of fossil fuel-based energy).

In empirical literature, there is limited number of studies on the impact of fuel subsidy removal on the performance or output of the agricultural sector, even for Nigeria, with the exception of the study of Atoyebi *et al.* (2012) which used questionnaires to analyse how output in the agricultural sector will change with the removal of subsidy in Nigeria.. Many of the studies often analyse the impact (mainly distributional and economic) on the removal or reform of agricultural subsidies and not fuel subsidy in particular. This is the important gap this study will be filling. For example, Ansari, Salami and Veeman (2014) examined the distributional consequences of subsidy removal from the agricultural and food sectors using a price-based Social Accounting Matrix

(SAM) analysis. They found that the low-income rural households will be most affected when these categories of subsidies are removed due to high prices of food and agricultural produce which is capable of affecting welfare negatively. Also, Vangelis (2007) assessed the implications that reforming agricultural subsidies will have for sustainable development for New Zealand. The findings presented suggested drawing on the three pillar of sustainable development (economic, social and environmental), the economic and environmental effects were broadly positive while the short-term negative social effects were basically muted and less pronounced.

Theoretically, it is expected that the removal of fuel subsidy will influence the agricultural sector either positively or negatively. The negative effect is reflected in the increase in the cost of agricultural produce attributed to the high cost of transportation which is a crucial component of the logistics. However, Atoyebi (2012) stated that despite the economic hardship often associated with fuel subsidy removal, it is expected that the policy can transform the economy through diversification. This can take place by driving investment into the agricultural sector given that the savings from fuel subsidy can result to increased budgetary allocation for the sector. Furthermore, the agricultural sector, a primary sector of the Nigerian economy is adjudged more prone to subsidy removal shocks. This is partially attributed to the role it plays in the development of other sectors, especially the industrial sector with the contribution of the sector to GDP, amounting to an average of 23.48 percent between 2010 and 2014. Since the 2014 rebasing, the development of this sector has been argued crucial to

economic and physical developments of the Nigerian economy. As stated by Omorogiuwa, Zivkovic and Ademoh, (2014), an in-depth understanding of the dynamics of the agricultural sector through research on development prospect is essential to the progress of the Nigerian economy. In light of this, the study investigates the effect of a fuel subsidy removal policy on the agricultural sector under different simulation scenarios.

3. Methodology and Data

This section describes the features of the model employed for the study and a description of the dataset.

3.1. The Model

The Energy-environment (E2) dynamic Computable General Equilibrium (CGE) model for the Nigerian economy was employed to analyse the response of the agricultural sector to a policy change of the removal of fuel subsidy over a five-year period. The study adapted the energy-environment dynamic CGE model of Adenikinju, Omenka and Omisakin (2012) which is based on the dynamic single country CGE model of the 2012 Partnership for Economic Policy (PEP) model. The study presents the "business-as-usual" scenario for the agricultural sector when government continues to provide subsidy for petroleum consumption and compares with an alternative scenario where fuel subsidy is removed. This is in view of it being a means of driving a green growth strategy which is consistent with the Nigerian Vision 20:2020 development goal.

The model characterises the behaviour of the production structure, commodities and the different agents, following the description in the PEP dynamic model. The production structure follows a nested structure where firms maximise profits subject to the constraints of available technology in a perfectly competitive environment. At the top level, sectoral output of each productive activity is produced from the combination of value added and intermediate consumption in fixed shares (Decaluwe, Lemelin, Robichand and Maisonnave, 2013). At the lower level, value added is composed of composite labour and capital which follows a constant elasticity of substitution. The industry is responsible for the production of commodities which are either consumed domestically or exported; likewise domestic consumption is allocated between domestic production and imported goods. This relationship depends on the degree of elasticity between domestically produced commodities and the imported one (Armington Assumption). The different agents receive and make payment within the system. For example, households receive income from labour and capital income and also transfer from other agents which are spent on consumption on goods and services, payment of taxes, transfer and the remaining is saved. Firms or business units in the model derive income from their share of capital income and transfers received from other agents while also paying business taxes to the government.

The government draws income from household and business income taxes and other forms of taxes on production, goods and imports (Decaluwe *et al.,* 2013). In addition to this, income is received from its share of capital remuneration and transfers from other agents including the rest of the world. The foreign sector which is considered the rest of the world (ROW) collects payments for imported goods and services, transfer from domestic agents

and its share of capital income. On the other hand, the ROW spends on the domestic economy in form of payment for exports and transfer to domestic agents and the difference between foreign income and payment is ROW savings which is equal to the current account balance.

3.2. The Dataset

The dataset employed in the model is the 2006 Nigerian Social Accounting Matrix (SAM) which is the most recent SAM for the Nigerian economy. A SAM shows the flow of transactions within an economy presented in rows (revenues) and columns (expenditure). The SAM was, however, further re-aggregated to specifically account for the refined oil sector which helps to better capture the objective of the present study. The re-aggregation reduced the number of sectors and commodities to eight sectors/productive industries and nine different commodities respectively. Also, it consisted of two households (rural and urban), one firm, a government sector, the rest of the world and three factors of production (land, labour and capital). The discussion focuses on the appraisal of the performance of the agricultural sector with a removal of subsidy on petroleum under three different scenarios.

3.3. Simulation Design and Macro Closures

The model simulated an increase in import tariff on refined oil in order to ascertain the changes in the economy especially in terms of its effects on carbon emission changes. The study performed three simulations which involved a partial (SIM1), gradual

(SIM2) and complete (SIM3) removal of subsidy paid on fuel by increasing import tariff on refined oil (petroleum). Relating to the closure rules, the study adopted the neo-classical savings driven macro closure rules as it best describes the structure of the Nigerian economy. The current account balance and the budget deficit were fixed; foreign savings by the rest of the world is assumed exogenous with fixed international prices and flexible exchange rate (real) which is the *numeraire* of the model (nominal exchange rate). The elasticity of substitution between imported refined petroleum and the domestically produced is assumed inelastic as a large percentage of refined petroleum consumed is imported since the local refineries only produced a very minimal proportion. Thus, degree of substitutability between the two is considerably low in the Nigerian economy.

4. Presentation and Discussion of Results

The results from the three simulation scenarios are presented and discussed under this section with their policy implications on the economy.

4.1. Presentation of Results

As discussed previously, the strength of the CGE modeling technique lies in its ability to show the degree of change in the different sectors of an economy when there is a policy change. The removal of fuel subsidy as a policy shift is expected to produce some changes in each of the sectors and the changes for the agricultural sector are presented in this section.

Table 4.1: Imports in Agricultural and Food Sector

Year	Agric.			Food		
	SIM1	SIM2	SIM3	SIM1	SIM2	SIM3
1	0.19	-0.29	-0.49	0.67	-0.83	-1.38
2	-0.15	0.23	0.53	0.48	-0.54	-0.58
3	-0.47	0.58	0.96	0.34	-0.47	-0.42
4	-0.76	0.87	1.28	0.24	-0.49	-0.39
5	-1.04	1.13	1.55	0.18	-0.57	-0.45
Ave.	**-0.45**	**0.50**	**0.77**	**0.38**	**-0.58**	**-0.64**

Source: Author's Computation based on simulation results from GAMS software

An increase in import tariff on imported refined oil, which is what was represented by removal of subsidy, makes price of imported refined petrol relatively expensive. This is given that the Armington assumption and the elasticity of substitution between locally produced goods and imported goods is two. Furthermore, it is expected that demand and consumption for imported goods will increase in as much as all imports can be financed with revenues from exports (Okodua and Alege, 2014). A 50 percent or partial removal of subsidy which is given as SIM1 from Table 4.1 was found to result to a fall in agricultural imports by 0.45 on the average over a five year period. Only the first year recorded an increase in imports of agricultural commodities, while the years following experienced a decline. However, the opposite was the case for food imports when there was a partial removal. When a gradual (SIM2) and a one shot (SIM3) removal was implemented, agricultural imports increased by 0.50 percent and 0.77 percent respectively. The results for food imports however fell by 0.58 percent and 0.64 percent for gradual and complete removal over the five years analysed.

Table 4.2: Exports in Agricultural and Food Sector

Year	Agric.			Food		
	SIM1	SIM2	SIM3	SIM1	SIM2	SIM3
1	0.07	-0.08	-0.14	0.07	-0.08	-0.14
2	-0.12	0.13	0.23	-0.12	0.12	0.23
3	-0.36	0.43	0.69	-0.36	0.43	0.69
4	-0.64	0.83	1.22	-0.64	0.83	1.22
5	-0.96	1.32	1.82	-0.96	1.32	1.82
Ave.	**-0.40**	**0.53**	**0.76**	**-0.40**	**0.53**	**0.76**

Source: Source: Author's Computation based on simulation results from GAMS software

Table 4.2 presents the percentage deviation from the base values for different simulation scenarios for agricultural and food exports over a five-year period. Overall, export of both food and agricultural commodities under a gradual and complete removal was found to have increased. This increase is given by 0.53 percent for agriculture under SIM2 and 0.76 percent under SIM3; while for food, it represents 0.53 percent under SIM2 and 0.76 under SIM3. However, for the two commodities there was a decline in total exports when a partial or 50 percent removal was implemented in the modelling. This is in view of the assumption that the current account balance is held fixed in the model.

Table 4.3: Change in Output

Year	Agric.			Food		
	SIM1	SIM2	SIM3	SIM1	SIM2	SIM3
1	0.18	-0.24	-0.42	0.45	-0.55	-0.92
2	-0.19	0.24	0.49	0.17	-0.21	-0.14
3	-0.56	0.68	1.12	0.12	0.11	0.36
4	-0.96	1.17	1.73	-0.43	0.45	0.85
5	-1.37	1.70	2.34	-0.75	0.84	1.35
Ave.	**-0.58**	**0.71**	**1.05**	**-0.09**	**0.13**	**0.30**

Source: Author's Computation based on simulation results from GAMS software

In Table 4.3, the results presented suggest that agricultural and food output will shrink by 0.58 percent and 0.09 percent when subsidy is partially removed. However, output was found to expand for agricultural commodities by 0.71 percent in SIM2 and 1.05 percent in SIM3. Food output also increased by 0.13 percent when there was a gradual removal and by 0.30 percent with a complete removal.

Table 4.4: Labour

Year	Agric.		
	SIM1	SIM2	SIM3
1	-	-0.81	-
2	-0.39	-0.48	0.69
3	-0.87	-0.34	1.65
4	-1.44	-0.26	2.77
5	-2.11	-0.22	4.03
Ave.	**-0.96**	**-0.42**	**1.83**

Source: Author's Computation based on simulation results from GAMS software

Table 4.5: Capital

Year	Agric.		
	SIM1	SIM2	SIM3
1	0.66	-0.81	-1.34
2	0.42	-0.48	-0.49
3	0.22	-0.34	-0.22
4	0.05	-0.26	-0.07
5	-0.08	-0.22	-0.01
Ave.	**0.25**	**-0.42**	**-0.42**

Source: Author's Computation based on simulation results from GAMS software

Tables 4.4 and 4.5 shows the percentage variation of labour and capital from base periods in the agricultural sector when subsidy on imported refined petrol is partially, gradually or completely removed. Over the five year period, labour is expected to fall by 0.96 percent when a partial removal is introduced while a gradual removal will result in a 0.42 percent decline. Under the one shot removal, labour will increase by about 1.83 percent. In terms of capital, the sector is expected to experience a decline of 0.42 percent when there is a gradual and complete removal while there was an increase of 0.25 percent when the subsidy is partially removed.

Table 4.6: Consumption of Households

Year	SIM1		SIM2		SIM3	
	hr	hu	hr	hu	hr	hu
1	0.33	0.34	-0.40	-0.41	-0.67	-0.68
2	0.17	0.18	-0.19	-0.22	0.18	-0.22
3	-0.01	0.01	-0.02	-0.06	0.11	0.06
4	-0.18	-0.15	0.17	0.11	0.39	0.32
5	-0.37	-0.33	0.38	0.31	0.68	0.59
Ave.	-0.01	0.02	-0.01	-0.05	0.07	0.01

Source: Author's Computation based on simulation results from GAMS software

Table 4.6 depicts the percentage variation in consumption of the rural and urban households for the agricultural sector. The rural household consumption of agricultural produce will only increase by 0.07 percent when subsidy is completely removed and decline by 0.01 percent when subsidy on refined oil is partially and gradually removed. On the other hand, urban household consumption will fall by 0.05 percent under the gradual simulation scenario but increase by 0.02 percent and 0.01 percent under the partial and complete removal scenario respectively.

4.2. Discussions and Policy Implications

Overall, the results from the analysis performed showed a mixed result, that is, the removal of fuel subsidy in Nigeria will have both positive and negative impacts on the agricultural sector. Generally, there were positive changes for many of the variables when there was a one shot or complete removal of the subsidy. For example, output in food and agricultural produce, labour, consumption for both rural and urban households increased under the third simulation (Simulation 3) which represents a complete removal. Other positive effects were observed for exports of food and the imports and exports of agricultural products. The partial and gradual simulation also showed some positive change in terms of increase, however, there was a more favourable outcome under the complete removal simulation, especially as there was increase in agricultural output. As earlier indicated in the overview of literature, a limited amount of literature exists on the response of the agricultural sector to the removal of fuel subsidy as many of the studies focus on how the removal or reform of agricultural subsidies impacts on the sector. However, result from this study is similar to the findings of Atoyebi *et al.* (2012) as they equally found a positive correlation between fuel subsidy removal and the prices of agricultural output using questionnaires. Thus, this current study furthers the frontier of knowledge by also showing the change in other indicators such as imports, exports, labour, capital and household consumption using an economy-wide approach (CGE modelling).

5. Concluding Remarks

The study had attempted to investigate the response of the agricultural sector to a policy shift of a partial, gradual and complete removal of subsidy on imported refined oil. The results presented above evidently suggest that the removal of subsidy on imported petrol will impact the agricultural sector differently under varying simulation scenarios as discussed earlier. Also, the results appear mixed for the different variables discussed over the five-year period under consideration. However, overall, the analysis performed showed

that the agricultural sector will have a better performance under a one shot or complete removal as most of the key macroeconomic variables (output, imports, exports, capital) increased under the complete removal (Simulation 3) scenario. Their implications were presented in the previous section. It is recommended that a one shot removal of fuel subsidy will strengthen the agricultural sector performance and outputs, even though prices will initially move up in the short term due to high cost of production, inputs and transportation. The long term benefits to the sector when funds are allocated to infrastructural and technological development will overall support growth and enhance food security in Nigeria.

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